



## Final Program

# HCI2009 International

13<sup>th</sup> International Conference on  
Human-Computer Interaction

*jointly with:*

Symposium on Human Interface (Japan) 2009

8<sup>th</sup> International Conference on  
Engineering Psychology and Cognitive Ergonomics

5<sup>th</sup> International Conference on  
Universal Access in Human-Computer Interaction

3<sup>rd</sup> International Conference on  
Virtual and Mixed Reality

3<sup>rd</sup> International Conference on  
Internationalization, Design and Global Development

3<sup>rd</sup> International Conference on  
Online Communities and Social Computing

5<sup>th</sup> International Conference on  
Augmented Cognition

2<sup>nd</sup> International Conference on  
Digital Human Modeling

1<sup>st</sup> International Conference on  
Human Centered Design

Under the auspices of 11 distinguished international boards of  
269 members from 41 countries.

**19-24 July 2009**

Town and Country Resort  
& Convention Center  
San Diego, CA, USA

[www.hcii2009.org](http://www.hcii2009.org)



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**HCI2009**  
INTERNATIONAL

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# Conference at a Glance

## Conference Registration – Secretariat

Conference Registration will take place at the Conference Secretariat, located at **Golden Pacific Foyer**, during the following hours:

Saturday, 18 July	15:00 – 19:00
Sunday, 19 July	08:00 – 19:00
Monday, 20 July	08:00 – 19:00
Tuesday, 21 July	07:30 – 17:00
Wednesday, 22 July	07:30 – 19:00
Thursday, 23 July	07:30 – 19:00
Friday, 24 July	07:30 – 18:00

The Conference registration fee includes:

- Participation in all open technical sessions (i.e. Parallel Paper Presentations)
- Entrance to the exhibition
- Refreshment breaks
- Conference proceedings in DVD
- One Gala Dinner Ticket and one Drink Ticket

**Cancellation policy:** Registration fee for any event is non-refundable.

Program	
Sunday 19 July 2009	<ul style="list-style-type: none"><li>• Tutorials Day 1 - <i>page 11</i></li></ul>
Monday 20 July 2009	<ul style="list-style-type: none"><li>• Tutorials Day 2 - <i>page 17</i></li></ul>
Tuesday 21 July 2009	<ul style="list-style-type: none"><li>• Tutorials Day 3 - <i>page 26</i></li><li>• Opening Plenary Session - <i>Room: Atlas Ballroom, at: 17:30</i> Chair: Michael J. Smith, USA Keynote address "<i>Sustainability: Lean and Green. The next decade of HCI opportunity</i>" by Daniel Rosenberg - <i>page 5</i></li><li>• Gala dinner - <i>page 104</i></li></ul>
Wednesday 22 July 2009	<ul style="list-style-type: none"><li>• Parallel paper presentations Day 1 - <i>page 40</i></li><li>• Poster presentations - <i>page 94</i></li><li>• Exhibition - <i>page 8</i></li></ul>
Thursday 23 July 2009	<ul style="list-style-type: none"><li>• Parallel paper presentations Day 2 - <i>page 58</i></li><li>• Poster presentations - <i>page 94</i></li><li>• Exhibition - <i>page 8</i></li></ul>
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# Welcome Note

## HCI International 2009



**Gavriel Salvendy**  
Conference Series Founder and  
HCII 2009 Scientific Advisor

Dear Colleague,

It is with great honor and pleasure that we welcome you to HCI International 2009, the 13th International Conference on Human-Computer Interaction, held in San Diego, CA, USA, 19-24 July 2009, in cooperation with the:

- Symposium on Human Interface (Japan) 2009
- 8th International Conference on Engineering Psychology and Cognitive Ergonomics
- 5th International Conference on Universal Access in Human-Computer Interaction
- 3rd International Conference on Virtual and Mixed Reality
- 3rd International Conference on Internationalization, Design and Global Development
- 3rd International Conference on Online Communities and Social Computing
- 5th International Conference on Augmented Cognition
- 2nd International Conference on Digital Human Modeling
- 1st International Conference on Human Centered Design



**Constantine Stephanidis**  
General Chair HCII 2009

HCI International, the worldwide renowned international forum for the dissemination and exchange of up-to-date scientific information on theoretical, generic and applied areas of Human-Computer Interaction, is celebrating this year its 25th (Silver) Anniversary.

HCI International 2009 promises to be an unforgettable cluster of high quality international scientific events, and an ideal occasion to come to contact with the rapidly evolving ICT market in the world. This year, HCI International and the affiliated Conferences explore a wide variety of new hot topics which reflect and contribute to a paradigm shift towards ubiquitous interaction, intelligent environments and interactive technologies supporting virtually any aspect of human life and activities in a global and social perspective.

The 17-volume Conference Proceedings are published by Springer in the Lecture Notes in Computer Science (LNCS) and Lecture Notes in Artificial Intelligence (LNAI) series, and are available on-line through the LNCS Digital Library (<http://www.springer.com/lncs>), readily accessible by all subscribing libraries around the world. The Proceedings are also published by Springer in DVD, which is provided in your registration bag. This DVD also includes, in addition to the papers, the extended abstracts of the posters that will be presented during the conference.

An impressive number of well over 1800 individuals from 73 countries have registered for this truly international in scope event, where the work of the world's foremost leaders in the field is presented. We are privileged that Daniel Rosenberg has joined us as the keynote speaker at the opening plenary session. Furthermore, during this session, for the first time in the history of the HCI International Conference series, thirteen awards will be conferred. Eleven awards will be given to the best papers in each Affiliated Conference / Thematic Area. The winners will receive a plaque and a certificate. Among these eleven best papers, one paper will be selected as Best HCI International 2009 Conference paper, and will receive a golden medal award and a certificate. Finally, the Best Poster will also receive a plaque award and a certificate.

We would like to thank each and every one of you for your valuable contribution towards the success of this Conference, and to wish you a professionally rewarding and socially enjoyable stay in San Diego.

## HCI International 2011

The 14th International Conference on Human-Computer Interaction, HCI International 2011, will be held jointly with the affiliated Conferences in the Hilton Orlando Bonnet Creek Hotel, in Orlando, Florida, USA, 9-14 July 2011.

The programme will feature, among others, pre-conference half-day and full-day tutorials, parallel sessions, poster presentations, an opening session with a keynote address, an exhibition including demonstrations by industrial companies.

The Proceedings will be published by Springer.

For more information, please visit the Conference website: [www.hcii2011.org](http://www.hcii2011.org)

General Chair: **Constantine Stephanidis**  
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# Opening Plenary Session

Tuesday, 21 July 2009 @ 17:30

Room: Atlas Ballroom

## ***“Sustainability: Lean and Green. The next decade of HCI opportunity”***

**Daniel Rosenberg**

Senior Vice President,  
Product User Experience,  
Office of the CTO  
SAP Corporation , USA



### **Abstract**

The majority of the world's gross domestic product (GDP) is managed within today's information technology infrastructure. At the same time, the current global economic crisis illustrates many shortcomings in the design of these same systems and of the business processes they execute. Even before the emergence of this specific crisis, a macro-trend was underway reaching for improved sustainability and green IT within the industrial sector. This trend will only accelerate in the coming decade, as both government and private capital flows into projects and products as needed to renovate many of our core systems such as transportation, communication, manufacturing, IT and agriculture. A convergence is taking place which combines the goals of GDP growth with sustainability, and thus forms a revised set of guiding design principles as well as funding criteria in the effort to restart global economy.

An old Chinese proverb states "In challenge always exists opportunity". The HCI profession is much more mature and capable today than when many of these original systems were developed. Ergonomic approaches for lean manufacturing and User Centered Design within agile software development are part of our shared lexicon and skill base, as papers at this conference demonstrate.

We will all be called upon to participate in the sustainability movement, but how well prepared are we to deliver professionally? How will we apply HCI to new problems such as creating a global standard for tracking and trading carbon credits? Can we suggest which areas are most appropriate for investment and which approaches within them are most promising based on our knowledge of human capabilities?

With a decade of re-engineering ahead of us, this talk will introduce an overall framework for understanding sustainability principles and opportunities, and suggest how HCI methods can increase the probability of success in meeting these next generation challenges.

### **Biographical Sketch**

**Daniel Rosenberg** is a Senior Vice President at SAP, the largest Enterprise Applications Software company in the world. In this capacity he directs user experience design and usability activities across all SAP product lines. His team is also responsible for UCD methodology definition, corporate UI standards and Accessibility. Prior to joining SAP, he was Vice President of R&D for UI Design at Oracle Corporation. Previous corporate positions include the role of User Interface Architect for Borland International and Ashton-Tate. While at Borland, he designed the first Windows GUI for Borland C++, as well as many other early innovative product user interfaces for personal computers.

He has authored or co-authored many well known publications in the HCI field, including "Human Factors in Product Design" (Elsevier 1991), as well as chapters in the original "Handbook of Human Computer Interaction" (Elsevier 1988), "Coordinating User Interfaces for Consistency" (Academic Press 1989) and "Usability in Practice" (Academic Press 1994). He is also one of the founding editors of ACM's NetWorker magazine, a publication that focuses on how the Internet has changed the nature of work.

# International Program Boards

## Ergonomics and Health Aspects of Work with Computers

Program Chair:  
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USA

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Kari Lindström, Finland  
Holger Luczak, Germany  
Aura C. Matias, Philippines  
Kyung (Ken) Park, Korea  
Michelle M. Robertson, United States  
Michelle L. Rogers, United States  
Steven L. Sauter, United States  
Dominique L. Scapin, France  
Naomi Swanson, United States  
Peter Vink, Netherlands  
John Wilson, United Kingdom  
Teresa Zayas-Cabán, United States

## Human Interface and the Management of Information

Program Chair:  
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Alan Chan, Hong Kong  
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Jhilmil Jain, United States  
Yasufumi Kume, Japan  
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Dieter Spath, Germany  
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Hidekazu Yoshikawa, Japan  
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Bernhard Zimolong, Germany

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Yong Gu Ji, Korea  
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Chen Ling, United States  
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Chang S. Nam, United States  
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Jan M. Noyes, United Kingdom  
Kjell Ohlsson, Sweden  
Axel Schulte, Germany  
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Neville A. Stanton, United Kingdom  
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Mark Young, United Kingdom

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Harald Weber, Germany  
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Panayiotis Zaphiris, Cyprus

## Virtual and Mixed Reality

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Mitsuhiko Karashima, *Japan*  
Tadashi Kobayashi, *Japan*  
Kun-Pyo Lee, *Korea*  
Loïc Martínez-Normand, *Spain*  
Dominique L. Scapin, *France*  
Haruhiko Urokohara, *Japan*  
Gerrit C. van der Veer, *Netherlands*  
Kazuhiko Yamazaki, *Japan*

## Internationalization, Design and Global Development

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Ram Bishu, *United States*  
Alan Chan, *Hong Kong*  
Andy M. Dearden, *United Kingdom*  
Susan M. Dray, *United States*  
Vanessa Evers, *Netherlands*  
Paul Fu, *United States*  
Emilie Gould, *United States*  
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Veikko Ikonen, *Finland*  
Esin Kiris, *United States*  
Masaaki Kurosu, *Japan*  
Apala Lahiri Chavan, *United States*  
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Ann Light, *United Kingdom*  
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Rungtai Lin, *Taiwan*  
Zhengjie Liu, *P.R. China*  
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Oguzhan Ozcan, *Turkey*  
Girish Prabhu, *India*  
Kerstin Röse, *Germany*  
Eunice Ratna Sari, *Indonesia*  
Supriya Singh, *Australia*  
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Adi Tedjasaputra, *Singapore*  
Kentaro Toyama, *India*  
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Chen Zhao, *P.R. China*  
Wei Zhou, *P.R. China*

## Online Communities and Social Computing

Program Chair:  
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Elaine M Raybourn, *United States*  
Douglas Schuler, *United States*  
Gilson Schwartz, *Brazil*  
Sergei Stafeev, *Russia*  
Charalambos Vrasidas, *Cyprus*  
Cheng-Yen Wang, *Taiwan*

## Augmented Cognition

Program Chair:  
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Dennis Proffitt, *United States*  
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Mike Russo, *United States*  
Kay Stanney, *United States*  
Roy Stripling, *United States*  
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Glenn Wilson, *United States*

## Digital Human Modeling

Program Chair:  
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Norm Badler, *United States*  
Kathryn Cormican, *Ireland*  
Afzal Godil, *United States*  
Ravindra Goonetilleke, *Hong Kong*  
Anand Gramopadhye, *United States*  
Sung H. Han, *Korea*  
Lars Hanson, *Sweden*  
Pheng Ann Heng, *Hong Kong*  
Tianzi Jiang, *P.R. China*  
Kang Li, *United States*  
Zhizhong Li, *P.R. China*  
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Woojin Park, *United States*  
Matthew Parkinson, *United States*  
Jim Potvin, *Canada*  
Rajesh Subramanian, *United States*  
Xuguang Wang, *France*  
John F Wiechel, *United States*  
Jingzhou (James) Yang, *United States*  
Xiu-Gan Yuan, *P.R. China*

# Conference Exhibition

The Exhibition of HCI International 2009 is hosted in the Grand Exhibit Hall of the Town and Country Resort & Convention Center.

Entrance to the Exhibition is free of charge for all Conference participants.

## Opening Hours

Wednesday, 22 July  
Thursday, 23 July  
Friday, 24 July

09:00 - 18:30

List of Exhibitors

Advanced Brain Monitoring, Inc.

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[www.b-alert.com](http://www.b-alert.com)

Tsinghua University

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[www.ahfe2010.org](http://www.ahfe2010.org)

Berlin University of Technology, DAI Lab.

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[www.dai-labor.de](http://www.dai-labor.de)

BIOPAC Systems, Inc.

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[www.biopac.com](http://www.biopac.com)

Brain Products GmbH

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[www.brainproducts.com](http://www.brainproducts.com)

Circle Twelve Inc, DiamondTouch

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[www.circletwelve.com](http://www.circletwelve.com)

Cortech Solutions, Inc.

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[www.cortechsolutions.com](http://www.cortechsolutions.com)

EkaTetra

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[www.ekatetra.com](http://www.ekatetra.com)

Electrical Geodesics, Inc. - Smart Eye AB

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[www.egi.com](http://www.egi.com)

Ergoneers GmbH

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[www.ergoneers.com/index\\_e.html](http://www.ergoneers.com/index_e.html)

EyeTech Digital Systems, Inc.

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[www.eyetechds.com](http://www.eyetechds.com)

FORTH-ICS

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[www.ics.forth.gr](http://www.ics.forth.gr)

g.tec medical engineering GmbH

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[www.gtec.at](http://www.gtec.at)

HCI International 2011

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[www.hcii2011.org](http://www.hcii2011.org)

Infragistics

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[www.infragistics.com](http://www.infragistics.com)

ISAR User Interface Design

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[www.isaruid.com](http://www.isaruid.com)

Mind Design Systems

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[www.mindd.com](http://www.mindd.com)

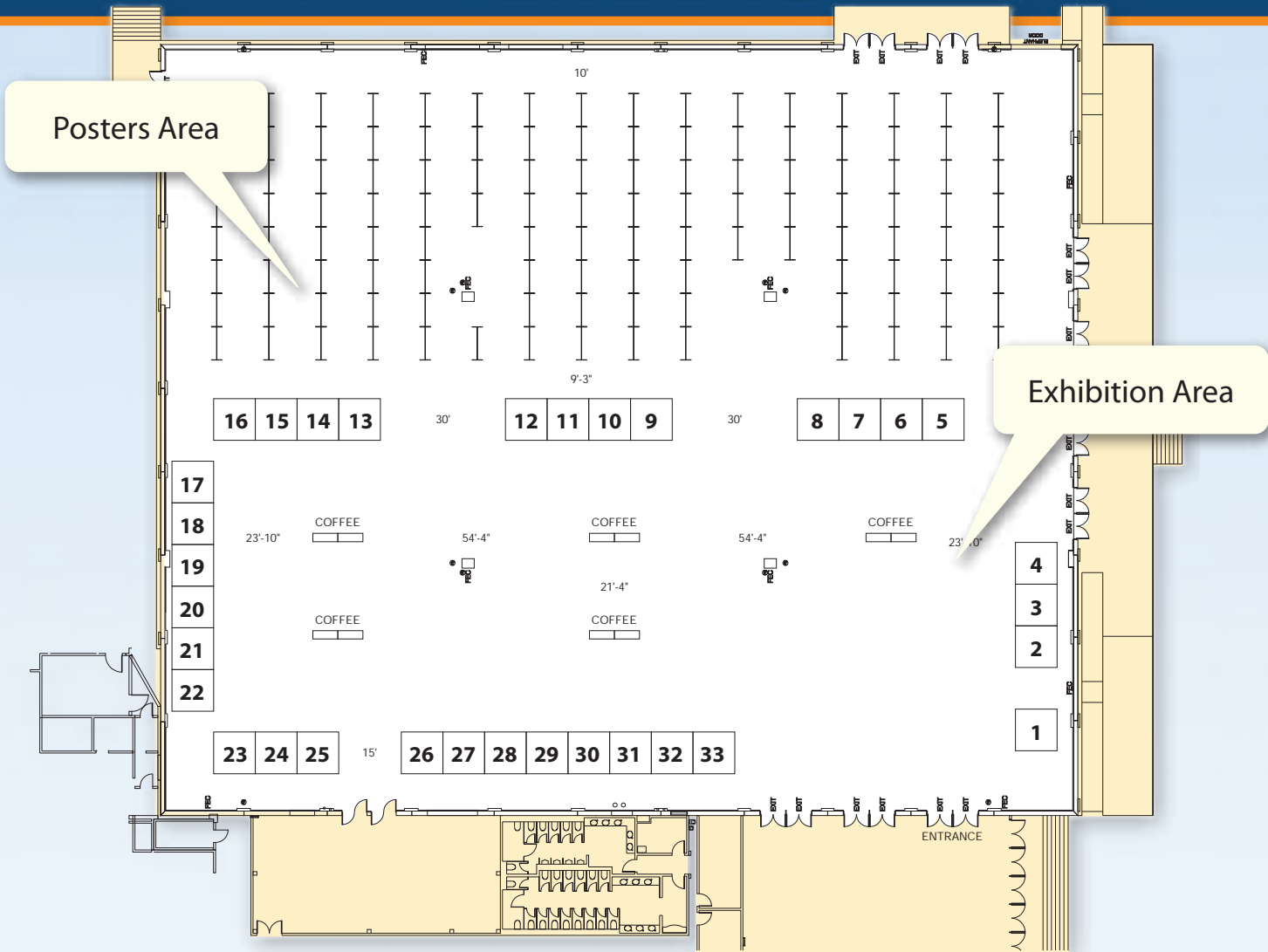
National University of Singapore





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[www.nus.edu.sg](http://www.nus.edu.sg)

# TOWN & COUNTRY - GRAND EXHIBIT HALL



<p>Noldus</p> <p>2</p>  <p>www.noldus.com</p>	<p>Seeing Machines</p> <p>25</p>  <p>www.seeingmachines.com</p>	<p>SensoMotoric Instruments</p> <p>21</p>  <p>www.smivision.com</p>
<p>Springer</p> <p>3 &amp; 4</p>  <p>www.springer.com</p>	<p>Taylor and Francis Group</p> <p>7 &amp; 8</p>  <p>www.taylorandfrancis.com</p>	<p>The UXalliance</p> <p>1</p>  <p>www.uxalliance.com</p>
<p>Tobii Technology, Inc.</p> <p>17</p>  <p>www.tobii.com/corporate/start.aspx</p>	<p>Tucker-Davis Technologies</p> <p>20</p>  <p>www.tdt.com</p>	

List of Exhibitors

# Tutorials Synopsis

## Sunday, 19 July 2009

	Tutorial	Room	Duration	Time
T01	Gazing Deeper into Usable Design - Eye-tracking for the User Researcher Andrew Schall	Windsor	Half Day	09:00 - 12:30
T02	Brain-Computer Interface Christoph Guger, Guenter Edlinger	Hampton	Half Day	09:00 - 12:30
T03	Game Usability: Methods and Practice Chee Siang Ang, Mike Lewis	Sheffield	Half Day	09:00 - 12:30
T04	Designing for Touchscreens and Interactive Gestures Dan Saffer	Windsor	Half Day	14:00 - 17:30
T05	Natural Language Communication and Affordable Interfaces Kristiina Jokinen	Hampton	Half Day	14:00 - 17:30
T06	Practical Statistical Methods for Usability Testing James R. Lewis, Jeff Sauro	Sheffield	Half Day	14:00 - 17:30

## Monday, 20 July 2009

	Tutorial	Room	Duration	Time
T07	Cross-Cultural User Interface Design Aaron Marcus	Windsor	Full Day	09:00 - 17:30
T08	Cost-effective User-Centered Design based on ISO 13407 Nigel Bevan	Hampton	Full Day	09:00 - 17:30
T09	Practical Speech User Interface Design for Interactive Voice Response Applications James R. Lewis	Sheffield	Half Day	09:00 - 12:30
T10	Augmented Cognition Mitigation Strategies Kelly S. Hale	Garden Sallon One	Half Day	09:00 - 12:30
T11	HCI Research and Usability Testing with The Observer XT Tobias Heffelaar, Peter Chen, Lucas Noldus	Garden Sallon Two	Half Day	09:00 - 12:30
T12	An Overview of Human Information Processing for HCI Robert Proctor, Kim Vu	Sheffield	Half Day	14:00 - 17:30
T13	A Semantic Approach to Design Heuristics Ray Adams	Garden Sallon One	Half Day	14:00 - 17:30
T14	WCAG 2.0 and Section 508: Best Practices and Web Standards for Accessibility Jon Gunderson	Crescent	Half Day	14:00 - 17:30
T15	Interaction Design of Highly Automated Domain-Specific Systems Guy A. Boy, Jeffrey M. Bradshaw	Garden Sallon Two	Half Day	14:00 - 17:30

## Tuesday, 21 July 2009

	Tutorial	Room	Duration	Time
T16	Mobile User-Interface Design Aaron Marcus	Windsor	Full Day	08:30 - 17:00
T17	Assessing Usability Capability using ISO Standards Nigel Bevan	Hampton	Full Day	08:30 - 17:00
T18	Introduction to Social Network Analysis Panayiotis Zaphiris, Chee Siang Ang	Crescent	Full Day	08:30 - 17:00
T19	Cognitive Crash Dummies: Prototyping with a Difference Bonnie E. John	Sheffield	Half Day	08:30 - 12:00
T20	Basic Concepts of Systemic-Structural Activity Theory and its Application in HCI Waldemar Karwowski, Gregory Bedny	Garden Sallon One	Half Day	08:30 - 12:00
T21	Designing for Universal Access Simeon Keates	Sheffield	Full Day	13:30 - 17:00
T22	Clinical Virtual Reality Albert "Skip" Rizzo	Garden Sallon Two	Half Day	13:30 - 17:00
T23	Ambient Intelligence: Designing Interaction for Smart Artefacts Norbert Streitz	Garden Sallon One	Half Day	13:30 - 17:00

Sunday, 19 July 2009 @ 09:00 - 12:30

Room: Windsor

## Mr. Andrew Schall

Human Factors International, USA

### Objectives:

Tutorial attendees will learn:

- The fundamentals of eye-tracking methodology in the field of user experience.
- How to design a user experience test to take advantage of eye-tracking technology.
- What to consider when recruiting participants for an eye-tracking study.
- How to effectively conduct and moderate an eye-tracking session.
- How to analyze eye-tracking data to reveal usability and design issues.

### Content and Benefits:

Eye-tracking technology has reached a point where it can be implemented accurately, non-invasively, and at a relatively low cost. These three criteria are critical for its potential widespread use in user experience and interaction design. Eye-tracking can validate traditional methods such as the think-aloud protocol by comparing what the user said they saw with actual quantitative data that shows exactly where they looked. Eye-tracking results can quickly assess how a user processed an interface's visual hierarchy versus what a user said they noticed first. The results from eye-tracking can also be used to gauge a user's level of difficulty using an interface by measuring how long they looked at a particular object, and how often they reviewed sections of the interface.

However, eye-tracking cannot be layered onto existing methods without considering the implications on data analysis and interpretation. Eye-tracking needs to be carefully considered during the planning of a user research study. The results of eye-tracking can be overwhelming if the study objective are not carefully selected and if plans have not been made to appropriately recruit participants.

This Tutorial will give attendees a solid understanding of the fundamentals of eye-tracking and how it can be applied in user research projects.

Hands-on use of the eye-tracker will be employed throughout the Tutorial. Attendees will also have the chance to analyze eye-tracking data in small groups using eye-tracking software that will be installed on several laptop computers. Attendees will participate in hands-on exercises to obtain first-hand experience using an eye-tracker and to see how it can be used during a user experience test.

### Tutorial Schedule:

- Introductions and Tutorial overview.
- An introduction to eye-tracking in the field of usability & user experience design.
- Demonstration: Live tracking and visualizations.

- Designing an eye-tracking study.
- Lab setup, data collection and team roles.
- Conducting an eye-tracking session.
- Group activity: Mock usability test with eye-tracking.
- Analyzing eye-tracking data to reveal usability issues.
- Group activity: Analysis of mock usability test results.
- Wrap-up & audience Q&A.

### Target audience:

Participants should be familiar with traditional usability testing methodology. The presenter will assume that all participants will have had some experience conducting usability tests.

Participants do not need to have any experience with eye-tracking. The instructor will assume that participants do not have any background in eye-tracking and will cover the basics through intermediate level content.

## Biographical Sketch

**Mr. Andrew Schall** has been in the usability consulting world for over 5 years with a continuing passion for improving the user experience through the use of user-centered design. He has several years of experience working with advanced eye-tracking technology and has developed several methodologies to both evaluate existing designs and validate new designs for the web.

He has worked with numerous public and private companies to use eye-tracking as part of their user-centered design projects. His master's project involved working with the Library of Congress to evaluate the usability of the Legislative Information System (LIS) through the use of eye-tracking. He has also collaborated with NASA to evaluate an educational interactive DVD for elementary school children using eye-tracking and performed an eye-tracking study to analyze the usability of online forms.

He has shared his eye-tracking knowledge with others in the field at a variety of local and national events.

At the recent 2008 UPA Conference, he gave a 90 minute presentation entitled "Designing a successful eye-tracking usability study step-by-step." An overview of how to plan for, design and implement a successful eye-tracking usability study was presented.

He also presented his experiences with eye-tracking at the User Focus conference hosted by the DC UPA chapter entitled "Exploring the Uses of Eye-Tracking to Evaluate Usability and Guide Design Decisions" where he showed examples of how the results from eye-tracking can be used as a helpful tool for the entire user experience team.

**DI Dr. techn. Christoph Guger**  
**DI Dr. techn. Gunter Edlinger**  
g.tec medical engineering GmbH, Austria

**Objectives:**

The Brain-Computer Interface (BCI) research area is a fast expanding field. BCIs have been developed during the last years for people with severe disabilities to improve their quality of life. Applications of BCI systems comprise the restoration of movements, communication and environmental control. However, recently BCI applications have been also used in different research areas, e.g., in the field of virtual reality.

The Tutorial will show all necessary components to run successfully BCI experiments.

Live demonstrations of BCI control will allow to understand the progress of the technology.

**Content and Benefits:**

The Tutorial is divided into two parts, each of which is structured in small groups to maximize interaction among participants:

- insights into the hardware for BCI research.
- insights into the software for BCI research.
- enabling participants to run their own experiments.
- giving participants the chance to analyze their BCI performance.
- showing how to control a smart home environment.
- showing avatar control with the BCI.
- showing robot control with the BCI.

**Target audience:**

- Neuroscientists.
- Biomedical engineers.
- Rehabilitation engineers.
- Physiologists.
- Informatics engineers.

**Biographical Sketch**

**Dr. Christoph Guger** studied biomedical engineering at University of Technology Graz and Johns Hopkins University and built one of the first real-time brain-computer interfaces in the context of his PhD. In 1999, he cofounded g.tec Guger Technologies and in 2004 g.tec medical engineering GmbH to sell biosignal processing system. The company is currently active in more than 55 countries. His research interests are brain computer interfaces, place cells and high altitude medicine.

**Dr. Gunter Edlinger** studied electrical engineering at University of Technology Graz, his PhD about the high resolution EEG. He cofounded g.tec Guger Technologies and g.tec medical engineering GmbH in 1999. His research interests are real-time biosignal processing systems and source localization.

Sunday, 19 July 2009 @ 09:00 - 12:30

Room: Sheffield

**Dr. Chee Siang Ang**City University London, *United Kingdom***Mr. Mike Lewis**Serco Game Usability, *United Kingdom***Objectives:**

For decades, usability has been an integral part of the design and development process in the domain of work-oriented interactive systems. Usability in computer games, however, was almost unheard of until recently, partly due to the emergence of games as mainstream media. This Tutorial provides an overview of game usability, outlining the organizational and methodological challenge of conducting usability in the game context. It then offers practical solutions to running successful usability studies to improve players' experience. Upon completion of this Tutorial, participants should:

- be aware of the organizational challenge of conducting usability studies in the game industry;
- be familiar with various methods for evaluating game usability;
- be able to conduct usability studies for their own game projects;
- be able to derive actionable design recommendations from usability findings.

**Content and Benefits:**

This Tutorial is divided into two parts. The first part will be based on short lectures and discussion, while the second part will consist of hand-on sessions, structured around small groups to maximize active participation and interaction among participants.

The content of the first part includes:

- brief introduction to usability;
- organizational challenges of user research in the game industry;
- introduction to game usability methods, including UI testing, playtest, playability expert evaluation, etc;
- case studies of user research in highly successful games.

The second part will tackle practical use of game usability methods to evaluate computer games. Through a series of exercises, participants will be involved actively in evaluating several games from various genres (e.g., role playing games, action games, puzzle games, etc). Findings from the practical game usability exercises will be presented and discussed critically to point out advantages and disadvantages of each method. These exercises not only provide a practical hand-on experience to the participants, but also encourage them to think and relate their newly learned usability skills to their own game projects.

The content of the second part includes:

- practical considerations for running game usability sessions;
- conducting game usability studies and data analysis;
- presenting and reporting usability findings, design recommendations and action plans;
- choosing the right methods for the game usability project.

**Target audience:**

The Tutorial is addressed to practitioners (usability consultants, game developers and publishers, designers, etc) and academics interested in usability evaluation for different platforms of games, including, PC, console games, mobile games, augmented reality games, etc; as well as various game genres: actions, role playing, MMO, simulation, etc. As the Tutorial is introductory, no background knowledge on usability studies is required.

**Biographical Sketch**

**Dr. Chee Siang Ang** is a Research Fellow at the Centre for Human-Computer Interaction Design, City University London. His research interests include the psychology and sociology of computer games and new forms of social gaming such as MMO. He has a PhD in HCI from City University London in which he studied, refined and developed novel methods for usability (e.g., eye tracking and other biometric techniques) and sociability evaluation (e.g., social network analysis and social simulation) of computer games. He has published more than 30 papers in games and HCI issues.

**Mr. Mike Lewis** is a Consultant for Serco Games Research. He has been involved with projects in such sectors as information publishing, mobile telecoms, gaming and consumer products. He has a keen interest in bringing user centred design techniques to all areas of technology design, with a focus on mobile and gaming platforms. Prior to joining Serco, Mike worked at Motorola UK Research labs as a human factors researcher in the wireless applications group. During his time at Motorola he worked on future mobile multimedia communications, addressing the medium to long-term requirements of mobile communication devices. Mike also worked on the development of a portable, low bandwidth video system for the emergency services. Mike holds a MSc in Human-Computer Interaction and Ergonomics from University College London and a BSc in Applied Psychology and Computing from Bournemouth University. He is also a member of the Usability Professionals Association.

**Mr. Dan Saffer**

Kicker Studio, USA

**Objectives:**

This Tutorial will provide an introduction to designing for the new world of touchscreens and interactive gestures. While they may seem like a novelty now, in the next year, hundreds of millions of touchscreen and gestural devices will come onto the market, including laptops, mobile devices, appliances, and environments. Like it or not, are going to have to learn how to design for them. This introductory Tutorial walks through the basics of designing for touchscreens and interactive gestures. Through activities and mini-lectures on relevant topics, the participants will be guided in understanding the benefits and limitations of this new medium.

**Content and Benefits:**

In this Tutorial attendees will:

- Learn the key differences in designing for touch/gesture.
- Learn how to design touch targets.
- Explore the basics of ergonomics and kinesiology.
- Create a paper prototype of a touchscreen/gestural interface.
- Communicate presence and instruction.
- Learn strategies for documenting a touch application.

**Target audience:**

This Tutorial is for designers and everyone interested in expanding their knowledge of interaction design into the new territory of interactive gestures.

**Biographical Sketch**

**Dr. Dan Saffer**, principal designer at Kicker Studio, has designed since 1995 interactive products that are currently used by millions every day. An international speaker and author, his acclaimed book "Designing for Interaction" (New Riders) has been described as "a bookshelf must-have for anyone thinking of creating new designs" and has been translated into several languages. His new book, "Designing Gestural Interfaces" (O'Reilly), was published in December 2008.

Sunday, 19 July 2009 @ 14:00 - 17:30

Room: Hampton

**Prof. Kristiina Jokinen**

University of Helsinki, Finland

**Objectives:**

So far much of the interactive system design, development, and evaluation has focused on efficient and smooth task completion. However, it is also clear that this is not enough in the context of ubiquitous applications: a deeper understanding of how human communication takes place is needed. The challenge that interaction technology faces in the current information society is not so much in producing systems that enable interaction in the first place, but to design and build systems that support human-technology interaction in a natural and intuitive way. As the environment is being populated with smart objects and services, interface design needs to address issues that concern natural, intuitive, easy, and friendly interaction. It is expected that natural and intuitive communication strategies will improve the rigid interactions that present-day systems exhibit, and thus it is important to encourage interdisciplinary research where natural language strategies and communication possibilities are applied to the design and construction of interactive systems.

The Tutorial will deal with the use of language in interaction design and system development. It will present the current state of the art in natural language interaction technology, as well as problems and challenges in the context of ubiquitous computing and embodied interactive agents. The focus is on the notion of affordable interfaces, as seen from the point of view of natural interaction.

The goals of the Tutorial are:

- To give a short and concise introduction to natural language interaction.
- To highlight the concept of affordance in natural interaction.
- To become familiar with the practical analysis of conversations and natural interaction.

**Content and Benefits:**

The first part of the Tutorial will motivate and provide background information by surveying issues related to the design and development of interactive applications, introducing basic concepts and techniques, and reviewing the state-of-the-art interaction technology.

The tutorial will continue with the challenges concerning the notion of natural language interaction, and study various prerequisites and enablements of communication. The main challenge in natural language interaction design is pinpointed to the mechanisms that concern the grounding of language: construction of the shared knowledge through verbal and non-verbal interaction, and updating one's knowledge and intentions concerning the interaction accordingly. The discussion is then extended towards non-verbal aspects of communication and in particular how are these signals related to verbal communication

and how they regulate the flow of information.

Finally, the Tutorial will conclude with a discussion concerning the notion of affordance, and how it may be interpreted in the context of natural interaction. This will also link naturalness to intercultural communication and universal access.

There will also be time for questions and discussion.

**Target audience:**

The Tutorial is meant for researchers, designers and technology experts who are interested in developing human-technology, more natural interactions. The Tutorial will give an overview of the concepts and techniques, and discuss more specific topics on natural language interaction, multimodality and corpus analysis. The Tutorial assumes that the audience is familiar with the basic research issues in interaction technology, but does not require any particular familiarity with human communication or speech and language technology.

**Biographical Sketch**

**Prof. Kristiina Jokinen** is Adjunct Professor of Language Technology at the University of Helsinki, Finland, and Visiting Professor of Intelligent User Interfaces at the University of Tartu, Estonia. She received her PhD at UMIST, Manchester, UK, and worked four years in Japan as JSPS Research Fellow at the Nara Institute of Science and Technology, and as Invited Researcher at ATR (Advanced Telecommunications Research Laboratories) in Kyoto. Her research concerns human-computer interaction, spoken dialogue systems, and cooperative response planning, and her current interests include adaptation in speech interfaces, multimodal communication, and conversational systems. She has played a leading role in several academic and industrial research projects (Interact, DUMAS, PUMS), and is currently finishing the book "Constructive Dialogue Management - Speech Interaction and Rational Agents" (John Wiley & Sons). She is the secretary of SIGDial, the ACL/ISCA Special Interest Group for Discourse and Dialogue.

**Dr. James R. Lewis**

IBM Software Group, USA

**Mr. Jeff Sauro**

Oracle, USA

**Objectives:**

The objective of this Tutorial is to cover basic statistical methods (some classical, others new) that are of value to usability practitioners because they provide a principled approach to answering three fundamental questions associated with usability testing: (1) was the goal of testing met? (2) is there statistical significance?, and (3) how many participants are needed?

**Content and Benefits:**

The Tutorial will cover the following three primary topics (with quantitative exercises using real usability data, both continuous and discrete):

- Was the goal of testing met?
  - » Using t-test and confidence intervals based on t for continuous usability data (e.g., time on task).
  - » Using binomial tests and binomial confidence intervals for discrete usability data (e.g., task completion rate).
- Is there statistical significance?
  - » Between- and within-subjects t-tests (continuous data).
  - » Chi-square and Fisher tests (discrete data).
- How many participants are needed?
  - » Sample size estimation using the t-distribution (continuous data).
  - » Sample size estimation using the binomial distribution (discrete data, specifically, discovery of usability problems).

The Tutorial will start with an introduction and end with conclusions, including pointers to more information on the topic.

Attendees will benefit by learning these basic statistical methods and practicing their application to real usability data, gaining the skill to apply the methods to their own data.

**Target audience:**

Members of the target audience are usability practitioners who work with both continuous (e.g., time-on-task) and discrete (e.g., completion rate, problem discovery) data, and who want a refresher of some basic statistics and information on new approaches that are especially suited for practical usability work.

**Biographical Sketch**

**Dr. James R. (Jim) Lewis** has been a human factors engineer and usability practitioner at IBM since 1981. He has published influential research on the measurement of usability satisfaction, use of confidence intervals, and sample size estimation for usability studies. He is on the editorial board of the International Journal of Human-Computer Interaction and the Journal of Usability Studies, and wrote the chapter on usability testing for the 3rd edition of the "Handbook of Human Factors and Ergonomics" (2006). From 2004-2005 he chaired the Formative Usability Testing Metrics Workgroup for the National Institute of Standards and Technology (NIST). He is a BCPE Certified Human Factors Professional, an IBM Master Inventor, and a member of UPA, HFES, APA, and APS.

**Mr. Jeff Sauro** works as a human factors engineer for Oracle, is a Six Sigma Black Belt, and is the webmaster of [www.measuringusability.com](http://www.measuringusability.com). He has published and presented on the topic of quantitative methods and statistical analysis of usability data at conferences such as UPA, CHI, and HFES. He was recently the guest editor for a special issue of Interactions Magazine dedicated to Quantifying Usability.

Monday, 20 July 2009 @ 09:00 - 17:30

Room: Windsor

**Mr. Aaron Marcus**

Aaron Marcus and Associates, Inc. (AM+A), USA

**Objectives:**

Participants will learn new terms and concepts to understand culture, Geert Hofstede's dimensions of culture (power distance, individualism/collectivism, masculinity/femininity, uncertainty avoidance, and long-term orientation), and how these example dimensions relate to the design of user-interface components (metaphors, mental models, navigation, interaction, and appearance). The Tutorial will introduce additional dimensions that must be considered in relation to culture (e.g., persuasion, trust, intelligence, cognition). It will also examine the practice and trade-offs of several multi-national companies' Web efforts, as well as a best-of-breed set of culture dimensions derived from expert opinions. The issues will be also addressed of how mobile devices exhibit culture differences in the user interfaces of products and services from Asia and the USA. Finally, already emerging examples of culture differences, and similarities, of Web 2.0-oriented Websites will be examined.

**Content and Benefits:**

This tutorial is intended to provide:

- An understanding of culture models and how to use them for evaluation of designs.
- Hands-on experience of using culture models to analyze and design user interfaces.
- Bibliography and information resources to assist analysts and designers.

The Tutorial is organized as follows:

**Lecture 0:** Introduction to instructor(s) and Tutorial (15-45 minutes)

**Exercise 1:** Understanding cultural messages form textual dialogues (30 minutes)

**Lecture 1:** Introduction to cultural models, examples from the Web, and applying models: (60 minutes)

**Exercise 2:** Analyzing Culture Dimensions and UI Design (45 minutes)

**Lecture 2:** Culture and Corporate Website Design (30 minutes)

**Lecture 3:** Developing Best-of-Breed Culture Dimensions (30 minutes)

**Lecture 4:** Case Study: Culture influence in the Design of PDA for China (30 minutes)

**Lecture 5:** Survey of Culture Differences in Mobile Device Products/Services in Asia vs. the USA (15 minutes)

**Lecture 6:** Web 2.0 and Culture Differences (15 minutes)

**Exercise 3:** Designing a Website per Culture (45 minutes)

**Optional Parallel Exercise 3:** Designing a Mobile Navigation Device (45 minutes).

**Target audience:**

Researchers and developers of, for example, Web-based documents and applications, telecommunications-oriented consumer products, and office/mobile productivity tools.

Level: introductory. Participants may be advanced user-interface designers, but the Tutorial topic may be new to them. Beginning user-interface designers will also benefit and be able to follow.

**Biographical Sketch**

**Mr. Aaron Marcus** is the founder and President of Aaron Marcus and Associates, Inc. (AM+A). He graduated in physics from Princeton University and in graphic design from Yale University. Mr. Marcus focuses his attention on the Web and wireless communication, mobile devices, helping the industry to learn about good user-interface and information-visualization design, providing guidelines for globalization/localization, the challenges of "baby faces" (small displays for consumer information appliances) of ubiquitous devices, and cross-cultural communication.

Mr. Marcus has written over 250 articles; written/co-written five books, including (with Ron Baecker) "Human Factors and Typography for More Readable Programs" (1990), "Graphic Design for Electronic Documents and User Interfaces" (1992), and "The Cross-GUI Handbook for Multiplatform User Interface Design" (1994) all published by Addison-Wesley; and contributed chapters/case studies to five handbooks of user-interface design, information appliances, and culture. Mr. Marcus has published, lectured, tutored, and consulted internationally for more than 40 years and has been an invited keynote/plenary speaker at conferences internationally.

In 1992, he received the National Computer Graphics Association's annual award for contributions to industry. He was the keynote speaker for ACM/SIGGRAPH 1980, the organizer and chair of the opening plenary panel for ACM/SIGCHI 1999, and the closing keynote plenary speaker for UPA 2005, the Usability Professional's Association's annual conference. In 2007, he was named an AIGA Fellow by the AIGA Cross-Cultural Design Center. He is the Editor-in-Chief of User Experience (UX), Editor of Information Design Journal, and is an Advisor to Interactions. He is also on the Editorial Boards of Visible Language, Universal Access in the Information Society, and the International Journal of Human-Computer Interaction.

**Dr. Nigel Bevan**Professional Usability Services, *United Kingdom***Target audience:**

Beginners.

**Objectives:**

Participants will learn a structured approach to user-centered design based on the principles of the International Standard "Human centred design processes for interactive systems" (ISO 13407) and other associated standards. They will gain practical experience of the key methods needed to support user centred design. By the end of the day, they will have sufficient knowledge to know how to choose a limited number of appropriate methods when resources are limited.

**Content and Benefits:**

The Tutorial will explain the basis for choosing appropriate usability methods and techniques, and give an overview of selected methods. The principles will be illustrated with experience from a case study and short group exercises to familiarize participants with the key methods.

The addressed methods have been validated by practical application in industry.

The following topics will be covered:

- An introduction to user-centered design. The revised version of the ISO 13407 process model in ISO 9241-210 will be presented, including its relationship to existing software development methodologies.
- A core set of techniques to support the human-centered design process advocated by ISO 13407. The techniques have been selected based on their applicability, maturity, availability, and cost-effectiveness, and have been used in a wide range of organizations. The techniques are broadly divided into three categories: planning, early lifecycle, and late lifecycle, and include: a stakeholder meeting, identifying the context of use, producing scenarios of use, evaluating an existing system, specifying usability requirements, prototyping, using style guides, usability testing and collecting feedback.
- Methods for assuring usability. A comparison will be made of the relative merits of providing confidence in the usability of a product by using different forms of usability evaluation or by demonstrating conformance to ISO 13407.

For each potential method, the Tutorial provides information that includes when the method should be used, the type of results provided, the number of usability experts and users required, and the typical range of person days involved. Selection of methods should take account of these factors in meeting the business priorities for usability.

The Tutorial notes will be supplemented by reference material and cross-references to a web site of resources. The Tutorial has received high ratings at previous conferences.

**Biographical Sketch**

**Dr. Nigel Bevan** is an independent consultant and researcher with wide industrial experience. He has managed a series of European projects that have incorporated user centred design into the development processes of several large organisations. He is responsible for the UsabilityNet project that established a web site of usability resources, and the UPA Usability Body of Knowledge. Nigel has contributed to many international standards including ISO 13407, and is editor of the new version of the ISO standard for usability methods supporting human-centered design. He was a member of the US National Academy of Science Committee that produced the report on Human-System Design Support for Changing Technology. Nigel has authored a chapter on cost benefits in "Cost-Justifying Usability: An Update for the Internet Age".

Monday, 20 July 2009 @ 09:00 - 12:30

Room: Sheffield

## Dr. James R. Lewis

IBM Software Group, USA

### Objectives:

To provide an introduction to leading practices in the design of speech user interfaces for interactive voice response (IVR) applications.

### Content and Benefits:

- Introduction
- The Importance of Speech User Interface (SUI) Design
- Design Methodology
  - » Design phase
  - » Prototype phase
  - » Test phase
  - » Refinement phase
- Getting Started - High Level Decisions
  - » Selecting an appropriate user interface
  - » Deciding on the type and level of information
  - » Choosing the barge-in style
  - » Selecting recorded prompts or synthesized speech
  - » Deciding whether to use audio formatting
  - » Using simple or natural command grammars
  - » Adopting a concise or verbose prompt style
  - » Allowing only speech input or speech plus DTMF
  - » Adopting a consistent set of global navigation commands
  - » Deciding whether to use human agents in the deployed system
  - » Choosing a help mode or self-revealing contextual help
- Getting Specific - Low-Level Design Decisions
  - » Preferring active voice
  - » Using consistent timing
  - » Designing dialogs
  - » Creating introductions
  - » Practices to avoid in introductions
  - » EXERCISE 1: Design an introduction
  - » Constructing appropriate menus and prompts
  - » EXERCISE 2: Redesign a menu
  - » Designing and using grammars
  - » Recovering from errors
  - » Confirming user input
  - » EXERCISE 3: Rewrite prompts
- EXERCISE 4: Group design and Wizard of Oz test of a small speech recognition IVR application
- Final Word

The benefit to attendees is that they will attain a basic foundation in current practices in speech user interface design, some of which are not intuitive.

### Target audience:

Practitioners with an interest in speech user interface design but limited practical experience.

## Biographical Sketch

**Dr. James R. (Jim) Lewis**, Ph.D., CHFP, graduated with an M.A. in Engineering Psychology in 1982 from New Mexico State University, and received his Ph.D. in Experimental Psychology (Psycholinguistics) from Florida Atlantic University in 1996. He has worked as a human factors engineer at IBM since 1981, and has been involved since 1996 in the development of products that use speech technologies. His areas of specialization are input devices, speech input/output, and usability evaluation. He is the author of IBM's published guidelines for speech user interface design (published in the IBM VoiceXML Programmer's Guide), and has been the lead speech user interface designer for over 20 customer applications (including telco, consumer electronics, telematics, bank, travel reservation, auto reservation, 401K, state benefits). He is an IBM Master Inventor with 64 US patents issued to date (133 issued worldwide, many in the area of speech user interfaces). He is on the editorial boards of The Journal of Human-Computer Interaction and the Journal of Usability Studies, and wrote the chapter on usability testing for the 3rd edition of the "Handbook of Human Factors and Ergonomics". He is a member of HFES, UPA, APA, and APS, and is on the CREATE scientific advisory board. He has previously chaired sessions on speech user interface design for Human-Computer Interaction International and Human Factors and Ergonomics Society conferences, and has (to date) published 16 research papers on speech user interface design issues.

**Dr. Kelly S. Hale**

Design Interactive, Inc., USA

**Objectives:**

The objective of this Tutorial is to provide attendees with knowledge of, and practice in, mitigation strategies and framework design for augmented cognition systems.

**Content and Benefits:**

This interactive Tutorial will present real-time mitigation strategies and an associated framework for optimizing performance, situation awareness, and workload within complex, information-rich display environments. To date, several augmented cognition systems have been developed that use physiological measures to enhance operator performance based on real-time assessment of general cognitive processes. These systems succeeded in quantifying cognitive parameters and identification of cognitive breakdowns with regard to rather directly detectable cognitive state indicators, such as workload or arousal, which triggered predetermined mitigation strategies when cognitive gauges surpassed a given threshold. But augmented cognition systems to date have been limited in the number and variety of mitigation strategies, in part due to limited knowledge regarding context. When addressing more complex cognitive constructs, such as situation awareness, direct measures of particular cognitive activity do not suffice in driving real-time mitigation of cognitive problems - the cognitive variable must instead encompass a multitude of parameters, including comprehensive information about the task or system status that caused the problem. This Tutorial introduces an event-based approach to cognitive assessment that drives dynamic real-time system mitigation. Prescriptive ways to evaluate cognitive processes in real-time will be reviewed, including selecting key events as good/bad performance indicators, measuring the physiological reaction to these specific events, and configuration of mitigation strategies on the fly, depending on the system and operator state. Specific topics include (1) a review of mitigation approaches as applied to multimodal complex system design, (2) real-time mitigation design strategies, (3) mitigation management framework design, (4) lessons-learned and best practices for implementing mitigation strategies, and (4) demonstrations of efficacy of design approaches using examples from real-world, information-rich environments. Real-time mitigation design requires designers to consider costs and benefits associated with design changes, and optimize when and where such design strategies are utilized. Design issues to be discussed include when to mitigate, what to mitigate, and how to mitigate to minimize overload and optimize situation awareness and performance.

**Benefits:**

Participants will acquire knowledge of, and practice in, mitigation strategies and framework design, and how static design approaches differ from real-time mitigation strategies that may be implemented in innovative closed-loop systems such as those developed within the Augmented Cognition community.

**Target audience:**

Intermediate, targeted for individuals building systems with real-time design modifications.

**Biographical Sketch**

**Dr. Kelly S. Hale** is the Human Systems Integration Director at Design Interactive, Inc. She has over 8 years experience in human-computer interaction, usability evaluation methods of advanced technologies, and cognitive processes within multimodal systems and virtual environments. Kelly has led numerous usability design and evaluation projects, including websites, innovative appliances, and military software applications. She has been involved with DARPA's AugCog program, ONR's VIRTE program, and has gained extensive experience in evaluating various devices using a variety of empirical and non-empirical usability evaluation methods. She is Principal Investigator of multiple Phase I and II SBIR efforts funded by ONR, DARPA and NASA, and is research and technical lead of innovative augmented cognition technology development funded by IARPA. Kelly directed Multimodal Information Design Support (MIDS) and Tool for Information Processing Capability Assessment (TIPCA) SBIR product development efforts and a Speech, Earcons, Auditory Spatialized (SEAS) Signals research project for Boeing. Kelly holds a BS in Kinesiology/Ergonomics from the University of Waterloo, Canada, and an MS and PhD in Industrial Engineering from the University of Central Florida.

Monday, 20 July 2009 @ 09:00 - 12:30

Room: Garden Sallon Two

**Tobias Heffelaar**

**Peter Chen**

**Lucas Noldus**

Noldus Information Technology BV,  
*The Netherlands*

### Objectives:

In this Tutorial, participants will learn:

- how to design, execute and analyze observational studies in the context of HCI research and usability testing;
- how to configure and use the software tool The Observer XT at various stages of the research and development process, from field observations to summative usability tests;
- how to combine observational data collection with other techniques, such as eye tracking and physiological data acquisition.

### Content and Benefits:

Human factors researchers and practitioners can choose from a variety of tools to assess usability and user experience. While certain aspects of HCI can be measured automatically, there is still a need for human observers to record task performance, verbal and nonverbal behavior of users. The Observer XT is a software tool that offers both: observational data collection and seamless integration with a wide range of other measurement systems. In this Tutorial, participants will learn how to evaluate usability and user experience using observational techniques and The Observer XT. The Tutorial consists of a combination of presentations and hands-on exercises (on participant's own notebook computer). Software will be provided by the instructors.

Topics covered:

- Setting up the test environment.
- Designing the coding scheme.
- Data collection.
- Multimodal measurements.
- Analyzing observational data.

### Target audience:

This Tutorial is intended for HCI researchers and usability practitioners who wish to use software tools in observational studies. Those who are planning to set up new research or test facilities or upgrade existing facilities (e.g., usability lab, home lab) will also benefit. The Tutorial is also useful for people working in academic research, corporate human factors groups as well as independent consulting firms.

## Biographical Sketch

**Mr. Tobias Heffelaar** received a M.Sc. in social science information technology from the University of Groningen. Since 1998 he has been working for Noldus Information Technology as a usability engineer, trainer and consultant. He has extensive experience in setting up software and hardware tools for HCI research and usability testing and training users.

**Mr. Peter Chen** currently serves as Field Sales Manager with Noldus Information Technology, an industry leader in the development, marketing and support of innovative software, instruments and integrated systems and services for HCI and behavioral research. He is responsible for the design, market, and installation of usability and HCI labs in the U.S. and Canada and conducts trainings on data collection and analysis. He earned a Master of Science in Engineering degree from Purdue University and a Master of Science in Computer Science degree from George Washington University.

**Dr. Lucas Noldus** is founder and director of Noldus Information Technology, a developer of software tools and integrated solutions for HCI research and usability testing. Lucas Noldus received a Ph.D. in behavioral biology from Wageningen University. He has more than 18 years of experience in tools development and training users. He has authored numerous peer-reviewed papers and conference presentations about methods and techniques in behavioral research.

**Prof. Robert Proctor**

Purdue University, USA

**Prof. Kim Vu**

California State University - Long Beach, USA

**Objectives:**

One objective of this Tutorial is to provide an overview of fundamental concepts and findings concerning human information processing. Another is to relate contemporary knowledge of human information processing to issues of relevance to HCI.

**Content and Benefits:**

HCI is fundamentally an information-processing task. The human information processing approach is based on the idea that human performance, from displayed information to a response, is a function of several processing stages. The nature of these stages, how they are arranged, and the factors that influence how quickly and accurately a particular stage operates, can be discovered through appropriate research methods.

Human information processing analyses are used in HCI in several ways. First, basic facts and theories about information-processing capabilities are taken into consideration when designing interfaces and tasks. The first part of this Tutorial will review classic and recent findings on such topics as attention, memory, decision-making, and action selection, and discuss their relevance for HCI.

Second, information-processing methods are used in HCI to conduct empirical studies evaluating the cognitive requirements of various tasks in which a human uses a computer. The second part of the Tutorial will describe recent developments in empirical methods for studying human information processing, and provide examples of how they can be applied to HCI.

**Target audience:**

This Tutorial is geared toward human factors and HCI professionals who do not have much background in human information processing, or for those who want a refresher course concerning basic principles of human information processing, recent developments in the area, and what it has to offer HCI. It should be of interest to computer scientists, industrial designers, and engineers who want to improve their designs by incorporating information-processing analyses.

**Biographical Sketch**

**Prof. Robert Proctor** is Distinguished Professor of Psychological Sciences at Purdue University. Dr. Proctor is the coordinator of the program in Cognitive Psychology and co-coordinator of the interdisciplinary Human Factors program. He teaches courses in Human Factors in Engineering, Human Information Processing, Attention, and Perception and Action. Dr. Proctor's research focuses on basic and applied aspects of human performance. He has published over 150 articles on human performance and is author of numerous books and book chapters. His books include "Human Factors in Simple and Complex Systems", "Skill Acquisition and Human Performance, Stimulus-Response Compatibility: An Integrated Perspective", "Attention: Theory and Practice", and "Human Factors in Web Design". He is Fellow of the American Psychological Association and Association for Psychological Science, and Honorary Fellow of the Human Factors and Ergonomics Society.

**Prof. Kim Vu** is Associate Professor of Psychology at California State University, Long Beach. She is Associate Director of the Center for Usability in Design and Accessibility and of the Center for the Study of Advanced Aeronautic Technologies. Dr. Vu has over 50 publications in areas relating to human performance, human factors, and human-computer interaction. She is co-author of the chapter, "Human Information Processing: An Overview for Human-Computer Interaction," in "The Human-Computer Interaction Handbook" (1st and 2nd editions), co-editor of the "Handbook of Human Factors in Web Design", and co-author of the book "Stimulus-Response Compatibility Principles: Data, Theory, and Application".

Monday, 20 July 2009 @ 14:00 - 17:30

Room: Garden Sallon One

## Dr Ray Adams

CIRCUA, Middlesex University, *United Kingdom*

### Objectives:

After this Tutorial, participants will be able to:

- Use semantic networks to select the most appropriate heuristics for a target group of technologies.
- Use cognitive user models to select the most appropriate heuristics for a target group of users.
- Use simple neural networks to predict user evaluations of an accessible, interactive system.

### Content and Benefits:

Design heuristics have been important for interactive system design for many years (Wang and Lum 1971; Nielsen and Tognazzini 1994). Their use has grown exponentially. A Google search (useit.com) found the following numbers of relevant citations: 1998: 600 and 2005: 58,000.

A survey found that most researchers develop ad-hoc lists, whilst a sizeable minority use or adapt Nielsen's heuristics.

The emerging consensus is that different technologies require different heuristics, but that there is no clear picture as to how to select those heuristics.

However, busy practitioners and researchers do not always need to reinvent their own heuristics. A new, systematic approach to the selection of heuristics can be produced based on three findings:

- Semantic networks in which similarity is reflected by proximity can depict user knowledge of different technologies.
- Different user requirements are captured by differences in a cognitive user model.
- Simple neural networks can learn to predict users' heuristic evaluations.

On this basis, a new approach has been developed for the generation of structured set of heuristics to match different technologies and user requirements.

This Tutorial will provide an expert briefing on these new developments in the application of heuristics to accessible, interactive systems design.

Participants in this Tutorial will also be invited to participate in future development programmes with these methodologies.

### Target audience:

Practitioners and researchers in HCI who want to use design heuristics to create accessible and usable interactive systems.

## Biographical Sketch

**Dr. Ray Adams** is the Centre Head of CIRCUA (Collaborative International Research Centre for Universal Access), School of Engineering & Information Sciences, Middlesex University, London. He was trained in London and Cambridge Universities. He has an international reputation as a researcher and practitioner in HCI and universal access.

## Dr. Jon Gunderson

University of Illinois, USA

### Objectives:

- Knowledge of functional needs of people with disabilities accessing web resources.
- Design guidelines and techniques for functional accessibility.
- Tools to support accessible web design.
- Examples of accessible design.

### Content and Benefits:

The objective of this Tutorial is for participants to understand the needs of people with disabilities and a best practices approach using web standards to implement Federal Section 508 standards and W3C Web Content Accessibility Guidelines. The Tutorial will present tools and techniques needed for managing and implementing accessible design. The Tutorial will discuss how organizations can work together to improve the accessibility of purchased web resources and services using a collaboration model and developing a common set of purchasing requirements. Examples of accessible design will be presented, discussing how cooperation among higher educational institutions leads to improvements in web accessibility. The Tutorial demonstrates how accessible design benefits all users, by providing developers with a more efficient and cost effective way of creating and maintaining web resources, and giving everyone more flexibility and options in accessing and using web resources.

There will be three main parts to the Tutorial. The first part will demonstrate web browsing experiences of people with disabilities and explore two of the main myths on the web that result in inaccessible design. The first myth is that the web is primarily a graphical medium. The web was not designed only for graphical rendering, but for a wide range of technologies. The second myth is that users have no control over rendering of web resources. Author choices in markup can support or inhibit the user being able to adjust the rendering of a web resource to meet their own needs. Keyboard support and navigation will also be discussed.

The second part will present information on the current web accessibility guidelines, including the Federal Section 508 and W3C Web Content Accessibility Guidelines. This part of the presentation will focus on accessible design rather than accessible repair. Current accessibility work is often characterized as accessible repair. The author creates the web resource and then reviews their design for accessibility problems. This often results in web resources that meet accessible design guideline requirements, but are not functionally accessible to many people with disabilities. The concept of accessible design is used at the beginning of the design process. Authors choose markup that is inherently accessible from the beginning and the results make web

resources more usable by everyone.

The third part will look at examples of web resources that use the accessible design approach to creating web resources. Examples will include the web resources at the University of Illinois and the Illinois Department of Human Services.

### Outline:

Part 1: Alternative Views of the Web

Part 2: Accessibility Guidelines

Part 3: Examples of the use of accessible design

### Target audience:

Web developers, user interface designers, web development instructors, usability specialists and administrators.

## Biographical Sketch

**Dr. Jon Gunderson** is the Coordinator of Assistive Communication and Information Technology Accessibility for the Division of Disability Resources and Education Services at the University of Illinois at Urbana/Champaign. He has been involved with information technology and disability since 1979. He is currently working on a number of tools and resources related to improving the accessibility of the web to persons with disabilities including the Illinois Functional Accessibility Evaluator and the Firefox Accessibility Extension. He has taught courses on web accessibility and lead the formations of collaborations between universities and private companies to improve the accessibility of web resources and applications purchased by universities.

Dr. Gunderson received his Ph.D. from the University of Wisconsin-Madison in Industrial and Systems Engineering with an emphasis in Human Factors. He also has a B.Sc. and an M.Sc. degree from UW-Madison in Electrical and Computer engineering. His current responsibilities at the University of Illinois include information technology accommodation issues for students, faculty and staff at UIUC. Before his present position at UIUC, he was an adjunct assistant professor in an RSA sponsored rehabilitation engineering training program at the University of Illinois. During his graduate studies he worked at the Trace Research and Development Center and was a consultant to the State of Wisconsin on information technology access issues and training. He is the past chair of the W3C WAI User Agent Accessibility Working Group and is a current participant in the W3C WAI Protocols and Formats working group.

Monday, 20 July 2009 @ 14:00 - 17:30

Room: Garden Sallon Two

**Dr. Guy A. Boy**

IHMC / FIT, USA

**Dr. Jeffrey M. Bradshaw**

IHMC, USA

## Objectives:

The main learning objectives are to introduce practitioners and researchers to emerging changes in the way people interact with machines, and in particular to the shift from direct manipulation to agent management in life-critical domains such as aviation, space exploration, military, nuclear industry, automobile industry, telecommunications, and medicine. By the end of the Tutorial, participants will be able to better understand and more effectively use current concepts in interaction design of highly automated domain-specific systems.

## Content and Benefits:

The Tutorial will address three main parts, although the third one will be integrated into the first two at Tutorial time (each instructor will use 50% of the overall Tutorial time):

- History and motivation (a short history of automation, overview of agent technology)
- Design principles, (social and technical aspects of agent acceptability, cognitive function allocation, procedural interfaces)
- Applications (Human-robotic applications, DARPA CALO personal assistant, Cognitive prostheses, Active design documents, GEM pRoom: Computer-supported meetings)

The major features of this Tutorial are:

- » an introduction to similarities and differences between human-centered and technology-centered approaches to interaction design of highly automated domain-specific systems;
- » a development of the concept of cognitive function as a common entity that is useful for the representation of both human and software agents (i.e., automation);
- » a presentation of the necessary cognitive science knowledge within the scope of the currently emerging industrial agent technology;
- » a presentation of the tradeoffs between direct manipulation and agent management;
- » live and video demonstrations of how agents can be used to facilitate the communication, cooperation and coordination between various activities that include training and operations;
- » hands-on exercises of cognitive function allocation that help understand how automation can be human-centered developed.

## Target audience:

Participants are expected to come from a domain of expertise that requires the development of advanced interaction media to insure, for example, safety, efficiency, usability, comfort, esthetics, ethics or ease of learning.

## Biographical Sketch

**Dr. Guy Boy** is Senior Research Scientist at the Florida Institute for Human and Machine Cognition, and University Professor at the Florida Institute of Technology (FIT). His research is in human-centered design of safety-critical dynamic systems. He was the President and Director of the European Institute of Cognitive Sciences and Engineering (EURISCO International) from 1992 to 2008. He received his Ph.D. in Automation and System Design from the Ecole Nationale Supérieure de l'Aéronautique et de l'Espace in 1980, his "Habilitation à Diriger des Recherches" in 1992 (Paris VI), and his Full Professorship Qualification in Computer Science and Psychology in 1994. He was a Principal Investigator and Group Leader (Advanced Interaction Media) at NASA Ames Research from 1989 to 1991. He is an expert consultant at the European Commission for the Information Society Technologies Programme (IST). He is the author of two books, "Intelligent Assistant Systems" (Academic Press, 1991), and "Cognitive Function Analysis" (Ablex, 1998), and the coordinator of the "French Handbook of Cognitive Engineering" (Hermès-Lavoisier, 2003). He was nominated expert by the European Space Agency to contribute to the elaboration of the European Space Human-Machine Interaction program in 1991. From 1994 to 1996, he was the Scientific Coordinator of the European Network RoHMI (Robust Human-Machine Interaction). Since 1995, he is the Director of a series of biennial industrial summer schools organized by EURISCO. From 1995 to 1999, he served as Executive Vice-Chair of the ACM-SIGCHI Executive Committee. He is a Member of the French National Academy of Air and Space and Chair of the Aerospace Human Factors and Ergonomics Technical Committee of the International Ergonomics Association.

**Dr. Jeffrey M. Bradshaw** (PhD University of Washington) is a research scientist at the Institute for Human and Machine Cognition. Previously, he led the intelligent agent technology group at The Boeing Company. He initiated the development of the KAOs agent framework and its use in research applications for NASA, DARPA, and The Boeing Company. He was recently a Co-PI for a DARPA-funded international experiment on agents for Coalition Operations (CoAX), and leads a team for agent survivability and policy-based security under the DARPA Ultra\*Log program. Under grants from the NASA Cross-Enterprise and Intelligent Systems Programs, he leads research teams investigating principles of human-robotic teamwork. As part of this work, he is extending KAOs for testbed experimentation with various robots. He also participates in the ONR NAIMT project and the Army Research Labs ADA consortium. He participates in the multimodal dialogue research group of the DARPA Cognitive Assistant that Learns and Observes (CALO) project. He has served as chair of the RIACS Science Council for NASA Ames Research Center and as chair of ACM SIGART. In 1993-94, he was a Fulbright Senior Scholar at EURISCO in Toulouse, France. Among other publications, he edited the books "Knowledge Acquisition as a Modeling Activity" (with Ken Ford, Wiley, 1993), "Software Agents" (AAAI Press/The MIT Press, 1997), "Software Agents for the Warfighter" (in press), and the forthcoming "Handbook of Agent Technology" (AAAI Press/The MIT Press).

**Mr. Aaron Marcus**

Aaron Marcus and Associates, Inc. (AM+A), USA

**Objectives:**

Participants will become familiar with the current state of mobile product/service development, including applications for phones/PDAs, navigation, vehicles, and media players for music and video; key technology, social, business, cultural, and UI issues, and learn specific techniques appropriate for designing and analyzing mobile products and services. In this Tutorial, participants will learn practical principles and techniques that are immediately useful. They will also have an opportunity to put them into practice through pen-and-paper exercises.

**Content and Benefits:**

Participants will learn principles of best practice and current trends in mobile userinterface design. Examples will cover latest trend in phones, PDA, navigation devices, and wrist-top devices. Case studies from media management, video, and wrist-top channel design will highlight design trade-offs.

The tutorial is structured as follows:

**Lecture 0:** Introduction to instructor and Tutorial (15 minutes).

**Lecture 1:** Mobile UI Design: Intro, Tour and Book Summary (135 minutes).

**Lecture 2:** Asian Technology Trends and Culture Issues in Mobile UI Design (30 minutes).

**Lecture 3:** Case Study of Asian Mobile UI Design: Wukong Project (15 minutes).

**Lecture 4:** Making Media Metadata Management Fun in Consumer Electronics (15 minutes).

**Lecture 5:** Case Study of Phone/PDA UI (60 minutes).

**Lecture 6:** Wrist-Top UI Design (15 minutes).

**Lecture 7:** Universal Mobile Sign System: LoCoS (15 minutes).

**Lecture 8:** User-Centered Design in Mobile Systems: A Case Study (30 minutes).

**Exercise 1:** Designing a Mobile Navigation Device (60 minutes).

**Target audience:**

Intended audience: researchers and developers of mobile devices of all kinds as well as others wanting to find out more about what is happening in the industry and global trends.

Level: introductory. Participants may be advanced user interface designers, but the topic may be new to them. Beginning user-interface designers will also benefit and be able to follow.

**Biographical Sketch**

**Mr. Aaron Marcus** is the founder and President of Aaron Marcus and Associates, Inc. (AM+A). He graduated in physics from Princeton University and in graphic design from Yale University. Mr. Marcus focuses his attention on the Web and wireless communication, mobile devices, helping the industry to learn about good user-interface and information-visualization design, providing guidelines for globalization/localization, the challenges of “baby faces” (small displays for consumer information appliances) of ubiquitous devices, and cross-cultural communication.

Mr. Marcus has written over 250 articles; written/co-written five books, including (with Ron Baecker) “Human Factors and Typography for More Readable Programs” (1990), “Graphic Design for Electronic Documents and User Interfaces” (1992), and “The Cross-GUI Handbook for Multiplatform User Interface Design” (1994) all published by Addison-Wesley; and contributed chapters/case studies to five handbooks of user-interface design, information appliances, and culture. Mr. Marcus has published, lectured, tutored, and consulted internationally for more than 40 years and has been an invited keynote/plenary speaker at conferences internationally.

In 1992, he received the National Computer Graphics Association’s annual award for contributions to industry. He was the keynote speaker for ACM/SIGGRAPH 1980, the organizer and chair of the opening plenary panel for ACM/SIGCHI 1999, and the closing keynote plenary speaker for UPA 2005, the Usability Professional’s Association’s annual conference. In 2007, he was named an AIGA Fellow by the AIGA Cross-Cultural Design Center. He is the Editor-in-Chief of User Experience (UX), Editor of Information Design Journal, and is an Advisor to Interactions. He is also on the Editorial Boards of Visible Language, Universal Access in the Information Society, and the International Journal of Human-Computer Interaction.

Tuesday, 21 July 2009 @ 08:30 - 17:00

Room: Hampton

## Dr. Nigel Bevan

Professional Usability Services,  
United Kingdom

### Objectives:

Participants will learn how the ISO 18529 model of human centered design can be used informally for process improvement, or for more formal assessments of usability capability. They will be introduced to:

- ISO 13407 standard for human centered design, and the list of essential human centered activities in ISO TR 18529.
- How ISO 18529 activities map onto typical user centered design methods.
- How to organize a process improvement workshop.
- How usability capability can be assessed.

### Content and Benefits:

The most commonly reported approach to usability process improvement is for an organization to start with usability testing as this has recognized value, even though the benefits are limited by the difficulty of making significant improvements late in the lifecycle. The perceived benefits of testing are then used to gradually justify activities earlier in the lifecycle.

The difficulty with this approach is that it usually only involves relatively junior management. When personnel change, or economies are being made in the organization the usability work can be vulnerable.

The Tutorial will suggest a more effective approach to usability process improvement, by auditing the extent to which the good practice embodied in ISO TR 18529 is implemented in typical projects, and identifying areas for organizational improvement.

ISO TR 18529 "Human-centred lifecycle process descriptions" contains a detailed set of human centered activities derived from ISO 13407 that are potentially needed to implement human centered design in systems development.

Each ISO 18529 activity can be assessed as not done, partially done, or fully done and managed, as part of systems development. This can be carried out relatively informally in a process improvement workshop, or as part of a more formal process assessment of usability capability (analogous to the software process assessment that can be carried out using the SEI CMM - Capability Maturity Model).

This information enables an organization to decide how much improvement is desirable in particular areas, or on an activity-by-activity basis.

Case studies will be presented of a formal usability process assessment of an IT department, and of a simple one-day workshop that provided the basis for process improvement at an aerospace company.

One or two ISO 18529 activities will be selected, and the presenter will briefly question volunteers from the audience to assess the extent to which their organizations carry out the activities.

A discussion group with resources to support the Tutorial will be established so that participants can share experience of applying the principles.

### Target audience:

Anyone who has some responsibility for user centered design in their organization, or who would like to make a case for improving their organizational capability. Basic familiarity with the area of user centered design is assumed, but no prior knowledge of ISO standards is needed.

The Tutorial will be useful to:

- Usability and user centered design specialists who need to justify the use of user centered design methods in their organization.
- Project managers with responsibility for activities including use of user centered methods.
- Anyone who would like to understand the value of the ISO model of human centered design.

## Biographical Sketch

**Dr. Nigel Bevan** is an independent consultant and researcher with wide industrial experience. He has managed a series of European projects that have incorporated user centred design into the development processes of several large organisations. He is responsible for the UsabilityNet project that established a web site of usability resources, and the UPA Usability Body of Knowledge. Nigel has contributed to many international standards including ISO 13407, and is editor of the new version of the ISO standard for usability methods supporting human-centered design. He was a member of the US National Academy of Science Committee that produced the report on Human-System Design Support for Changing Technology. Nigel has authored a chapter on cost benefits in "Cost-Justifying Usability: An Update for the Internet Age".

**Dr. Panayiotis Zaphiris**Cyprus University of Technology, *Cyprus***Dr. Chee Siang Ang**City University London, *United Kingdom***Objectives:**

Social Network Analysis (SNA) focuses on patterns of relations between and among people, organizations, states, etc. It seeks to describe networks of relations as fully as possible, tease out the prominent patterns in such networks, trace the flow of information through them, and discover what effects these relations and networks have on people and organizations.

SNA has the potential to be extensively utilized to analyze human-human interactions in online communities (discussion boards, newsgroups, virtual organizations).

This Tutorial provides an overview of this analytic technique and demonstrates how it can be used in HCI (especially computer mediated communication, (CMC)) research and practice. This topic becomes even more important these days with the increasing popularity of social networking websites and other social software (e.g., YouTube, myspace, MMORPGs, virtual worlds like Second Life etc.) and the research interest in studying them.

Upon completion of this Tutorial, the attendees should:

- Be able to understand the basics of social network analysis, its terminology and background (part 1)
- Be able to transform communication data to network data (part 1)
- Know practically how social network analysis (SNA) can be applied to HCI (especially CMC) analysis (part 2)
- Get familiar with the use of standard SNA tools and software (part 2)
- Be able to derive practical and useful information through SNA analysis that would help design an innovative and successful online community. (part 2).

**Content and Benefits:**

The content for the Tutorial is divided into two parts, each of which is structured in small groups to maximize the interaction among participants

- Part 1: Introduction to Social Network Analysis.
  - » Benefits: the attendees will be exposed to the introduction of SNA, get familiar with the terminology and definitions of SNA.
- Part 2: Practical uses of social network analysis (SNA).
  - » Benefits: Through a series of interactive exercises, a number of case studies will be demonstrated and discussed. Case studies will draw from diverse areas (e.g., use of SNA to study age differences in CMC, use of SNA in universal design and research).

Ways of using SNA to study new forms of CMC such as MMORPGs, Wikis, blogs, etc., will also be discussed.

**Target audience:**

The Tutorial is targeted to practitioners and academics interested in computer mediated communication, universal design, especially researchers and practitioners who are interested in domains that social network analysis can be applied.

**Biographical Sketch**

**Dr. Panayiotis Zaphiris** is an Associate Professor at the Cyprus University of Technology (CUT). Before joining CUT he was a Reader the Centre for Human-Computer Interaction Design, School of Informatics of City University London. From 1999-2002 he was a researcher at the Institute of Gerontology at Wayne State University from where he also got his Ph.D. in HCI. His research interests lie in HCI with an emphasis on inclusive design and social aspects of computing. He has a strong interest in internet related research (web usability, mathematical modelling of browsing behaviour in hierarchical online information systems, online communities, e-learning, web based digital libraries and social network analysis of online human-to-human interactions). Panayiotis Zaphiris has published over 120 publications in prominent journals (e.g., Zaphiris, P., Sarwar, R. (2006) Trends, Similarities and Differences in the Usage of Teen and Senior Public Online Newsgroups. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 13(3), 2006, 403-422. ACM Press.), and has presented his work in numerous conferences. He is the editor of 4 books.

**Dr. Chee Siang Ang** is a post-doctoral research fellow at the Centre for Human-Computer Interaction Design, School of Informatics of City University London. His research interests include the psychology and sociology of computer games including new forms of CMC communication such as MMORPG. His research deals mainly with the social aspect of gaming.

Tuesday, 21 July 2009 @ 08:30 - 12:00

Room: Sheffield

## Dr. Bonnie E. John

Carnegie Mellon University, USA

### Objectives:

Prototyping tools make it easier to explore a design space, so that many different ideas can be generated and discussed. However, evaluating those ideas to understand whether they are better, as opposed to just different, is still an intensely human task. User testing, concept validation, focus groups, design walkthroughs, all are expensive in both people's time and real dollars.

Just as crash dummies in the automotive industry save lives by testing the physical safety of automobiles before they are brought to market, cognitive crash dummies save time, money, and potentially even lives, by allowing designers to automatically test their design ideas before implementing them. Cognitive crash dummies are engineering models of human performance that make quantitative predictions of human behavior on proposed systems without the expense of empirical studies on running prototypes.

When cognitive crash dummies are built into prototyping tools, design ideas can be rapidly expressed and easily evaluated.

This Tutorial reviews the state of the art of predictive modeling and presents a tool, CogTool, that integrates rapid prototyping with modeling. Participants will use their own laptops to prototype an interactive system and create a model of skilled performance time on that prototype. The course ends with a review of other tools and a look to the future of predictive modeling.

### Content and Benefits:

Participants in this course will

- Understand the state of the art and the future of predictive human performance modeling.
- Learn to prototype in CogTool, a free software tool for rapid prototyping, sharing design ideas, and predicting human performance on those ideas.
- Learn to make quantitative predictions of skilled execution time and how to use these predictions for benchmarking, competitive analysis, and requirements setting.
- Walk away with the skills to use CogTool on their company's projects.

### Target audience:

Usability professionals and software developers who want to evaluate alternative designs alternatives. No prior knowledge of prototyping, psychology or predictive human performance modeling is required.

## Biographical Sketch

**Dr. Bonnie E. John**, a psychologist and engineer, has more than 25 years experience in HCI. A CHI Academy member, Dr. John heads CMU's Masters Program in HCI, researches both human performance modeling and software engineering, and consults regularly in government and industry. She has taught courses at professional conferences since 1992.

## Dr. Waldemar Karwowski

University of Central Florida, USA

## Dr. Gregory Bedny

Essex County College, USA

### Objectives:

- Introduce basic principles and concepts of Systemic-Structural Activity Theory (SSAT), the relationship between general and systemic-structural activity theories, cognitive psychology, action theories and situated approach.
- Demonstrate multiple examples of the algorithmic, functional and quantitative task analysis in the HCI field.
- Give hands on experience in applying the demonstrated approach to the analysis of computer based tasks.
- Show how the results of the task analysis can be used for enhancement of software, reduction of the task complexity and increasing the reliability of human performance.

### Content and Benefits:

This Tutorial introduces participants to the Systemic-Structural Activity Theory that provides a unified framework and a new approach to the study human work. In this Tutorial SSAT will be discussed as a conceptual approach HCI task analysis. The Tutorial will consist of presentations, discussion and small group exercises.

#### Benefits:

Participants will learn basic concepts and principles of SSAT and acquire knowledge and practical skills for applying these concepts to the task analysis in HCI studies.

#### Qualitative and Functional analyses:

Demonstrate various qualitative methods and functional analysis of Computer base tasks. Models of activity self-regulation will be discussed.

#### Algorithmic analysis:

Such concepts as human algorithm, deterministic and probabilistic algorithm will be introduced. Basic principles of algorithmic analysis will be considered based on practical examples. New method of eye movement analysis will be shown.

#### Time structure analysis and quantitative methods:

These two issues will be discussed and HCI examples will be considered.

#### Hands on training:

Participants will practice the above mentioned methods performing a number of exercises. By applying these methods to a series of examples, participants will get hands on experience of using SSAT in the HCI field.

### Target audience:

Researchers, usability engineers, ergonomists, college professors and students, psychologists.

## Biographical Sketch

**Dr. Waldemar Karwowski** is Professor and Chairman of the Department of Industrial Engineering & Management Systems, and Director of the Center for Industrial Ergonomics at the University of Central Florida, Orlando, FL, USA. His research, teaching and consulting activities focus on human system integration and safety aspects of advanced manufacturing enterprises, human-computer interaction, prevention of work-related musculoskeletal disorders, workplace and equipment design, and theoretical aspects of ergonomics science. Dr. Karowowski is the author or co-author of over 300 scientific publications, and has edited or co-edited 35 books, including the "International Encyclopedia of Ergonomics and Human Factors". Dr. Karwowski serves as editor or co-editor of the "Human Factors and Ergonomics in Manufacturing", "Theoretical Issue in ergonomics Science", "International Journal of Occupational Safety and Ergonomics", "Consulting Editor of the Ergonomics". He is Past President of the International Ergonomics Association (IEA), Past President of the Human Factors and Ergonomics Society (HFES), and Past Director of the Board of Certification in Professional Ergonomics (BCPE).

Dr. Karwowski holds an M.S. (1978) in Production Engineering and Management from the Technical University of Wroclaw, Poland, and a Ph.D. (1982) in Industrial Engineering from Texas Tech University. Recently, he was awarded the Sc.D. (dr hab.) degree in Management Science by the Institute for Organization and Management in Industry (ORGMAZ), Warsaw Poland (June 2004). He is also a Board Certified Professional Ergonomist (BCPE).

**Dr. Gregory Z. Bedny** works in Essex County College, Social Science Division. He earned his PhD in Industrial Organizational Psychology from the Educational University of Moscow and a Post-Doctorate Degree in Experimental Psychology from the Soviet Union National Pedagogical Academy of Science. Dr. Bedny is a Board Certified Professional Ergonomist (BCPE). He also is Honorary Academician of the International Academy of Human Problems in Aviation and Astronautics in Russia and Honorary Doctor of Science from South Ukrainian State Pedagogical University. He authored a number of books such as "The Russian Theory of Activity. Current Application to Design and Learning", 1997 (co-authored with Dr. D. Meister) and "A Systemic-Structural theory of Activity. Application to Human Performance and Work Design", 2007 (co-authored with Dr. W. Karwowski). He also co-edited (with O. Chebykin, and W. Karwowski) "Ergonomics and Psychology. Developments in Theory and Practice", 2008.

Dr Bedny is the founder of systemic-structural activity theory (SSAT) and works in this area since 25 years. SSSAT is high level generality theory that is the basis for unified and standardized methods of studying human work, with applications in a variety of fields.

Tuesday, 21 July 2009 @ 13:30 - 17:00

Room: Sheffield

## Dr. Simeon Keates

IT University of Copenhagen, Denmark

### Objectives:

The objective of this Tutorial is to introduce participants to the fundamental concepts of designing for Universal Access as part of an overall user-centered design approach. The Tutorial puts a particular focus on practical examples and methods illustrated by many case studies.

### Content and Benefits:

- Introduction to Universal Access (UA) / accessibility / inclusive design
- Motivations (legislation, demographics, etc.)
- Basic concepts (top-down or bottom-up?)
- Equitable access (what is "reasonable" accommodation?)
- Relating accessibility and usability
- Building a business case for universal access
- How to incorporate inclusive design / accessibility / usability into businesses
- Examples of company responses to universal access
- A design model for universal access
- Involving users in the design process
- Case studies

The Tutorial will refer to numerous case studies to illustrate the points being made. These case studies will include kiosks, robots, haptic force feedback and digital television.

### Target audience:

This Tutorial is aimed at anyone wanting to learn about Universal Access, accessibility, assistive technologies, inclusive design and how to accommodate these in a corporate or research setting.

## Biographical Sketch

**Dr Simeon Keates** is an Associate Professor at the IT University of Copenhagen. Prior to joining the IT University, he worked for 2 years at ITA Software designing new interfaces for a major flag carrier airline and 3 years at the IBM TJ Watson Research Center. He was also the Royal Mail Research Fellow in the Engineering Design Centre at the University of Cambridge.

Simeon has written 2 books, "Countering Design Exclusion" (Springer) and "Designing for Accessibility" (Lawrence Erlbaum), has edited 3 further books and has published over 100 papers.

**Dr. Albert "Skip" Rizzo**

University of Southern California, USA

**Objectives:**

Participants will learn about:

- The rationales for use of Virtual Reality in the assessment and rehabilitation of a wide range of clinical disorders
- The relevant issues involved in the design, development, implementation, and evaluation of virtual environments for use in assessment and rehabilitation via a grand overview of the entire field.
- Applications where virtual reality has been used in the study, assessment, treatment and rehabilitation of cognitive, psychological, motor processes via a grand overview.
- Case studies on developing VR applications for assessment, therapy and rehabilitation.
- The issues to be considered for decision making regarding the use of these information technology tools with vulnerable clinical populations in a professional and ethical manner.

**Content and Benefits:**

Virtual Reality (VR) technology has emerged as a viable tool for mental health and rehabilitation applications. The capacity of VR technology to create controllable, dynamic, interactive and immersive stimulus environments, within which behavioral responding can be recorded and measured, offers clinical assessment and intervention options that are not available using traditional methods. Much like an aircraft simulator serves to test and train piloting ability under a variety of controlled conditions, virtual environments have been developed to present simulations that target human cognitive, emotional, motor and functional processes that are relevant for assessment, therapy and rehabilitative purposes. As well, VR technology provides assets that will continue to advance the scientific study of normal functioning.

VR applications have been developed and tested which focus on component cognitive processes including: attention, memory, visuospatial and executive functions. Many VR systems have also been developed to address psychological conditions (i.e., anxiety disorders, addiction) and motor impairments following brain injury or stroke. Functional VR training scenarios have also been designed to test and teach instrumental activities of daily living such as street-crossing, automobile driving, meal preparation, supermarket shopping, use of public transportation, and wheelchair navigation. These initiatives have formed a foundation of work that provides support for the feasibility and potential value of further development of VR applications for clinical and research questions.

This Tutorial will present an overview and history of Clinical VR and the rationale for its use in assessment, therapy and rehabilitation. Both positive and negative examples of VR examples will be presented. Participants will be given the latest information on what the technology involves, how it has been

applied with clinical and non-clinical populations, professional issues involved in its use, and current and future research issues.

**Target audience:**

This Tutorial should be of interest to application designers and developers within the general HCI community. Additionally, the Tutorial will have appeal to a wide range of professionals in fields such as psychology, physical therapy, occupational science, neurology, neuropsychology, psychiatry, social work and general medical areas.

**Biographical Sketch**

**Dr. Albert "Skip" Rizzo** received his Ph.D. in Clinical Psychology from the State University of New York at Binghamton. He is a Research Scientist at the University of Southern California, Institute for Creative Technologies and has Research Professor appointments with the USC Dept. of Psychiatry and the School of Gerontology. Dr. Rizzo conducts research on the design, development and evaluation of Virtual Reality systems targeting the assessment and training/rehabilitation of spatial abilities, attention, memory, executive function and motor abilities. He is conducting research on the use of 360 Degree Panoramic video for exposure therapy (social phobia), role-playing applications (anger management, etc.), and future multimedia journalism applications. He is also investigating the use of VR for pain distraction at LA Children's Hospital and is currently designing game-based physical rehabilitation VR scenarios for the elderly and persons Central Nervous System dysfunctions. His latest project has focused on the translation of the Xbox game Full Spectrum Warrior into a therapy application for Iraq War veterans. His research also involves designing and evaluating 3D User Interface devices and interaction methods and he has created a graduate level course at USC entitled "Human Factors and Integrated Media Systems". He is associate editor of the journals *CyberPsychology and Behavior* and *The International Journal of Virtual Reality*, and Senior Editor of the MIT Press journal, *Presence: Teleoperators and Virtual Environments*. He is on a number of editorial boards for journals in the areas of cognition and computer technology and is the creator of the Virtual Reality Mental Health Email Listserver (VRPSYCH). He has guest-edited theme issues for *Applied Psychophysiology and Biofeedback* on "VR and Psychophysiology", for the MIT journal *Presence: Teleoperators and Virtual Environments* on "Virtual Reality and Neuropsychology", and for *CyberPsychology and Behavior* on "Aging and Information Technology". Currently, he is editing an issue on "Virtual Rehabilitation". In 2003, he served as General Chair for the IEEE VR2003 conference and co-chaired this conference in 2004. He was also the Conference Chair of the 4th Annual Workshop on Virtual Rehabilitation.

Tuesday, 21 July 2009 @ 13:30 - 17:00

Room: Garden Sallon One

## Dr. Dr. Norbert A. Streitz

Smart Future Initiative, *Germany*

### Objectives:

The main objective of this Tutorial is to make researchers and practitioners aware of the implications for interaction design being caused by the increasing trend of embedding computation in everyday objects creating smart artefacts and ambient intelligence environments. Attendees will gain an overall understanding of designing for ubiquitous and pervasive computing and ambient intelligence, and will learn from examples in different applications domains (office, home, public spaces, smart cities, leisure/games). Tutorial attendees will learn about the state-of-the-art and how to realize the full potential of this new area in their current and future work.

### Content and Benefits:

With the development of the “disappearing computer” new challenges for the design of human-computer interaction arise. Computers used to be “primary” artefacts, now they become “secondary” artefacts moving into the background in several ways (physical and mental disappearance). They disappear from the scene, become part of the environment and turn invisible in the perception of users. This creates new challenges for designing the interaction of humans with computers embedded in everyday objects as, e.g., ambient displays, interactive tables and walls, etc.. Selected issues are:

- How can people interact with “invisible” devices?
- What kind of affordances of everyday objects can be provided and exploited?
- How do people migrate from explicit interfaces and interactions to implicit interfaces and sensor-based interaction with smart artefacts?
- How can we design for transparency and make people “understand” the interface?
- How can we design for a coherent experience?
- How to deal with errors and malfunctioning that are not explicitly perceived?

While disappearance is a major aspect, “smart” artefacts are also characterized by the use of sensors collecting data about the environment, the devices and humans acting in this context in order to provide ambient intelligence-based support. The resulting issues are discussed based on the distinction between “system-oriented, importunate smartness”, implying more or less automatic behaviour of smart environments, and “people-oriented, empowering smartness”, where the empowering function is in the foreground. The latter approach can be summarized as “smart spaces make people smarter” which is achieved by keeping “the human in the loop” and empowering people to be in control, making informed decisions and taking actions. Last but not least, privacy issues in sensor-based smart environments are being discussed ranging from being a legal and moral right to becoming a commodity and privilege.

The Tutorial is divided in three major parts:

- Part 1: Introduction, approaches and conceptual frameworks.
- Part 2: Application domains and design examples taken from selected projects.
- Part 3: Research lines of future research agendas for ambient intelligence.

### Target audience:

Anyone interested in designing innovative systems and products, including researchers in cognitive and computer science, system designers, developers, information architects, interface designers, practitioners. Some background in user interface design is helpful.

## Biographical Sketch

**Dr. rer. nat. Dr. phil. Norbert Streitz** (Ph. D. in physics and Ph.D. in psychology) is a Senior Scientist and Strategic Advisor with more than 25 years of experience in information and communication technology. He is the founder of the “Smart Future Initiative” launched in January 2009. From 1987 - 2008, he was at the Fraunhofer Institute IPSI in Darmstadt, Germany, where he held different positions as Division Manager and Deputy Director, teaching also at the Department of Computer Science of the Technical University Darmstadt. A prominent example is his research division “AMBIENTE – Smart Environments of the Future” at Fraunhofer IPSI, Germany. He was a post-doc fellow at the University of California, Berkeley, a visiting scholar at Xerox PARC, Palo Alto, as well as at the Intelligent Systems Lab of ETL-MITI, Tsukuba Science City, Japan. He has published/edited 17 books and (co)authored more than 115 technical papers.

Norbert Streitz was/is involved in many EU-funded projects and efforts as well as in activities funded by industry. He is currently the Chair of the Working Group on “Ambient Computing and Communication Environments” which prepared a State-of-the-Art-Report and is now preparing a ‘white paper’ on future research agendas. From 2001-2004, he was the Chair of the Steering Group of the EU-funded proactive research initiative “The Disappearing Computer”.

His research interests include Ambient/Pervasive/Ubiquitous Computing, Interaction and Experience Design, Human-Computer Interaction, Hypertext/ Hypermedia, Computer-Supported Cooperative Work, and Cognitive Science. He and his team are also known for the development of Roomware®, the integration of walls and furniture with information technology and the design of smart artefacts and ambient displays.

He serves regularly on the program committees of national and international conferences and on several editorial boards. He is often invited to present tutorials and keynote speeches to scientific as well as commercial events in Europe, USA, South America and Asia (Malaysia, Singapore, Hong-Kong, China, Korea and Japan).

# Parallel Sessions Overview

Wednesday, 22 July 2009 @ 08:00 - 12:30

Conference Thematic Area	08:00 – 10:00 (page 40)	10:30 – 12:30 (page 44)
	Session Title	Session Title
<b>EHAWC</b>	<ul style="list-style-type: none"> <li>Light and Display</li> </ul>	
<b>HIMI</b>	<ul style="list-style-type: none"> <li>Intelligent HCI Convergence - I</li> </ul>	<ul style="list-style-type: none"> <li>Interacting with the World Wide Web</li> <li>Intelligent HCI Convergence - II</li> </ul>
<b>HCI</b>	<ul style="list-style-type: none"> <li>Brain-Computer Interface (BCI): Towards Understanding Neural Bases of Human-Computer Interaction - I</li> <li>User Interface Design</li> <li>Games Design and Evaluation</li> <li>Emotional Interaction</li> </ul>	<ul style="list-style-type: none"> <li>Rapid User Interface Prototyping (RUIP)</li> <li>HCI in Social Science: From the Perspective of the Communication - I</li> <li>Space for Interaction: Interaction for Space</li> <li>Gesture-based Interaction - I</li> <li>Text, Language and Communication</li> <li>Brain-Computer Interface (BCI): Towards Understanding Neural Bases of Human-Computer Interaction - II</li> </ul>
<b>EPCE</b>	<ul style="list-style-type: none"> <li>Situation Awareness and Navigation</li> </ul>	<ul style="list-style-type: none"> <li>Driving Safety and Support</li> </ul>
<b>UAHCI</b>	<ul style="list-style-type: none"> <li>Cognitive Prostheses and Assisted Communication</li> <li>Enculturating Human Computer Interaction</li> <li>Universal Access to Communication and Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>Intelligent Interaction for Pervasive Learning</li> <li>Proposals for New Interface Design</li> </ul>
<b>VMR</b>	<ul style="list-style-type: none"> <li>Haptic Interaction in VR</li> </ul>	<ul style="list-style-type: none"> <li>Next Generation of VR - Ultra-Realistic Communication Media</li> </ul>
<b>IDGD</b>	<ul style="list-style-type: none"> <li>Cross-Cultural and Multi-Cultural Design</li> </ul>	<ul style="list-style-type: none"> <li>User Experience Design and Research</li> </ul>
<b>OCSC</b>	<ul style="list-style-type: none"> <li>Online Social Networking in Higher Education</li> </ul>	<ul style="list-style-type: none"> <li>Usability and Sociability in Computer Games and Virtual Worlds</li> </ul>
<b>AC</b>	<ul style="list-style-type: none"> <li>Context-Driven AugCog Support</li> </ul>	<ul style="list-style-type: none"> <li>Understanding Brain, Cognition, and Behavior in Complex Dynamic Environments</li> <li>Applications and Challenges in Neurally-driven System Interfaces - I</li> </ul>
<b>DHM</b>	<ul style="list-style-type: none"> <li>Human Performance Modeling</li> <li>Non-intrusive Methods for Workload Evaluation</li> </ul>	
<b>HCD</b>	<ul style="list-style-type: none"> <li>Usability Measurement</li> <li>Delocalized Services and Mobile Computing in Healthcare</li> </ul>	<ul style="list-style-type: none"> <li>User-Experience Development: Strategy, Tactics, and Maturity Modeling</li> <li>Rethinking the Context of Use</li> </ul>

**EHAWC** Ergonomics and Health Aspects of Work with Computers • **HIMI** Human Interface and the Management of Information • **HCI** Human-Computer Interaction • **EPCE** Engineering Psychology and Cognitive Ergonomics • **UAHCI** Universal Access in Human-Computer Interaction

Conference Thematic Area	13:30 – 15:30 (page 49)	16:00 – 18:00 (page 53)
	Session Title	Session Title
<b>EHAWC</b>	<ul style="list-style-type: none"> <li>Information Work Systems</li> </ul>	<ul style="list-style-type: none"> <li>New Ways of Office Interior Design: Exploring the Ergonomics and Health Aspects</li> </ul>
<b>HIMI</b>	<ul style="list-style-type: none"> <li>Safety of Medication Usage</li> <li>Advanced Applications</li> </ul>	<ul style="list-style-type: none"> <li>Applications in Knowledge/Usability Engineering</li> <li>Mobile Interactions</li> <li>Visualization</li> </ul>
<b>HCI</b>	<ul style="list-style-type: none"> <li>Voice User Interface Design</li> <li>Ubiquitous / Mobile Learning Environment and New User Experience - I - Fundamental Models and Technologies</li> <li>Evaluation of Case Studies</li> <li>HCI for Medical and Health Practice</li> <li>Interacting and Driving</li> <li>HCI in Social Science: From the Perspective of the Communication - II</li> </ul>	<ul style="list-style-type: none"> <li>Affective Technology towards Affective Society</li> <li>Everyday Life Computing</li> <li>Usability for Bio and Health Informatics</li> <li>Ubiquitous / Mobile Learning Environment and New User Experience - II - Practices and Evaluations</li> <li>Cross-Cultural Issues in Interaction Design</li> <li>Interaction and Collaboration</li> </ul>
<b>EPCE</b>	<ul style="list-style-type: none"> <li>Transport Automation</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive Methods in HCI</li> </ul>
<b>UAHCI</b>	<ul style="list-style-type: none"> <li>Inherent Accessibility in Software Design, Development and Assessment</li> <li>Human, Computer &amp; Environment</li> </ul>	<ul style="list-style-type: none"> <li>Support Independent Living for Older People: Applications and Integrations</li> <li>New Trends in Web Accessibility</li> <li>Universal Access and Mobility</li> </ul>
<b>VMR</b>		<ul style="list-style-type: none"> <li>The Effects of Visual Stimulation</li> </ul>
<b>IDGD</b>	<ul style="list-style-type: none"> <li>Cross-Cultural User-Interface Design</li> </ul>	
<b>OCSC</b>		<ul style="list-style-type: none"> <li>Social Behavior in On-line Communities - I</li> <li>Designing and Assessing On-line Communities</li> </ul>
<b>AC</b>	<ul style="list-style-type: none"> <li>Rugged Wearable Sensor Systems for Reliable Classification of Physiological Data</li> <li>Applications and Challenges in Neurally-driven System Interfaces - II</li> </ul>	<ul style="list-style-type: none"> <li>Modeling for AugCog Applications</li> </ul>
<b>DHM</b>	<ul style="list-style-type: none"> <li>Supporting User-centred Design through Human Modelling Applications</li> </ul>	
<b>HCD</b>	<ul style="list-style-type: none"> <li>Human-Machine Interaction where the Machine is Not Only a Computer</li> <li>User Involvement and Participation in HCD</li> </ul>	

# Parallel Sessions Overview

Thursday, 23 July 2009 @ 08:00 - 12:30

Conference Thematic Area	08:00 – 10:00 (page 58)	10:30 – 12:30 (page 62)
	Session Title	Session Title
<b>EHAWC</b>	<ul style="list-style-type: none"> <li>Evaluating Health and Safety Promotion Activities in Work Settings</li> </ul>	
<b>HIMI</b>	<ul style="list-style-type: none"> <li>Practice and Training with Display-Control Interfaces</li> <li>Advanced Interaction Techniques</li> </ul>	<ul style="list-style-type: none"> <li>Human Performance and Situation Awareness in Automated Separation Assurance Systems</li> <li>Browsing and Exploring Information</li> </ul>
<b>HCI</b>	<ul style="list-style-type: none"> <li>Conversational Robot, Agent, Smart Sensing and Human-Computer Interaction</li> <li>Model-Based Design Approaches: Case Studies, Tool Support and Validation</li> <li>Eye Tracking in HCI</li> </ul>	<ul style="list-style-type: none"> <li>Virtual Classroom and Communicability: Empathy and Interaction for all</li> <li>Advancing the Mobile Device User Experience</li> <li>Gesture-based Interaction - II</li> <li>User-Centered Practices in Industry</li> </ul>
<b>EPCE</b>	<ul style="list-style-type: none"> <li>HCI in Aviation</li> </ul>	
<b>UAHCI</b>	<ul style="list-style-type: none"> <li>Inclusive Interaction: Product Interaction for Inclusive and Aging Populations</li> <li>Design of Ambient Intelligent Environments for all</li> <li>Cognitive Accessibility and Cognitive Support</li> </ul>	<ul style="list-style-type: none"> <li>Universal Accessibility of Documents - I</li> <li>Core-technologies for Ubiquitous Access and Natural Interaction</li> <li>Computational Intelligence for Human-Computer Interaction</li> <li>Universal Access and Education</li> </ul>
<b>VMR</b>	<ul style="list-style-type: none"> <li>Designing Virtual and Mixed Reality Environments</li> </ul>	<ul style="list-style-type: none"> <li>Advanced Prototyping for Human-Centered Product Design</li> </ul>
<b>IDGD</b>	<ul style="list-style-type: none"> <li>Mobile Money: Design for Inclusion</li> </ul>	<ul style="list-style-type: none"> <li>Human-Culture Interaction Beyond HCI</li> </ul>
<b>OCSC</b>	<ul style="list-style-type: none"> <li>Learning and Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>User Innovation Networks</li> </ul>
<b>AC</b>	<ul style="list-style-type: none"> <li>Augmented Social Information Seeking, Collaborative Interaction, and Computer Use</li> </ul>	<ul style="list-style-type: none"> <li>User State Sensing: Applications</li> <li>Sensing and Mitigating Cognitive States</li> </ul>
<b>DHM</b>	<ul style="list-style-type: none"> <li>Systems and Safety - I</li> <li>Modeling Human Motion</li> </ul>	<ul style="list-style-type: none"> <li>Systems and Safety - II</li> </ul>
<b>HCD</b>	<ul style="list-style-type: none"> <li>HCD Activities in Japan</li> <li>Human-Centered Applications</li> </ul>	<ul style="list-style-type: none"> <li>Human-Centred Design: the next Big Thing?</li> <li>User Experience in HCD</li> </ul>

**EHAWC** Ergonomics and Health Aspects of Work with Computers • **HIMI** Human Interface and the Management of Information • **HCI** Human-Computer Interaction • **EPCE** Engineering Psychology and Cognitive Ergonomics • **UAHCI** Universal Access in Human-Computer Interaction

Conference Thematic Area	13:30 – 15:30 (page 67)	16:00 – 18:00 (page 71)
	Session Title	Session Title
<b>EHAWC</b>		
<b>HIMI</b>	<ul style="list-style-type: none"> <li>• HCI in MIS</li> <li>• User Experience of Enterprise Software</li> </ul>	<ul style="list-style-type: none"> <li>• Human Interface for Management Information System</li> <li>• Information Search</li> <li>• Privacy, Security and Trust</li> </ul>
<b>HCI</b>	<ul style="list-style-type: none"> <li>• Smart Textiles and Clothing</li> <li>• Designing Intelligent Interaction Environments</li> <li>• Beyond Usability</li> <li>• Novel Advanced Interaction Scenarios</li> <li>• Enhancing Visual Interaction</li> </ul>	<ul style="list-style-type: none"> <li>• Dealing with Complex Human-Computer Interactions: Examples of Affective and Cultural Management</li> <li>• Embodied Interaction and Communication</li> <li>• User Interface Adaptation and Personalization</li> <li>• Novel Interaction Environments</li> <li>• HCI and Education</li> </ul>
<b>EPCE</b>	<ul style="list-style-type: none"> <li>• Multi-modal Icon Design: Vision, Audition and Emotion</li> </ul>	<ul style="list-style-type: none"> <li>• Sensing and Measuring Driver</li> </ul>
<b>UAHCI</b>	<ul style="list-style-type: none"> <li>• Non-conventional Interaction Techniques</li> <li>• Universal Accessibility of Documents - II</li> </ul>	<ul style="list-style-type: none"> <li>• AAL in the Wild</li> <li>• Tactile Interaction</li> <li>• Non-visual Interaction</li> </ul>
<b>VMR</b>	<ul style="list-style-type: none"> <li>• Advanced 3D User Interfaces in Mixed Reality Environment</li> </ul>	<ul style="list-style-type: none"> <li>• VR Applications</li> </ul>
<b>IDGD</b>	<ul style="list-style-type: none"> <li>• Application of User Interface Design Methodologies for Software Engineering</li> <li>• Cultural Interface Design</li> </ul>	
<b>OCSC</b>	<ul style="list-style-type: none"> <li>• Beyond Virtual: Building Intercultural Competence with Social Games and Online Communities</li> </ul>	<ul style="list-style-type: none"> <li>• Empirical Usability Testing Methods in Various Domains</li> <li>• Online Gaming and Social Computing</li> </ul>
<b>AC</b>	<ul style="list-style-type: none"> <li>• PANEL SESSION: Augmenting Cognition in High Demand Environments - Application of Augmented Cognition in the Military, Space and Health Care Domain</li> </ul>	<ul style="list-style-type: none"> <li>• Augmented Cognition in Training Technologies</li> </ul>
<b>DHM</b>	<ul style="list-style-type: none"> <li>• Human Performance Modeling in Safety Critical Systems</li> </ul>	<ul style="list-style-type: none"> <li>• User Modelling and Data Mining</li> </ul>
<b>HCD</b>	<ul style="list-style-type: none"> <li>• Usability in the Context of Culture</li> <li>• Understanding the Mobile User</li> </ul>	<ul style="list-style-type: none"> <li>• Information Systems for Just-In Time Health Information</li> </ul>

# Parallel Sessions Overview

Friday, 24 July 2009 @ 08:00 - 12:30

Conference Thematic Area	08:00 – 10:00 (page 76)	10:30 – 12:30 (page 80)
	Session Title	Session Title
<b>EHAWC</b>		
<b>HIMI</b>	<ul style="list-style-type: none"> <li>Advanced Interfaces for Valuable Communication and Collaboration Support - I</li> <li>Supporting Product Design</li> </ul>	<ul style="list-style-type: none"> <li>Advanced Interfaces for Valuable Communication and Collaboration Support - II</li> <li>Structuring and Accessing Information Spaces</li> <li>Information Systems and Knowledge Management in Industry</li> </ul>
<b>HCI</b>	<ul style="list-style-type: none"> <li>Development of Tactile &amp; Haptic Interaction</li> <li>Systematization, Modeling and Quantitative Evaluation of Human Interface</li> <li>Designing for Children</li> <li>Multimodal Interaction</li> </ul>	<ul style="list-style-type: none"> <li>An Exploration of HCI Methods and Approaches in 2009</li> <li>Touch and Gesture Interfaces: Design and User Experience Challenges and Success Stories</li> <li>Physiological Signal Monitoring in Human-Computer Interaction</li> <li>Interacting with Everyday Objects</li> </ul>
<b>EPCE</b>	<ul style="list-style-type: none"> <li>Teamwork, Collaboration and Productivity</li> </ul>	<ul style="list-style-type: none"> <li>Development and Application of Cognitive Models in Vehicle Guidance</li> </ul>
<b>UAHCI</b>	<ul style="list-style-type: none"> <li>Inclusive Design for Universal Access</li> <li>Participatory Approaches in Design for All (DfA)</li> <li>Functional Accessibility Testing</li> <li>Smart Homes and Smart Appliances</li> </ul>	<ul style="list-style-type: none"> <li>FUITEL09: Future Interfaces in Technology Enhanced Learning and Training</li> <li>Sign Language Technologies</li> <li>Distributed Intelligence and the Web</li> <li>Accessibility Issues and Studies</li> </ul>
<b>VMR</b>	<ul style="list-style-type: none"> <li>Whole Body Interaction</li> </ul>	<ul style="list-style-type: none"> <li>Constructing Mixed Reality Environment</li> </ul>
<b>IDGD</b>		<ul style="list-style-type: none"> <li>Computing for Sustainable Socio-Economic Development</li> </ul>
<b>OCSC</b>	<ul style="list-style-type: none"> <li>Credibility, Accountability, User Reputation and Trust</li> </ul>	
<b>AC</b>	<ul style="list-style-type: none"> <li>Adaptive Instruction</li> </ul>	<ul style="list-style-type: none"> <li>Augmented Cognition Applications Applied to Deception, Intent and Cognitive Load</li> </ul>
<b>DHM</b>	<ul style="list-style-type: none"> <li>Methods for Motion Reconstruction and Personalization of Human Models</li> <li>3D Body Scanning Applications and Limitations</li> </ul>	<ul style="list-style-type: none"> <li>Modeling Human Behavior for Smart Environments</li> </ul>
<b>HCD</b>	<ul style="list-style-type: none"> <li>Integrating Human Needs in Development</li> </ul>	<ul style="list-style-type: none"> <li>HCD and Innovation</li> <li>Human Centered Learning and Education</li> </ul>

**EHAWC** Ergonomics and Health Aspects of Work with Computers • **HIMI** Human Interface and the Management of Information • **HCI** Human-Computer Interaction • **EPCE** Engineering Psychology and Cognitive Ergonomics • **UAHCI** Universal Access in Human-Computer Interaction

Conference Thematic Area	13:30 – 15:30 (page 85)	16:00 – 18:00 (page 89)
	Session Title	Session Title
<b>EHAWC</b>	<ul style="list-style-type: none"> <li>Health, Comfort and Stress at Work</li> </ul>	
<b>HIMI</b>	<ul style="list-style-type: none"> <li>Designing the Services/Contents in Post Ubiquitous Society</li> <li>How to Get UE Results Implemented?</li> </ul>	<ul style="list-style-type: none"> <li>Learning Environments</li> <li>Information Management in Industrial and Military Applications</li> </ul>
<b>HCI</b>	<ul style="list-style-type: none"> <li>Interaction in Smart Environments</li> <li>Usability Evaluation Methods and Techniques</li> <li>Web Design</li> <li>Novel Approaches to User Interface Development</li> </ul>	<ul style="list-style-type: none"> <li>Ambient Interfaces</li> <li>Collaborative Development and new Devices for Human Computer Interaction</li> <li>Relationality Design</li> <li>Interaction Design</li> <li>Design Methods and Tools</li> </ul>
<b>EPCE</b>	<ul style="list-style-type: none"> <li>Information Complexity of Systems and Displays</li> </ul>	
<b>UAHCI</b>	<ul style="list-style-type: none"> <li>Design of Ambient Assisted Living Environments</li> <li>Aging and Technology: Considering Experience in the Equation</li> <li>Designing and Developing Intelligent Interaction Environments</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive Science meets Computer Science</li> <li>Designing for Mobile Computing</li> <li>Natural Interaction in Smart Environments</li> <li>Multimodality and Interaction in Universal Access</li> </ul>
<b>VMR</b>	<ul style="list-style-type: none"> <li>Stereoscopic HMD and LCD Technology as a Human Interface</li> </ul>	<ul style="list-style-type: none"> <li>Novel Virtual and Mixed Reality Environments</li> </ul>
<b>IDGD</b>	<ul style="list-style-type: none"> <li>Addressing a Global Market</li> </ul>	
<b>OCSC</b>	<ul style="list-style-type: none"> <li>Social Behavior in On-line Communities - II</li> </ul>	<ul style="list-style-type: none"> <li>Communication and Collaboration Enhancement Systems toward Human Symbiosis</li> </ul>
<b>AC</b>	<ul style="list-style-type: none"> <li>Neuroplastic Rehabilitation</li> <li>Augmented Cognition within Neuroergonomics</li> </ul>	<ul style="list-style-type: none"> <li>Neurophysiological Measures and Sensing Technologies</li> <li>AugCog for Training and Education: Adaptive Instructional Strategies and Mitigation Techniques</li> </ul>
<b>DHM</b>	<ul style="list-style-type: none"> <li>Human Modeling: New Trends</li> </ul>	<ul style="list-style-type: none"> <li>Shape Representation and Analysis</li> </ul>
<b>HCD</b>	<ul style="list-style-type: none"> <li>Persona and Scenario-based Design in Asia</li> </ul>	<ul style="list-style-type: none"> <li>Usability Testing</li> <li>Human Needs in Novel Interaction Environments</li> </ul>

**EHAWC**

**Light and Display**

Room: Crescent

Chair(s): Oliver Stefani, *Fraunhofer, Germany.*

**Lighting as Support for Enhancing Well-being, Health and Mental Fitness of an Ageing Population - The FP6 EU Funded ALADIN Project**

Inge Gavát, *Ovidiu Grigore, Marius Cotescu, University Politehnica Bucharest, Romania;* Markus Canazei, *Bartenbach Light Laboratory, Austria;* Hermann Atz, *Institute for Social Research and Opinion Polling, Italy;* Klaus Becker, *Becker Meditec, Germany;* Lajos Izsó, *Budapest University of Technology and Economics, Hungary;* Guido Kempter, *Vorarlberg University of Applied Sciences, Austria;* Herbert Plischke, *Ludwig-Maximilians-University Munich, Germany;* Wilfried Pohl, *Bartenbach Light Laboratory, Austria.*

**Color Model for Human Visual Environment and Physical Interaction**

Tsutomu Mutoh, Kazuo Ohno, *International Media Research Foundation, Japan.*

**Human Factors in Lighting**

Martin Braun, Oliver Stefani, Achim Pross, Matthias Bues, Dieter Spath, *Fraunhofer, Germany.*

**Improving In-Vehicle Display and Control Design for Older Drivers**

Jaeheok Ryu, *HYUNDAI-KIA Motors, Korea;* Gyohyeon Song, Seongil Lee, *Sungkyunkwan University, Korea;* Yoonhyung Cho, Gyouhyung Kyung, Hyungkee Kim, Kyungkuk Baek, *HYUNDAI-KIA Motors, Korea.*

**The Evaluation of Operating Posture in Typing the QWERTY Keyboard on PDA**

Han-Chi Hsiao, Fong-Gong Wu, Ronald Hsi, Chih-I Ho, Wen-Zhou Shi, Chien-Hsu Chen, *National Cheng Kung University, Taiwan.*

**HIMI**

**Intelligent HCI Convergence - I**

Room: Garden Salon Two

Chair(s): Jahwan Koo, *University of Wisconsin-Madison, United States.*

**Freeze TCPv2: An Enhancement of Freeze TCP for Efficient Handoff in Heterogeneous Networks**

Minu Park, Jaehyung Lee, *Sungkyunkwan University, Korea;* Jahwan Koo, *University of Wisconsin-Madison, United States;* Hyunseung Choo, *Sungkyunkwan University, Korea.*

**A Hierarchical Data Dissemination Protocol using Probability-based Clustering for Wireless Sensor Networks**

Moonseong Kim, Matt Mutka, *Michigan State University, United States;* Hyunseung Choo, *Sungkyunkwan University, Korea.*

**Location-based Mixed-Map Application Development for Mobile Devices**

Hyo-Haeng Lee, Kil-Ram Ha, Kwang-Seok Hong, *Sungkyunkwan University, Korea.*

**A Framework for Fairness Guaranteed Multi-streaming Transport Protocol**

Wonhyuk Lee, *Korea Institute of Science & Technology Information (KISTI), Korea;* Hyuncheol Kim, *Namseoul University, Korea;* Doowon Seo, *Daeduk College, Korea;* Jinwook Chung, *Sungkyunkwan University, Korea.*

**A Study on Computing Resource Partition for Increasing Efficiency of Grid System**

Changsun Lim, Seongjin Ahn, Jinwook Chung, *Sungkyunkwan University, Korea.*

**Proactive Fault Detection Schema for Enterprise Information System Using Statistical Process Control**

ChiHoon Lee, Doohyung Lee, *Sungkyunkwan University, Korea;* Jahwan Koo, *University of Wisconsin-Madison, United States;* Jinwook Chung, *Sungkyunkwan University, Korea.*

**HCI**

**Brain-Computer Interface (BCI): Towards Understanding Neural Bases of Human-Computer Interaction - I**

Room: Windsor

Chair(s): Chang Nam, *University of Arkansas, United States;* Gerwin Schalk, *Wadsworth Center, NY State Dept. of Health, United States.*

**The Research on EEG Coherence Around Central Area of Left Hemisphere According to Grab Movement of Right Hand**

Mincheol Whang, Jincheol Woo, Jonghwa Kim, *Sangmyung University, Korea.*

**Mind-Mirror: EEG-Guided Image Evolution**

Nima Bigdeli Shamlo, Scott Makeig, *University of California, San Diego, United States.*

**Sensor Modalities for Brain-Computer Interfacing**

Gerwin Schalk, *Wadsworth Center, NY State Dept. of Health, United States.*

**The I of BCIs: Next Generation Interfaces for Brain-Computer Interface Systems that Adapt to Individual Users**

Brendan Allison, *Graz University of Technology, Austria.*

**Ensemble SWLDA Classifiers for the P300 Speller**

Garett Johnson, Dean Krusienski, *University of North Florida, United States.*

**On the Possibility About Performance Estimation Just Before Beginning a Voluntary Motion Using Movement-Related Cortical Potential**

Satoshi Suzuki, Takemi Matsui, Yusuke Sakaguchi, Kazuhiro Ando, Noboyuki Nishiuchi, *Tokyo Metropolitan University, Japan;* Toshimasa Yamazaki, *Kyusyu Institute of Technology, Japan;* Shin'ichi Fukuzumi, *NEC Corporation, Japan.*

**Brain Response to Good and Bad Design**

Haeinn Lee, *St. Cloud State University, United States;* Jungtae Lee, Ssanghee Seo, *Pusan National University, Korea.*

**User Interface Design**

Room: Hampton

Chair(s): Sheue-Ling Hwang, *National Tsing Hua University, Taiwan.*

**Developing a Usable Mobile Flight Case Learning System in Air Traffic Control Miscommunications**

Kuo-Wei Su, Keh-Yeu Lee, Po-Hsin Huang, I-Tsun Chen, *National Kaohsiung First University of Sc. & Tech., Taiwan.*

**Goods-Finding and Orientation in the Elderly on 3D Virtual Store Interface: the Impact of Classification and Landmarks**

Cheng-Li Liu, *Vanung University, Taiwan;* Shiaw-Tsyr Uang, *Minghsin University of Science and Technology, Taiwan;* Chen-Hao Chang, *Vanung University, Taiwan.*

**Effects of Gender Difference on Emergency Operation Interface Design in Semiconductor Industry**

Hunszu Liu, *Minghsin University of Science and Technology, Taiwan.*

**Green Advocate in E-Commerce**

Ying-Lien Lee, *Chaoyang University of Technology, Taiwan;* Fei-Hui Huang, *Oriental Institute of Technology, Taiwan;* Sheue-Ling Hwang, *National Tsing Hua University, Taiwan.*

**The Effects of an Anti-Glare Sleeve Installing on Fluorescent Tube Lamps on Glare and Reading Comfort**

Shiaw-Tsyr Uang, *Minghsin University of Science and Technology, Taiwan;* Cheng-Li Liu, *Vanung University, Taiwan;* Mali Chang, *Minghsin University of Science and Technology, Taiwan.*

**E-shopping Behavior and User-Web Interaction for Developing a Useful Green Website**

Fei-Hui Huang, *Oriental Institute of Technology, Taiwan;* Ying-Lien Lee, *Chaoyang University of Technology, Taiwan;* Sheue-Ling Hwang, *National Tsing Hua University, Taiwan.*

**Web-Based Training System for Improving Aviation Maintenance Performance**

Guo-Feng Liang, *Texas Tech University, United States;* Jih-Tsong Lin, Sheue-Ling Hwang, Eric Min-Yang Wang, *National Tsing Hua University, Taiwan;* Patrick Patterson, *Texas Tech University, United States;* Jiun-Fa Li, *China Institute of Technology, Taiwan.*

# Parallel Sessions

<p><b>Games Design and Evaluation</b> Room: Sheffield</p> <p>Chair(s): Yannis Georgalis, Foundation for Research &amp; Technology - Hellas (FORTH), Greece.</p>	<p><b>Emotional Interaction</b> Room: Garden Salon One</p> <p>Chair(s): Christine Lisetti, Florida International University, United States.</p>
<p><b>Playability Testing of Web-Based Sport Games with Older Children and Teenagers</b> Xavier Ferre, Angelica De Antonio, Ricardo Imbert, Nelson Medinilla, Technical University of Madrid (UPM), Spain.</p> <p><b>An Online Survey System on Computer Game Enjoyment and Personality</b> Xiaowen Fang, Susy Chan, Chitra Nair, DePaul University, United States.</p> <p><b>Emotionally Adapted Games – An Example of a First Person Shooter</b> Timo Saari, Temple University / HIIT / Helsinki School of Economics, United States; Marko Turpeinen, Kai Kuikkaniemi, Ilkka Kosunen, Helsinki Institute for Information Technology (HIIT), Finland; Niklas Ravaja, Helsinki School of Economics, Finland.</p> <p><b>The Effects of Quest Types and Gaming Motivations on Players' Knowledge Acquisitions in an Online Role-Playing Game Environment</b> Jiunde Lee, Chih-Yi Chao, National Chiao Tung University, Taiwan.</p>	<p><b>Cognitive and Emotional Characteristics of Communication in Human-Human/Human-Agent Interaction</b> Yugo Hayashi, Kazuhisa Miwa, Nagoya University, Japan.</p> <p><b>Designing Emotional and Interactive Behaviors for an Entertainment Robot</b> Yo Chan Kim, Hyuk Tae Kwon, Wan Chul Yoon, Korea Advanced Institute of Science &amp; Technology (KAIST), Korea; Jong Cheol Kim, KT, Korea.</p> <p><b>An Integrated Approach to Emotion Recognition for Advanced Emotional Intelligence</b> Panagiotis Bamidis, Christos Frantzidis, Evdokimos Konstantinidis, Aristotle University of Thessaloniki, Greece; Andrej Luneski, South East European Research Centre, Greece; Chrysa Lithari, Manousos Klados, Charalambos Bratsas, Christos Papadelis, Costas Pappas, Aristotle University of Thessaloniki, Greece.</p> <p><b>The Research on Adaptive Process for Emotion Recognition by Using Time-dependent Parameters of Autonomic Nervous Response</b> Jonghwa Kim, Mincheol Whang, Jincheol Woo, Sangmyung University, Korea.</p> <p><b>Interpretation of User Evaluation for Emotional Speech Synthesis System</b> Ho-Joon Lee, Jong Cheol Park, Korea Advanced Institute of Science &amp; Technology (KAIST), Korea.</p> <p><b>Design of Interactive Emotional Sound Edutainment System</b> Myunjin Park, Kyujung Kim, Soongsil University, Korea.</p> <p><b>Anthropometric Facial Emotion Recognition</b> Julia Jarkiewicz, Rafał Kocielnik, Krzysztof Marasek, Polish-Japanese Institute of Information Technology, Poland.</p>

<p><b>EPCE</b></p> <p><b>Situation Awareness and Navigation</b> Room: Towne</p> <p>Chair(s): Kjell Ohlsson, Institute for Humane Technology (IHT), Sweden.</p>	<p><b>Development of a Novel Platform for Greater Situational Awareness in the Urban Military Terrain</b> Stephen Prior, Middlesex University, United Kingdom; Siu-Tsen Shen, National Formosa University, Taiwan; Tony White, Siddharth Odedra, Mehmet Karamanoglu, Mehmet Ali Erbil, Tom Foran, Middlesex University, United Kingdom.</p> <p><b>Supporting Situation Awareness in Demanding Operating Environments Through Wearable User Interfaces</b> Jari Laarni, Juhani Heinilä, VTT Technical Research Centre, Finland; Jukka Häkkinen, University of Helsinki, Finland; Virpi Kalakoski, Finnish Institute of Occupational Health, Finland; Kari Kallinen, Helsinki School of Economics, Finland; Kristian Lukander, Finnish Institute of Occupational Health, Finland; Paula Löppönen, Industrial Designer, Finland; Tapio Palomäki, Finnish Defence Forces Technical Research Centre, Finland; Niklas Ravaja, Helsinki School of Economics, Finland; Paula Savioja, Antti Väättänen, VTT Technical Research Centre, Finland.</p> <p><b>Development of a Technique for Predicting the Human Response to an Emergency Situation</b> Glyn Lawson, Sarah Sharples, David Clarke, Sue Cobb, The University of Nottingham, United Kingdom.</p> <p><b>Supporting Cognitive Collage Creation for Pedestrian Navigation</b> A.H.J. Oomes, Miroslav Bojic, Delft University of Technology, Netherlands; Gideon Bazen, Logica Management Consulting, Netherlands.</p> <p><b>Comparison of Mobile Device Navigation Information Display Alternatives from the Cognitive Load Perspective</b> Murat Can Cobanoglu, Sabanci University, Turkey; Ahmet Alp Kindiroglu, Bogazici University, Turkey; Selim Balcişoy, Sabanci University, Turkey.</p>
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<p><b>UAHCI</b></p> <p><b>Cognitive Prostheses and Assisted Communication</b> Room: Pacific Salon One</p> <p>Chair(s): Noriaki Kuwahara, Kyoto Institute of Technology, Japan.</p>	<p><b>Lessons Learned from Developing Cognitive Support for Communication, Entertainment, and Creativity for Older People with Dementia</b> Norman Alm, Dundee University, United Kingdom; Arlene Astell, St. Andrews University, United Kingdom; Gary Gowans, Richard Dye, Dundee University, United Kingdom; Maggie Ellis, St. Andrews University, United Kingdom; Phillip Vaughan, Philippa Riley, Dundee University, United Kingdom.</p> <p><b>Remote Reminiscence Talking and Scheduling Prompter for Individuals with Dementia Using Video Phone</b> Kiyoshi Yasuda, Chiba Rosai Hospital, Japan; Noriaki Kuwahara, Kazunari Morimoto, Kyoto Institute of Technology, Japan.</p> <p><b>Remote Conversation Support for People with Aphasia: Some Experiments and Lessons Learned</b> Kazuhiro Kuwabara, Shohei Hayashi, Takafumi Uesato, Kohei Umadome, Ritsumeikan University, Japan; Keisuke Takenaka, Abiko City Welfare Center for the Handicapped, Japan.</p> <p><b>Cognitive Chance Discovery</b> Akinori Abe, ATR knowledge Science Laboratories, Japan.</p> <p><b>Coimagination Method: Communication Support System with Collected Images and its Evaluation via Memory Task</b> Mihoko Otake, The University of Tokyo, Japan; Motochiro Kato, Keio University, Japan; Toshihisa Takagi, Database Center for Life Science, Japan; Hajime Asama, The University of Tokyo, Japan.</p> <p><b>Preliminary Study on Remote Assistance for People with Dementia at Home by Using Multi-media Contents</b> Toshimi Hamada, Noriaki Kuwahara, Kazunari Morimoto, Kyoto Institute of Technology, Japan; Kiyoshi Yasuda, Chiba Rosai Hospital, Japan; Utsumi Akira, Shinji Abe, ATR Intelligent Robotics and Communication Laboratories, Japan.</p> <p><b>The Effects of Camera System on Caregivers' Behaviors to Persons with Dementia</b> Taro Sugihara, Japan Advanced Institute of Science &amp; Technology, Japan; Kennichi Nakagawa, Freelance programmer, Japan; Xi Liu, Tsutomu Fujinami, Japan Advanced Institute of Science &amp; Technology, Japan.</p>
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Engineering Psychology and Cognitive Ergonomics

Universal Access in Human-Computer Interaction

Wednesday 08:00 - 10:00

**UAHCI**

**Enculturating Human Computer Interaction**

*Room: Pacific Salon Two*

Chair(s): Matthias Rehm, *University of Augsburg, Germany.*

**Universal Access to Communication and Collaboration**

*Room: Pacific Salon Three*

Chair(s): Christian Stary, *University of Linz, Austria.*

**A Parameter-based Model for Generating Culturally Adaptive Nonverbal Behaviors in Embodied Conversational Agents**

Afia Akther Lipi, *Tokyo University of Agriculture and Technology, Japan*; Yukiko Nakano, *Seikei University, Japan*; Matthias Rehm, *University of Augsburg, Germany.*

**The Art of Cross-Cultural Design for Usability**

Heike Winschiers-Theophilus, *Polytechnic of Namibia, Namibia.*

**Social Practice: Becoming Enculturated in Human-Computer Interaction**

Justine Cassell, *Northwestern University, United States.*

**Models of Culture for Virtual Human Conversation**

David Traum, *University of Southern California, United States.*

**Culture, Politeness and Directive Compliance**

Christopher Miller, Peggy Wu, Vanessa Vakili, Tammy Ott, Kip Smith, *Smart Information Flow Technologies, United States.*

**The Role of Intermediaries in the Development of Asynchronous Rural Access**

Jerry Watkins, *Swinburne University, Australia*; Jo Tacchi, MS Kiran, *Queensland University of Technology, Australia.*

**Acceptance of Mobile Entertainment by Chinese Rural People**

Jun Liu, *Tsinghua University, P.R. China*; Ying Liu, *Nokia Research Center, Beijing, P.R. China*; Hui Li, Dingjun Li, P.L. Patrick Rau, *Tsinghua University, P.R. China.*

**A Mobile Communication System Designed for the Hearing-Impaired**

Ji-Won Song, Sung-Ho Yang, *Inje University, Korea.*

**Using ASR for Transcription of Teleconferences in IM Systems**

Ira Forman, Tom Brunet, Paul Luther, Allen Wilson, *IBM Research, United States.*

**A Modality Replacement Framework for the Communication between Blind and Hearing Impaired People**

Konstantinos Moustakas, Dimitrios Tzovaras, *Centre for Research and Technology Hellas (CERTH), Greece*; Laila Dybkjaer, Niels Ole Bersnen, *NISLab, Denmark, Denmark.*

**Computer-Assisted Lip Reading Recognition for Hearing Impaired**

Yunlong Lay, Huijen Yang, *National Chinyi University of Technology, Taiwan*; Chern-Sheng Lin, *Feng Chia University, Taiwan.*

**WordTree: Results of a Word Prediction System Presented thanks to a Tree**

Georges Badr, Mathieu Raynal, *Université Paul Sabatier, France.*

**«How Should I Read this Word?»: The Influence of Vowelization in a Deep Language Orthography on Online Text Comprehension**

Karen Preceel, *The Open University, Israel*; Ronit Webman, *City University of New York, Graduate Center, United States*; Yoram Eshet-Alkalai, Batsheva Engelberg-Behr, *The Open University, Israel.*

**Impact of Gaze Analysis on the Design of a Caption Production Software**

Claude Chapdelaine, Samuel Foucher, Langis Gagnon, *Computer Research Institute of Montreal (CRIM), Canada.*

**VMR**

**Haptic Interaction in VR**

*Room: Sunset*

Chair(s): Monica Bordegoni, *Politecnico di Milano, Italy.*

Virtual and Mixed Reality

**Enhanced Industrial Maintenance Work Task Planning by Using Virtual Engineering Tools and Haptic User Interfaces**

Simo-Pekka Leino, Salla Lind, *VTT Technical Research Centre, Finland*; Matthieu Poyade, *Universidad de Málaga, Spain*; Sauli Kiviranta, *VTT Technical Research Centre, Finland*; Petteri Multanen, *Tampere University of Technology, Finland*; Arcadio Reyes Lecuona, *Universidad de Málaga, Spain*; Ari Mäkiranta, Ali Muhammad, *Tampere University of Technology, Finland.*

**Enhancing Haptic Rendering through Predictive Collision Detection**

Athanasios Vogiannou, Konstantinos Moustakas, Dimitrios Tzovaras, Michael Strintzis, *Centre for Research and Technology Hellas (CERTH), Greece.*

**A Study of the Attenuation in the Properties of Haptic Devices at the Limit of the Workspace**

Jose San Martin, *Universidad Rey Juan Carlos, Spain.*

**A High-Level Haptic Interface for Enhanced Interaction within Virtools**

Matthieu Poyade, Arcadio Reyes Lecuona, *Universidad de Málaga, Spain*; Simo-Pekka Leino, Sauli Kiviranta, *VTT Technical Research Centre, Finland*; Raquel Viciano-Abad, *Escuela Politécnica Superior de Linares, Spain*; Salla Lind, *VTT Technical Research Centre, Finland.*

**Haptic Interaction and Interactive Simulation in an AR Environment for Aesthetic Product Design**

Monica Bordegoni, Francesco Ferrise, Marco Ambrogio, *Politecnico di Milano, Italy.*

**Fundamental Research of Tactile Perception for Development of Tactile Feeling Display**

Iyo Kunimoto, Naoki Saiwaki, *Nara Women's University, Japan*; Osamu Katayama, Yasuji Inobe, *DENSO Corporation, Japan.*

**A Virtual Button with Tactile Feedback using Ultrasonic Vibration**

Kaoru Tashiro, Yuta Shiokawa, *Keio University, Japan*; Tomotake Aono, *Kyocera Corporation, Japan*; Takashi Maeno, *Keio University, Japan.*

**IDGD**

**Cross-Cultural and Multi-Cultural Design**

*Room: Sunrise*

Chair(s): Irina Kondratova, *National Research Council, Canada.*

Internationalization, Design and Global Development

**Cross-Culture and Website Design: Cultural Movements and Settled Cultural Variables**

Abdalghani Mushtaha, Olga De Troyer, *Vrije Universiteit Brussel, Belgium.*

**Cross-cultural Design & Evaluation of the Apple iPhone**

Michael Oren, Utkarsh Seth, Fei Huang, Sunghyun Kang, *Iowa State University, United States.*

**Identifying and Measuring Cultural Differences in Cross-Cultural User-Interfaces Design**

Jasem Alostath, Sanaa Almoumen, Ahmad Alostath, *Public Authority for Applied Education & Training, Kuwait.*

**Cultural Interface Design Advisor Tool: Research Methodology and Practical Development Efforts**

Irina Kondratova, Ilia Goldfarb, *National Research Council, Canada.*

**Supportive Web Design for Users from Different Cultural Origins in E-Commerce**

Kyeong Kang, *University of Technology Sydney, Australia.*

**Cross-Cultural Understanding of the Dual Structure of Metaphorical Icons: An Explorative Study with French and Turkish Users on an E-learning Site**

Kerem Rızvanoğlu, Özgürol Öztürk, *Galatasaray University, Turkey.*

**Internationalizing Mainframe Applications through Screen Scraping**

Chris Durand, *Bridge360, Inc., United States.*

Wednesday 08:00 - 10:00

# Parallel Sessions

Online Communities and Social Computing

## OCSC

### Online Social Networking in Higher Education

*Room: Royal Palm Salon Six*  
Chair(s): Gabriele Meiselwitz, Towson University, United States.

### Learning Computer Science Fundamentals through Virtual Environments

James Braman, Towson University, United States; Giovanni Vincenti, Gruppo Vincenti, S.r.l., Italy; Ana Maria Arboleda Diaz, Towson University, United States; Andrew Jinman, Twofour Learning, United Kingdom.

**Benefits and Challenges of Using Collaborative Development Environments with Social Software in Higher Computer Science Education**  
Daniel Kadenbach, Carsten Kleiner, Fachhochschule Hannover, Germany.

**Email Accessibility and Social Networking**  
Brian Wentz, Jonathan Lazar, Towson University, United States.

**Accessibility of Registration Mechanisms in Social Networking Sites**  
Gabriele Meiselwitz, Jonathan Lazar, Towson University, United States.

**Heuristics for Implementation of Wiki Technology in Higher Education Learning**  
Portia Pusey, Gabriele Meiselwitz, Towson University, United States.

**"I heard it on the grapevine" – Blogging, Facebook, YouTube, and Student Self-Organization during a Faculty Strike**  
Emilie Gould, Empire State College, United States.

Augmented Cognition

## AC

### Context-Driven AugCog Support

*Room: Royal Palm Salon Five*  
Chair(s): Mark Neerincx, TNO Human Factors / Delft University of Technology, Netherlands; Peter-Paul Van Maanen, TNO Defence, Security and Safety, Netherlands.

### Context-Aware Team Task Allocation to Support Mobile Police Surveillance

Jan Willem Streefkerk, Myra Van Esch-Bussemaekers, TNO Human Factors, Netherlands; Mark Neerincx, TNO Human Factors / Delft University of Technology, Netherlands.

**Tunnel Operator Training with a Conversational Agent-Assistant**  
Eric Buiël, Jan Lubbers, Willem Van Doesburg, Tijmen Muller, TNO Defence, Security and Safety, Netherlands.

**Designing a Control and Visualization System for Off-highway Machinery According to the Adaptive Automation Paradigm**

Stefano Marzani, Francesco Tesauri, Luca Minin, Roberto Montanari, University of Modena and Reggio Emilia, Italy; Caterina Calefato, University of Turin, Italy.

**Context-Dependent Force-Feedback Steering Wheel to Enhance Drivers' On-road Performances**

Luca Minin, Stefano Marzani, Francesco Tesauri, Roberto Montanari, University of Modena and Reggio Emilia, Italy; Caterina Calefato, University of Turin, Italy.

**Adaptive Interfaces in Driving**  
Rino Brouwer, Marieka Hoedemaeker, TNO Human Factors, Netherlands; Mark Neerincx, TNO Human Factors / Delft University of Technology, Netherlands.

**Proposing Strategies to Prevent the Human Error in Automated Industrial Environments**

Jose Neto, Maria Vieira, Federal University of Campina Grande, Brazil; Charles Santoni, Polytechnics School of Marseille DGI - LSIS, France; Daniel Scherer, Federal University of Campina Grande, Brazil.

**Designing Cognition-centric Smart Room Predicting Inhabitant Activities**

Andrey Ronzhin, Alexey Karpov, Irina Kipyatkova, SPIIRAS, Russia.

Digital Human Modeling

## DHM

### Human Performance Modeling

*Room: Royal Palm Salon Three*  
Chair(s): Steven Landry, Purdue University, United States.

### A Computational Implementation of a Human Attention Guiding Mechanism in MIDAS v5

Brian Gore, Becky Hooey, San Jose State Univ. Foundation / NASA ARC, United States; Christopher Wickens, Shelly Scott-Nash, Alion Science and Technology, United States.

**Computational Nonlinear Dynamics Model of Percept Switching with Ambiguous Stimuli**

Norbert Fuerstenau, German Aerospace Center, Germany.

**A Model of Integrated Operator-System Separation Assurance and Collision Avoidance**

Steven Landry, Amit Lagu, Purdue University, United States.

**PERMUTATION: A Corpus-based Approach for Modeling Personality and Multimodal Expression of Affects in Virtual Characters**

Céline Clavel, Jean-Claude Martin, CNRS-LIMSI, France.

**Towards a Computational Model of Perception and Action in Human Computer Interaction**

Pascal Haazebroek, Bernhard Hommel, Leiden University, Netherlands.

### Non-intrusive Methods for Workload Evaluation

*Room: Royal Palm Salon Four*  
Chair(s): Yingzi Du, Indiana University - Purdue University Indianapolis, United States.

### Workload Assessment in Field Using the Ambulatory CUELA System

Rolf Ellegast, Ingo Hermanns, Christoph Schiefer, BGIA - Institute for Occupational Safety & Health, Germany.

**Non-Intrusive Personalized Mental Workload Evaluation for Exercise Intensity Measure**

N. Luke Thomas, Yingzi Du, Tron Artavatkun, Indiana University - Purdue University Indianapolis, United States; Jin-Hua She, Tokyo University of Technology, Japan.

**Workload-Based Assessment of a User Interface Design**

Polly Tremoulet, Patrick Craven, Susan Harkness Regli, Saki Wilcox, Joyce Barton, Kathleen Stibler, Adam Gifford, Lockheed Martin, United States; Marianne Clark, United States.

**What the Eyes Reveal: Measuring Cognitive Workload of Teams**

Sandra Marshall, San Diego State University, United States.

**The New BMW iDrive - Applied Processes and Methods to Assure High Usability**

Bernhard Niedermaier, BMW Group, Research and Technology, Germany; Stephan Durach, BMW, United States; Lutz Eckstein, Andreas Keinath, BMW, Germany.

Wednesday 08:00 - 10:00

HCD

Human Centered Design

**Usability Measurement**

Room: Royal Palm Salon One

Chair(s): James Lewis, IBM Software Group, United States.

**Delocalized Services and Mobile Computing in Healthcare**

Room: Royal Palm Salon Two

Chair(s): Alessandro Andreadis, Oronzo Parlangei, University of Siena, Italy.

**Extending Quality in Use to Provide a Framework for Usability Measurement**

Nigel Bevan, Professional Usability Services, United Kingdom.

**The Factor Structure of the System Usability Scale**

James Lewis, IBM Software Group, United States; Jeff Sauro, Oracle Corporation, United States.

**"How Do I Evaluate THAT?" Experiences from a Systems-Level Evaluation Effort**

Pardha Pyla, Rex Hartson, Manuel Pérez-Quinones, James Arthur, Tonya Smith-Jackson, Deborah Hix, Virginia Tech, United States.

**Performance-Based Usability Testing: Metrics that have the Greatest Impact for Improving a System's Usability**

Robert Bailey, Computer Psychology, Inc., United States; Cari Wolfson, Focus On UI, United States; Janice Nall, Centers for Disease Control and Prevention, United States; Sanjay Koyani, Food and Drug Administration, United States.

**The Physiological User's Response as a Clue to Assess Visual Variables Effectiveness**

Mickael Causse, Institut Supérieur de l'Aéronautique et de l'Espace, France; Christophe Hurter, Centre d'Études de la Navigation Aérienne, France.

**User-Centered Mouse Access Evaluation Design: Windows-Based Simulation Technology**

Chi Chu, China University of Technology, Taiwan.

**Ergonomic Approach for the Conception of a Theatre Medical Regulation System**

William Guessard, French medical corps, France; Alain Puidupin, Richard Besses, Paul-Olivier Miloche, Service de santé des armées, France; Aurélie Sylvain, Délégation générale pour l'armement, France.

**A Personal Assistant for Autonomous Life**

Alessandro Andreadis, Giuliano Benelli, University of Siena, Italy; Pasquale Fedele, Technologies for All s.r.l., Italy.

**Human Factor's in Telemedicine: Training Surgeons by Telementoring**

Dina Notte, ERGODIN, Belgium; Rym Mimouna, Guy-Bernard Cadière, CHU Saint Pierre, Belgium; Jean Bruyins, Hôpital St Pierre - Service de Chirurgie Digestive, Belgium; Michel Degueldre, Pierre Mols, CHU Saint Pierre, Belgium.

**A Preliminary Usability Evaluation of Hemo@care: a Web-based Application for Managing Clinical Information in Hemophilia Care**

Vasco Saavedra, Leonor Teixeira, Carlos Ferreira, Beatriz Sousa Santos, University of Aveiro, Portugal.

**Evaluating Design Concepts to Support Informal Communication in Hospitals through the Development of a Tool based on an Iterative Evaluation**

David Mejia, CICESE Research Center, Mexico; Alberto Morán, Autonomous University of Baja California (UABC), Mexico; Jesus Favela, CICESE Research Center, Mexico; Sergio Ochoa, José Pino, University of Chile, Chile.

**Caring and Curing by Mixing Information and Emotions in Orphan Diseases Websites. A Twofold Analysis**

Maria Cristina Caratozzolo, Enrica Marchigiani, Oronzo Parlangei, Marcella Zaccariello, University of Siena, Italy.

HIMI

Human Interface and the Management of Information

**Interacting with the World Wide Web**

Room: Sunrise

Chair(s): Mitsuru Minakuchi, Kyoto Sangyo University, Japan.

**Intelligent HCI Convergence - II**

Room: Sunset

Chair(s): Jahwan Koo, University of Wisconsin-Madison, United States.

**Formalizing Design Guidelines of Legibility on Web pages**

Fong-Ling Fu, Chiu-Hung Su, National Chengchi University, Taiwan.

**Discovering User Interface Requirements of Search Results for Mobile Clients by Contextual Inquiry**

David Chan, Robert Luk, Hong va Leong, Edward Ho, The Hong Kong Polytechnic University, Hong Kong.

**Auto-complete for Improving Reliability on Semantic Web Service Framework**

Hanmin Jung, Mi-Kyoung Lee, Won-Kyung Sung, Beom-Jong You, Korea Institute of Science & Technology Information (KISTI), Korea.

**Usability Evaluation of Dynamic RSVP Interface on Web Page**

Ya-Li Lin, Darcy Lin, Tunghai University, Taiwan.

**An Empirical Study the Effects of Language Factors on Web Site Use Intention**

Huijen Yang, Yunlong Lay, National Chinyi University of Technology, Taiwan.

**Email Reply Prediction: A Machine Learning Approach**

Taiwo Ayodele, Shikun Zhou, Rinat Khusainov, University of Portsmouth, United Kingdom.

**Richbiff: E-mail Message Notification with Richer Clues**

Mitsuru Minakuchi, Hisashi Miyamori, Kyoto Sangyo University, Japan.

**Expanding SNS Features with CE Devices: Space, Profile, Communication**

Youngho Rhee, HyunJoo Kang, YeoJin Kim, Juyeon Lee, IlKu Chang, Samsung Electronics Co., Ltd, Korea.

**Interactive Object Segmentation System from a Video Sequence**

Guntae Bae, Sooyeong Kwak, Hyeran Byun, Yonsei University, Korea.

**Virtual Convex Polygon Based Hole Boundary Detection and Time Delay Based Hole Detour Scheme in WSNs**

Inyoung Shin, Duy Pham, Hyunseung Choo, Sungkyunkwan University, Korea.

**An End-to-End Proactive TCP based on Available Bandwidth Estimation with Congestion Level Index**

Sangtae Bae, Korea Institute of S&T Evaluation and Planning (KISTEP), Korea; Doohyung Lee, ChiHoon Lee, Jinwook Chung, Sungkyunkwan University, Korea; Jahwan Koo, Suman Banerjee, University of Wisconsin-Madison, United States.

**Representing Logical Inference Steps with Digital Circuits**

Erika Matsak, Tallinn University of Technology, Estonia.

**An OWL-based Knowledge Model for Combined-Process-and-Location Aware Service**

Gunhee Kim, Manchul Han, Jukyung Park, Hyunchul Park, Sehyung Park, Laehyun Kim, Sungdo Ha, Korea Institute of Science and Technology (KIST), Korea.

**Evaluating the Effectiveness and the Efficiency of a Vector Image Search Tool**

Patrizia Di Marco, Tania Di Mascio, Daniele Frigioni, Massimo Gastaldi, University of L'Aquila, Italy.

# Parallel Sessions

## HCI

Human-Computer Interaction

### Rapid User Interface Prototyping (RUIP)

Room: Galleria One

Chair(s): Vasco Amaral, *Universidade Nova de Lisboa, Portugal*; Matteo Risoldi, *University of Geneva, Switzerland*.

### Tooling the Dynamic Behavior Models of Graphical DSLs

Tihámér Levendovszky, Tamás Mészáros, *Budapest University of Technology and Economics, Hungary*.

### Specifying the Representation of Non-geometric Information in 3D Virtual Environments

Kaveh Bazargan, Gilles Falquet, Eric Barboni, *Université Paul Sabatier - Toulouse 3, France*.

### High-Fidelity Prototyping of Interactive Systems Can Be Formal too

Philippe Palanque, Jean-François Ladry, David Navarre, Eric Barboni, *Université Paul Sabatier - Toulouse 3, France*.

### Using Activity Descriptions to Generate User Interfaces for ERP Software

Timothy O'Hear, Yassin Boudjenane, *Revelate S.A., Switzerland*.

### Composing Visual Syntax for Domain Specific Languages

Luis Pedro, Matteo Risoldi, Didier Buchs, *University of Geneva, Switzerland*; Bruno Barroca, Vasco Amaral, *Universidade Nova de Lisboa, Portugal*.

### YVision: A General Purpose Software Composition Framework

Antão Almada, Gonçalo Lopes, André Almeida, João Frazão, Nuno Cardoso, *YDreams, Portugal*.

### Rapid Development of Scoped User Interfaces

Denis Dubé, Jacob Beard, Hans Vangheluwe, *McGill University, Canada*.

### HCI in Social Science: From the Perspective of the Communication - I

Room: Windsor

Chair(s): Donghun Chung, *Kwangwoon University, Korea*.

### Psychophysiology as a Tool for HCI Research - Promises and Pitfalls

Byungho Park, *Korea Advanced Institute of Science & Technology (KAIST), Korea*.

### Students' Visual Perceptions of Virtual Lectures as Measured by Eye Tracking

Yu-Jin Kim, Jin Ah Bae, Byung Ho Jeon, *Kongju National University, Korea*.

### Interaction Comparison among Media Internet Genre

Sang Hee Kweon, Eun-Joung Cho, Ae Jin Cho, *Sungkyunkwan University, Korea*.

### Understanding Online Game Addiction: Connection Between Presence and Flow

SungBok Park, *Hanyang University, Korea*; Ha Sung Hwang, *Dongguk University, Korea*.

### The Experience of Presence in 3D Web Environment: An Analysis of Korean Second Life

SungBok Park, *Hanyang University, Korea*; Ha Sung Hwang, *Dongguk University, Korea*; Myungil Choi, *Namseoul University, Korea*.

### Developing, Deploying and Assessing Usage of a Movie Archive System Among Students of Film Studies

Nazlena Mohamad Ali, Alan Smeaton, Hyowon Lee, Pat Brereton, *Dublin City University, Ireland*.

### Space for Interaction: Interaction for Space

Room: Galleria Two

Chair(s): Matina Halkia, *Joint Research Centre, European Commission, Italy*.

### mæve - An Interactive Tabletop Installation for Exploring Background Information in Exhibitions

Till Nagel, Larissa Pschetz, Moritz Stefaner, *University of Applied Sciences Potsdam, Germany*; Matina Halkia, *Joint Research Centre, European Commission, Italy*; Boris Mueller, *University of Applied Sciences Potsdam, Germany*.

### From Implicit to Touching Interaction by Identification Technologies: Towards Tagging Context

Jose Bravo, Ramon Hervas, *Castilla-La Mancha University, Spain*; Carmen Fuentes, *General Hospital of Ciudad Real, Spain*; Vladimir Villarreal, *Technological University of Panamá, Panamá*; Gabriel Chavira, Salvador Nava, *Autonomous University of Tamaulipas, Mexico*; Jesus Fontecha, Gregorio Casero, Rocio Peña, Marcos Vergara, *Castilla-La Mancha University, Spain*.

### Pull and Push: Proximity-Aware User Interface for Navigating in 3D Space using a Handheld Camera

Mingming Fan, Yuanchun Shi, *Tsinghua University, P.R. China*.

### Mapping for Multi-Source Visualization: Scientific Information Retrieval Service (SIRS)

Dario Rodighiero, *Arcadia S.I.T., Italy*; Matina Halkia, *Joint Research Centre, European Commission, Italy*; Massimiliano Gusmini, *Reggiani S.P.A., Italy*.

### Embodied Interaction or Context-Aware Computing?: An Integrated Approach to Design

Johan Eliasson, Teresa Cerratto Pargman, Robert Ramberg, *Stockholm University & Royal Institute of Technology, Sweden*.

### A Multiple-Level 3D-LEGO Game in Augmented Reality for Improving Spatial Ability

Trien Do, Jong-Weon Lee, *Sejong University, Korea*.

### Interaction Wearable Computer with Networked Virtual Environment

Jiung-yao Huang, *National Taipei University, Taiwan*; Ming-Chih Tung, *Ching Yun University, Taiwan*; Huan-Chao Keh, Ji-jen Wu, *Tamkang University, Taiwan*; Kun-Hang Lee, *National Taipei University, Taiwan*; Chung Tsai, *National Central University, Taiwan*.

### Gesture-based Interaction - I

Room: Crescent

Chair(s): Ji-Hyung Park, *Korea Institute of Science and Technology (KIST), Korea*.

### Gesture-Based Interface for Connection and Control of Multi-Device in a Tabletop Display Environment

Hyunglae Lee, *Massachusetts Institute of Technology (MIT), United States*; Heesuk Jeong, *NHN Corporation, Korea*; Joongho Lee, Ki-Won Yeom, Ji-Hyung Park, *Korea Institute of Science and Technology (KIST), Korea*.

### Interactive Demonstration of Pointing Gestures for Virtual Trainers

Yazhou Huang, Marcelo Kallmann, *University of California, Merced, United States*.

### Gesture-Controlled User Input to Complete Questionnaires on Wrist-Worn Watches

Oliver Amft, Roman Amstutz, *ETH Zurich, Switzerland*; Asim Smailagic, Dan Siewiorek, *Carnegie Mellon University, United States*; Gerhard Troester, *ETH Zurich, Switzerland*.

### UbiGesture: Customizing and Profiling Hand Gestures in Ubiquitous Environment

Ayman Atia, Shiro Takahashi, Kazuo Misue, *Jiro Tanaka, University of Tsukuba, Japan*.

### Wireless Data Glove for Gesture-Based Robotic Control

Nghia Tran, Hoa Phan, Vincent Dinh, Jeffrey Ellen, Bryan Berg, Jason Lum, *Space & Naval Warfare Systems Center, Pacific (SSC PAC), United States*; Eldridge Alcantara, *University of California, San Diego, United States*; Mike Bruch, Marion Ceruti, Charles Kao, Daniel Garcia, Sunny Fugate, LorRaine Duffy, *Space & Naval Warfare Systems Center, Pacific (SSC PAC), United States*.

### An Approach to Glove-Based Gesture Recognition

Farid Parvini, Dennis McLeod, Cyrus Shahabi, Bahareh Navai, Baharak Zali, Shahram Ghandeharizadeh, *University of Southern California, United States*.

Wednesday 10:30 - 12:30

HCI

**Text, Language and Communication**

Room: Hampton

Chair(s): Christina Alexandris, National & Kapodistrian University of Athens, Greece.

**Brain-Computer Interface (BCI): Towards Understanding Neural Bases of Human-Computer Interaction - II**

Room: Sheffield

Chair(s): Chang Nam, University of Arkansas, United States; Gerwin Schalk, Wadsworth Center, NY State Dept. of Health, United States.

**A Speech-Act Oriented Approach for User-Interactive Editing and Regulation Processes Applied in Written and Spoken Technical Texts**

Christina Alexandris, National & Kapodistrian University of Athens, Greece.  
**Modelling Word Selection in Predictive Text Entry**  
Hamed Sad, Franck Poirier, Université de Bretagne-Sud, France.

**SimulSort: Multivariate Data Exploration Through an Enhanced Sorting Technique**

Inkyoung Hur, Ji Soo Yi, Purdue University, United States.  
**«You've Got IMs!» How People Manage Concurrent Instant Messages**  
Shailendra Rao, Stanford University, United States; Judy Chen, University of California, Irvine, United States; Robin Jeffries, Richard Boardman, Google, Inc., United States.

**Paper to Electronic Questionnaires: Effects on Structured Questionnaire Forms**

Anna Trujillo, NASA Langley Research Center, United States.

**Breaking of the Interaction Cycle: Independent Interpretation and Generation for Advanced Dialogue Management**

David Del Valle-Agudo, Javier Calle-Gómez, Dolores Cuadra-Fernández, Jessica Rivero-Espinosa, Carlos III University of Madrid, Spain.

**Assessing NeuroSky's Usability to Detect Attention Levels in an Assessment Exercise**

Genaro Rebolledo-Mendez, Serious Games Institute, United Kingdom; Ian Dunwell, Coventry University, United Kingdom; Erika Martinez-Miron, National Autonomous University of Mexico, Mexico; Maria Dolores Vargas-Cerdan, Universidad Veracruzana, Mexico; Sara De Freitas, Fotis Liarokapis, Coventry University, United Kingdom; Alma García-Gaona, Universidad Veracruzana, Mexico.

**Effect of Mental Training on BCI Performance**

Lee Fan Tan, Universiti Tunku Abdul Rahman, Malaysia; Ashok Jansari, University of East London, United Kingdom; Shian Ling Keng, Duke University, United States; Sing Yau Goh, Universiti Tunku Abdul Rahman, Malaysia.

**BEXPLORER: Computer and Communication Control Using EEG**

Mina Mikhail, Marian Abdel-Shahid, Mina Guirguis, Nadine Shehad, Baher Soliman, Khaled El-Ayat, American University in Cairo, Egypt.

**A Novel Dry Electrode for Brain-Computer Interface**

Eric Sellers, East Tennessee State University, United States; Peter Turner, QUASAR, United States; Bill Sarnacki, Wadsworth Center, NY State Dept. of Health, United States; Tobin McManus, QUASAR, United States; Theresa Vaughan, Wadsworth Center, NY State Dept. of Health, United States; Rob Matthews, QUASAR, Australia.

**Continuous Control Paradigms for Direct Brain Interfaces**

Melody Moore Jackson, Rudolph Mappus, Evan Barba, Sadir Hussein, Girish Venkatesh, Chetna Shastri, Amichai Israeli, Georgia Institute of Technology, United States.

**Toward Constructing an Electroencephalogram Measurement Method for Usability Evaluation**

Masaki Kimura, Hidetake Uwano, Masao Ohira, Ken-ichi Matsumoto, Nara Institute of Science and Technology, Japan.

EPCE

**Driving Safety and Support**

Room: Towne

Chair(s): Timothy Brown, University of Iowa, United States.

**Night Vision - Reduced Driver Distraction, Improved Safety and Satisfaction**

Klaus Fuchs, Bettina Abendroth, Ralph Bruder, Darmstadt University of Technology, Germany.

**Implementing Human Factors within the Design Process of Advanced Driver Assistance Systems (ADAS)**

Boris Van Waterschoot, Mascha Van der Voort, University of Twente, Netherlands.

**Guiding a Driver's Visual Attention Using Graphical and Auditory Animations**

Tony Poitschke, Florian Laquai, Gerhard Rigoll, Technical University of Munich, Germany.

**A Study on a Method to Call Drivers' Attention to Hazard**

Hiroshi Takahashi, Shonan Institute of Technology, Japan.

**A Survey Study of Chinese Drivers' Inconsistent Risk Perception**

Pei Wang, P.L. Patrick Rau, Tsinghua University, P.R. China; Gavriel Salvendy, Purdue University / Tsinghua University, United States.

**Fundamental Study for Relationship Between Cognitive task and Brain Activity During Car Driving**

Shunji Shimizu, Tokyo University of Science, Japan; Nobuhide Hirai, Jichi Medical University, Japan; Fumikazu Miwakeichi, Chiba University, Japan; Senichiro Kikuchi, Jichi Medical University, Japan; Yasuhito Yoshizawa, Masanao Sato, Tokyo University of Science, Japan; Hiroshi Murata, Interface Co., Ltd, Japan; Eiju Watanabe, Satoshi Kato, Jichi Medical University, Japan.

UAHCI

**Intelligent Interaction for Pervasive Learning**

Room: Pacific Salon One

Chair(s): Andrina Granic, University of Split, Croatia; Vlado Glavinic, University of Zagreb, Croatia.

**Multimodal Interaction for Mobile Learning**

Irina Kondratova, National Research Council, Canada.

**The Potential of the BCI for Accessible and Smart e-Learning**

Ray Adams, Richard Comley, Mahbobeh Ghoreyshi, Middlesex University, United Kingdom.

**Enhancing the Creativity Process by Adding Context Awareness in Creativity Support Tools**

George Sielis, University of Cyprus, Cyprus; Aimilia Tzanavari, University of Nicosia, Cyprus; George Papadopoulos, University of Cyprus, Cyprus.

**Automatically Structuring Text for Audio Learning**

Barbara Leporini, Maria Claudia Buzzi, Marina Buzzi, Giulio Mori, National Council of Research (CNR), Italy.

**User Individual Differences in Intelligent Interaction: Do They Matter?**

Jelena Nakić, Andrina Granic, University of Split, Croatia.

**SeMap: A Concept for the Visualization of Semantics as Maps**

Kawa Nazemi, Matthias Breyer, Christoph Hornung, Fraunhofer, Germany.

**A Study on the Compatibility of Ubiquitous Learning (u-Learning) Systems at University Level**

Martin Ebner, Christian Stickel, Nick Scerbakov, Graz University of Technology, Austria; Andreas Holzinger, Medical University Graz, Austria.

**On Efficiency of Adaptation Algorithms for Mobile Interfaces Navigation**

Vlado Glavinic, University of Zagreb, Croatia; Sandi Ljubic, University of Rijeka, Croatia; Mihael Kukec, College of Applied Sciences Varazdin, Croatia.

Engineering Psychology and Cognitive Ergonomics

Universal Access in Human-Computer Interaction

Wednesday 10:30 - 12:30

## Proposals for New Interface Design

Room: Pacific Salon Two

Chair(s): Toshiki Yamaoka, Wakayama University, Japan.

## Design and Evaluation of Innovative Chord Input for Mobile Phones

Fong-Gong Wu, Chia-Wei Chang, Chien-Hsu Chen, National Cheng Kung University, Taiwan.

## A Proposal of New Interface Based on Natural Phenomena and so on (2)

Ichiro Hirata, Hyogo Prefectural Institute of Technology, Japan; Toshiki Yamaoka, Akio Fujiwara, Sachie Yamamoto, Daijiro Yamaguchi, Mayuko Yoshida, Rie Tutui, Wakayama University, Japan.

## A Study on the Icon Feedback Types of Small Touch Screen for the Elderly

Wang-Chin Tsai, Chang-Franw Lee, National Yunlin University of Science & Technology, Taiwan.

## A Proposal of New Interface Based on Natural Phenomena and so on (1)

Toshiki Yamaoka, Wakayama University, Japan; Ichiro Hirata, Hyogo Prefectural Institute of Technology, Japan; Akio Fujiwara, Sachie Yamamoto, Daijiro Yamaguchi, Mayuko Yoshida, Rie Tutui, Wakayama University, Japan.

## A Study on the Consumers' Brand Cognition and Design Strategy by ZMET

Chen-hao Fan, National Taiwan University of Arts, Taiwan.

## Affordance Conditions of Product Parts in User-Product Interaction

Li-Hao Chen, Chang-Franw Lee, Sy-Gia Kiong, National Yunlin University of Science & Technology, Taiwan.

## Design a Multi-touch Table and Apply to Interior Furniture Allocation

Chien-Hsu Chen, Ken-Hao Nien, Fong-Gong Wu, National Cheng Kung University, Taiwan.

## VMR

### Next Generation of VR - Ultra-Realistic Communication Media

Room: Royal Palm Salon Six

Chair(s): Michitaka Hirose, The University of Tokyo, Japan.

### Development of Realistic Haptic Presentation Media

Yasushi Ikei, Tokyo Metropolitan University, Japan.

### Visual Data Mining in Immersive Virtual Environment based on 4K Stereo Images

Tetsuro Ogi, Yoshisuke Tateyama, So Sato, Keio University, Japan.

### Characterizing the Space by Thermal Feedback through a Wearable Device

Takuji Narumi, The University of Tokyo, Japan; Tomohiro Akagawa, Tokyo University of the Arts, Japan; Young Ah Seong, Michitaka Hirose, The University of Tokyo, Japan.

### Transmission of Information Through Haptic Interaction

Koichi Hirota, Yuichiro Sekiguchi, The University of Tokyo, Japan.

### Development of RFID Textile and Human Activity Detection Applications

Ryoko Ueoka, The University of Tokyo, Japan; Atsui Masuda, Tetsuhiko Murakami, Industrial Technology Center of Fukui Prefecture, Japan; Hideyuki Miyayama, Medical Japan Co., Ltd., Japan; Hidenori Takeuchi, Kazuyuki Hashimoto, UTIC Co., Ltd., Japan; Michitaka Hirose, The University of Tokyo, Japan.

### A Real-World Pointing Device Based on an Optical Communication System

Yuichi Mitsudo, Future University-Hakodate, Japan.

### VR-based Movie Watching Method by Reproduction of Spatial Sensation

Kunihiro Nishimura, Aoi Ito, Tomohiro Tanikawa, Michitaka Hirose, The University of Tokyo, Japan.

## IDGD

### User Experience Design and Research

Room: Royal Palm Salon Five

Chair(s): Paul Fu, Augmentum Inc., United States.

### Innovation Through Customers' Eyes

Marsha Yang, Mayuresh Ektare, TREND MICRO, United States.

### Factors Affecting Online Game Players' Loyalty

Fan Zhao, Florida Gulf Coast University, United States; Xiaowen Fang, DePaul University, United States.

### User Experience Research and Management of Online Advertising and Merchandising

Frank Guo, Barclays Global Investors, United States.

### "Whose rule is it anyway?"

- A Case Study in the Internationalization of User-Configurable Business Rules  
Morgan McCollough, Bridge360, Inc., United States.

### Internationalization and Localization of Websites: Navigation in English Language and Chinese Language Sites

Helen Petrie, Christopher Power, Wei Song, University of York, United Kingdom.

## OCSC

### Usability and Sociability in Computer Games and Virtual Worlds

Room: Pacific Salon Three

Chair(s): Chee Siang Ang, City University London, United Kingdom.

### Game Usability Heuristics (PLAY) For Evaluating and Designing Better Games: The Next Iteration

Heather Desurvire, Behavioristics, United States; Charlotte Wiberg, Umea University, Sweden.

### Collaborative Work in 3D Virtual Environments: A Research Agenda and Operational Framework

Béatrice Hasler, Thierry Buecheler, Rolf Pfeifer, University of Zurich, Switzerland.

### Uncanny as Usability Obstacle

Angela Tinwell, Bolton University, United Kingdom.

### Cheating Behaviors in Online Gaming

Henry Been-Lirn Duh, National University of Singapore, Singapore; Vivian Hsueh Hua Chen, Nanyang Technological University, Singapore.

### EmoHeart: Automation of Expressive Communication of Emotions in Second Life

Alena Neviarouskaya, The University of Tokyo, Japan; Helmut Prendinger, National Institute of Informatics, Japan; Mitsuru Ishizuka, The University of Tokyo, Japan.

### A Life-like Agent Interface System with Second Life Avatars on the OpenSimulator Server

Hiroshi Dohi, Mitsuru Ishizuka, The University of Tokyo, Japan.

### The Effects of Computer Criticism on Users' Perceptions

Yu-chen Hsu, National Tsing Hua University, Taiwan.

Virtual and Mixed Reality

Internationalization, Design and Global Development

Online Communities and Social Computing

Wednesday 10:30 - 12:30

AC

Augmented Cognition

**Understanding Brain, Cognition, and Behavior in Complex Dynamic Environments**

Room: Royal Palm Salon Three  
Chair(s): Scott Kerick, U.S. Army Research Laboratory, United States.

**Wearable & Wireless Brain-Computer Interface and Its Applications**

Chin-Teng Lin, Li-Wei Ko, Che-Jui Chang, Yu-Te Wang, Chia-Hsin Chung, Fu-Shu Yang, National Chiao Tung University, Taiwan; Jeng-Ren Duann, Tzzy-Ping Jung, University of California, San Diego, United States; Jun-Chern Chiou, National Chiao Tung University, Taiwan.

**Directed Components Analysis: An Analytic Method for the Removal of Biophysical Artifacts from EEG Data.**

Phan Luu, Electrical Geodesics, Inc., United States; Robert Frank, University of Oregon, United States; Scott Kerick, U.S. Army Research Laboratory, United States; Don Tucker, Electrical Geodesics, Inc. / University of Oregon, United States.

**Tonic Changes in EEG Power Spectra during Simulated Driving**

Ruey-Song Huang, Tzzy-Ping Jung, Scott Makeig, University of California, San Diego, United States.

**Mind Monitoring via Mobile Brain-Body Imaging**

Scott Makeig, University of California, San Diego, United States.

**Brain Processes and Neurofeedback for Performance Enhancement of Precision Motor Behavior**

Brad Hatfield, Amy Jo Hauffer, Jose Contreras-Vidal, University of Maryland, United States.

**Operational Brain Dynamics: Data Fusion Technology for Neurophysiological, Behavioral, and Scenario Context Information in Operational Environments**

Don Tucker, Electrical Geodesics, Inc. / University of Oregon, United States; Phan Luu, Electrical Geodesics, Inc., United States.

**Understanding Brain, Cognition, and Behavior in Complex Dynamic Environments**

Scott Kerick, Kaleb McDowell, U.S. Army Research Laboratory, United States.

**Applications and Challenges in Neurally-driven System Interfaces - I**

Room: Royal Palm Salon Four  
Chair(s): Denise Nicholson, Cali Fidopiastis, University of Central Florida, United States.

**Bayesian Reconstruction of Perceptual Experiences from Human Brain Activity**

Jack Gallant, Thomas Naselaris, Ryan Prenger, Kendrick Kay, Dustin Stansbury, Michael Oliver, An Vu, Shinji Nishimoto, University of California, Berkeley, United States.

**Physiologically Driven Rehabilitation Using Virtual Reality**

Angela Salva, Antonio Alban, Mark Wiederhold, Brenda Wiederhold, Lingjun Kong, Virtual Reality Medical Center, United States.

**Assessment of Cognitive Neural Correlates for a Functional Near Infrared-based Brain Computer Interface System**

Hasan Ayaz, Patricia Shewokis, Scott Bunce, Maria Schultheis, Banu Onaral, Drexel University, United States.

**Brain-Computer Interaction**

Peter Brunner, Gerwin Schalk, Wadsworth Center, NY State Dept. of Health, United States.

**P300 Based Brain Computer Interfaces: A Progress Report**

Emanuel Donchin, Yael Arbel, University of South Florida, United States.

**Systems and Strategies for Accessing the Information Content of fNIRS Imaging in Support of Noninvasive BCI Applications**

Randall Barbour, Harry Graber, Yong Xu, SUNY Downstate Medical Center, United States; Yaling Pei, NIRx Medical Technologies, United States; Glenn Wylie, Gerald Voelbel, John DeLuca, Kessler Foundation Research Center, United States; Andrei Medvedev, Georgetown University, United States.

HCD

Human Centered Design

**User-Experience Development: Strategy, Tactics, and Maturity Modeling**

Room: Royal Palm Salon Two  
Chair(s): Aaron Marcus, Aaron Marcus and Associates, Inc. (AM+A), United States.

**User Experience Development**

Aaron Marcus, Aaron Marcus and Associates, Inc. (AM+A), United States.

**Corporate User Experience Maturity Model**

Sean Van Tyne, Fair Isaac, United States.

**A Survey of User-Experience Development at Enterprise Software Companies**

Aaron Marcus, Aaron Marcus and Associates, Inc. (AM+A), United States; Jeremy Ashley, Oracle USA, United States; Claus Knapheide, Siemens Corporate Research, United States; Arnie Lund, Microsoft Corporation, United States; Daniel Rosenberg, SAP Labs, United States; Karel Vredenburg, IBM, Canada.

**Validating a Standardized Usability/User-Experience Maturity Model: A Progress Report**

Aaron Marcus, Aaron Marcus and Associates, Inc. (AM+A), United States; Rich Gunther, Ovo Studios, United States; Randy Sieffert, Intel, Inc., United States.

**Usability Maturity: A Case Study in Planning and Designing an Enterprise Application Suite**

Jeremy Ashley, Oracle USA, United States; Kristin Desmond, Oracle Corporation, United States.

**Translating Subjective Data to Objective Measures to Drive Product Design Experience**

Erin Walline, Brad Lawrence, Dell, Inc., United States.

**Rethinking the Context of Use**

Room: Royal Palm Salon One  
Chair(s): Tadashi Kobayashi, Aichi Institute of Technology, Japan.

**Capturing and Restoring the Context of Everyday Work: A Case Study of a Law Office**

Gaston Cangiano, James Hollan, University of California, San Diego, United States.

**Why Taking Medicine is a Chore – an Analysis of Routine and Contextual Factors in the Home**

Wei Kiat Koh, Jamie Ng, Odelia Tan, Institute for Infocomm Research, Singapore; Zelia Tay, Alvin Wong, Singapore Institute of Manufacturing Technology, Singapore; Martin Helander, Nanyang Technological University, Singapore.

**Scenarios in the Heuristic Evaluation of Mobile Devices: Emphasizing the Context of Use**

Jari Varsaluoma, Tampere University of Technology, Finland.

**Influence and Impact Relationship between GIS Users and GIS Interfaces**

Hongmei Wang, Northern Kentucky University, United States.

**Understanding Activity Documentation Work in Remote Mobility Environments**

Alberto Morán, Autonomous University of Baja California (UABC), Mexico; Raul Casillas, CICESE Research Center, Mexico.

**A Photo Correlation Map using Mobile AP II for Scenario-based Design**

Yu-Li Chuang, Makoto Okamoto, Future University-Hakodate, Japan.

Ergonomics and Health Aspects of Work with Computers

## EHAWC

### Information Work Systems

Room: Towne

Chair(s): Wilhelm Bauer, *Fraunhofer, Germany.*

### PC-based Rehabilitation System with Biofeedback

Chih-Fu Wu, Jeh-Jang Liou, *Tatung University, Taiwan.*

### Development of Non-contact Monitoring System of Heart Rate Variability (HRV) - An Approach of Remote Sensing for Ubiquitous Technology -

Satoshi Suzuki, Takemi Matsui, Shinji Gotoh, Yasutaka Mori, *Tokyo Metropolitan University, Japan;* Bonpei Takase, Masayuki Ishihara, *National Defense Medical College, Japan.*

### Understanding Patient User Experience in Obstetric Work Systems

Enid Montague, *University of Wisconsin-Madison, United States.*

### Merging Virtual and Real Worlds – Holistic Concepts for the Office of the Future

Hermann Hartenthaler, *Deutsche Telekom Laboratories, Germany.*

### Bar Coded Medication Administration Systems and Burnout

Ben-Tzion Karsh, *University of Wisconsin-Madison, United States.*

### Increasing Information Worker Productivity through Information Work Infrastructure

Udo-Ernst Haner, Jörg Kelter, Wilhelm Bauer, Stefan Rief, *Fraunhofer, Germany.*

### Vector Keyboard for Touch Screen Devices

Martin Klima, Vaclav Slovacek, *Czech Technical University in Prague, Czech Republic.*

Human Interface and the Management of Information

## HIMI

### Safety of Medication Usage

Room: Sunrise

Chair(s): Michiko Ohkura, *Shibaura Institute of Technology, Japan.*

### The Evaluation of Pharmaceutical Package Design for the Elderly People

Akira Izumiya, Michiko Ohkura, *Shibaura Institute of Technology, Japan;* Fumito Tsuchiya, *Tokyo Medical & Dental University, Japan.*

### A Proposal of a Method to Extract Active Ingredient Names from Package Inserts

Keita Nabeta, Masaomi Kimura, Michiko Ohkura, *Shibaura Institute of Technology, Japan;* Fumito Tsuchiya, *Tokyo Medical & Dental University, Japan.*

### Analysis on Descriptions of Dosage Regimens in Package Inserts of Medicines

Masaomi Kimura, Kazuhiro Okada, Keita Nabeta, Michiko Ohkura, *Shibaura Institute of Technology, Japan;* Fumito Tsuchiya, *Tokyo Medical & Dental University, Japan.*

### The Importance of Information in the Process of Acquisition and Usage of a Medicine for Patient Safety: A Study of the Brazilian Context

Patricia Fujita, Carla Spinillo, *Federal University of Paraná, Brazil.*

### Patient Safety: Contributions from a Task Analysis Study on Medicine Usage by Brazilians

Carla Spinillo, Stephania Padovani, Cristine Lanzoni, *Federal University of Paraná, Brazil.*

### Examination of Evaluation Method for Appearance Similarity of PTP Sheets

Yoshitaka Otsuki, Akira Izumiya, Michiko Ohkura, *Shibaura Institute of Technology, Japan;* Fumito Tsuchiya, *Tokyo Medical & Dental University, Japan.*

### Impact of Healthcare Information Technology Systems on Patient Safety

Byung Cheol Lee, Vincent Duffy, *Purdue University, United States.*

### Advanced Applications

Room: Sunset

Chair(s): Yasufumi Kume, *Kinki University, Japan.*

### Redefining Interoperability: Understanding Police Communication Task Environments

Gyu Kwon, Tonya Smith-Jackson, Charles Bostian, *Virginia Tech, United States.*

### Construction of the Data Save System of the Cusp Surface Analysis Using WEB Application

Yasufumi Kume, Seo Jee Seob, *Kinki University, Japan.*

### Statistics-based Cognitive Human-Robot Interfaces for Board Games -- Let's play!

Frank Wallhoff, Alexander Bannat, Jürgen Gast, Tobias Rehr, Moritz Dausinger, Gerhard Rigoll, *Technical University of Munich, Germany.*

### UbiSOA Dashboard: Integrating the Physical and Digital Domains through Mashups

Edgardo Avilés-López, J. Antonio García-Macías, *CICESE Research Center, Mexico.*

### iFeel\_IM! Emotion Enhancing Garment for Communication in Affect Sensitive Instant Messenger

Dzmitry Tsetserukou, Alena Neviarouskaya, *The University of Tokyo, Japan;* Helmut Prendinger, *National Institute of Informatics, Japan;* Naoki Kawakami, Mitsuru Ishizuka, Susumu Tachi, *The University of Tokyo, Japan.*

### Learning by Design in a Digital World: Students' Attitudes Towards a New Pedagogical Model for Online Academic Learning

Karen Precel, Yoram Eshet-Alkalai, Yael Alberton, *The Open University, Israel.*

### An Approach for the Design of Secure Communication in Embedded Systems

Pavel Ocenasek, *Brno University of Technology, Czech Republic.*

## HCI

### Voice User Interface Design

Room: Garden Salon One

Chair(s): James Lewis, *IBM Software Group, United States.*

Human-Computer Interaction

### A Study on the Design of Voice Navigation of Car Navigation System

Wan-fu Huang, Chih-Fu Wu, Tung-Chen Wu, *Tatung University, Taiwan.*

### Compensate the Speech Recognition Delays for Accurate Speech-Based Cursor Position Control

Qiang Tong, ZiYun Wang, *Hubei Normal University, P.R. China.*

### ADiEU: Toward Domain-Based Evaluation of Spoken Dialog Systems

Jan Kleindienst, Jan Curin, Martin Labsky, *IBM Research, Czech Republic.*

### Reference Model for Quality Assurance of Speech Applications

Cornelia Hipp, Matthias Peissner, *Fraunhofer, Germany.*

### Development of Speech Input Method for Interactive VoiceWeb Systems

Ryuichi Nisimura, *Wakayama University, Japan;* Jumpei Miyake, *Nara Institute of Science and Technology, Japan;* Hideki Kawahara, Toshio Irino, *Wakayama University, Japan.*

Wednesday 13:30 - 15:30

# Parallel Sessions

HCI

**Ubiquitous / Mobile Learning Environment and New User Experience - I - Fundamental Models and Technologies**

Room: Garden Salon Two

Chair(s): Takashi Mitsuishi, *Tohoku University, Japan*; Hitoshi Sasaki, *Takushoku University, Japan*; Kentaro Go, *University of Yamanashi, Japan*.

**Evaluation of Case Studies**

Room: Windsor

Chair(s): Nadine Vigouroux, *Université Paul Sabatier, France*.

**HCI for Medical and Health Practice**

Room: Hampton

Chair(s): Nicos Maglaveras, *Aristotle University of Thessaloniki, Greece*.

**Interacting and Driving**

Room: Sheffield

Chair(s): Bernhard Niedermaier, *BMW Group, Research and Technology, Germany*.

**A Proposal for a Framework for an e-Alumni Program using SNS**

Hiroshi Sano, *Tokyo University of Foreign Studies, Japan*.

**Development of a Simulator of Abacus; Ancient Analog Calculator on a Mobile Phone as a Teaching Material**

Kenta Saito, Yuki Makita, *Takushoku University, Japan*; Vu Quang, *Hitachi Software Engineering Co., Ltd., Japan*; Hitoshi Sasaki, *Takushoku University, Japan*.

**Development of a Visualised Sound Simulation Environment: An e-Approach to a Constructivist Way of Learning**

Jingjing Zhang, *University of Oxford, United Kingdom*; Beau Lotto, Ilias Bergstom, *Lefkothea Andreou, University College London, United Kingdom*; Youzou Miyadera, Setsuo Yokoyama, *Tokyo Gakugei University, Japan*.

**Investigating the Run Time Behavior of Distributed Applications by Using Tiny Java Virtual Machines with Wireless Communications**

Tsuyoshi Miyazaki, Takayuki Suzuki, Fujio Yamamoto, *Kanagawa Institute of Technology, Japan*.

**Supporting Learners in Adaptive Learning Environments through the Enhancement of the Student Model**

Luca Mazzola, Riccardo Mazza, *University of Lugano, Switzerland*.

**Adaptation Decisions and Profiles Exchange Among Open Learning Management Systems Based on Agent Negotiations and Machine Learning Techniques**

Silvia Margarita Baldiris Navarro, Ramón Fabregat Gesa, Carolina Mejía Corredor, Sergio Gómez Ardila, *Universitat de Girona, Spain*.

**A Usability Evaluation of Public Icon Interface**

Sungyoung Yoon, Jonghoon Seo, Jun Young Yoon, *Yonsei University, Korea*; Seungchul Shin, *Samsung Electronics Co., Ltd, Korea*; Tack-Don Han, *Yonsei University, Korea*.

**Comparing the Usability of the Icons and Functions between IE6.0 and IE7.0**

Chiuhsiang Joe Lin, Min-Chih Hsieh, Hui-Chi Yu, Ping-Jung Tsai, Wei-Jung Shiang, *Chung Yuan Christian University, Taiwan*.

**Heuristic Evaluation of Mission-Critical Software Using a Large Team**

Edward Buxton, Alvin Tarrell, Ann Fruhling, *University of Nebraska at Omaha, United States*.

**Evaluating a Personal Communication Tool: Sidebar**

Malena Mesarina, Jhilmil Jain, Craig Sayers, Tyler Close, John Recker, *Hewlett-Packard Labs, United States*.

**Evaluating User Effectiveness in Exploratory Search with TouchGraph Google Interface**

Kemal Efe, Sabriye Ozerturk, *University of Louisiana, United States*.

**Flight Searching - a Comparison of Two User-Interface Design Strategies**

Antti Pirhonen, Niko Kotilainen, *University of Jyväskylä, Finland*.

**BigKey: A Virtual Keyboard for Mobile Devices**

Khaldoun Al Faraj, Mustapha Mojahid, *Université de Toulouse, France*; Nadine Vigouroux, *Université Paul Sabatier, France*.

**Towards Standardized Pen-Based Annotation of Breast Cancer Findings**

Suzanne Kieffer, Annabelle Gouze, Ronald Moncarey, Christian Van Brussel, *Université catholique de Louvain, Belgium*; Jean-François De Wispelaere, Françoise Kayser, *Cliniques universitaires de Mont-Godinne, Belgium*; Benoit Macq, *Université catholique de Louvain, Belgium*.

**An Information Visualization Approach to Hospital Shifts Scheduling**

Carmelo Ardito, Paolo Buono, Maria Francesca Costabile, Rosa Lanzilotti, Adalberto Simeone, *University of Bari, Italy*.

**Design of a Web Intervention to Change Youth Smoking Habits**

Kim Nee Goh, Yoke Yie Chen, Emy Elyanee Mustapha, Subarna Sivapalan, Sharina Nordin, *Universiti Teknologi PETRONAS, Malaysia*.

**Computer-Based Learning to Improve Breast Cancer Detection Skills**

Yan Chen, Alastair Gale, Hazel Scott, *Loughborough University, United Kingdom*; Andrew Evans, Jonathan James, *Nottingham Breast Institute, United Kingdom*.

**Human Computer Interaction in Virtual Standardized Patient Systems**

Patrick Kenny, Thomas Parsons, Albert "Skip" Rizzo, *University of Southern California, United States*.

**Developing a Nomenclature for EMR Errors**

Win Phillips, Yang Gong, *University of Missouri, United States*.

**Common Interaction Schemes for In-Vehicle User-Interfaces**

Simon Nestler, Marcus Tönnis, Gudrun Klinker, *Technical University of Munich, Germany*.

**Augmented Interaction and Visualization in the Automotive Domain**

Roland Spies, Markus Ablassmeier, Heiner Bubbs, *Technical University of Munich, Germany*; Werner Hamberger, *AUDI AG, Germany*.

**Interface Development for Early Notification Warning System: Full Windshield Head-Up Display Case Study**

Vassilis Charissis, Stylianos Papanastasiou, George Vlachos, *University of Glasgow, United Kingdom*.

**Developing a Validation Methodology for Educational Driving Simulators and a Case Study**

Hatice Sancar, Kursat Cagiltay, Veyssi Isler, Gizem Tamer, Neslihan Ozmen, Utkan Eryilmaz, *Middle East Technical University, Turkey*.

**Agent-Based Driver Abnormality Estimation**

Tony Poitschke, Florian Laquai, Gerhard Rigoll, *Technical University of Munich, Germany*.

**Dynamic Maps for Future Navigation Systems: Agile Design Exploration of User Interface Concepts**

Volker Paelke, *Leibniz Universität Hannover, Germany*; Karsten Nebe, *University of Paderborn, Germany*.

Wednesday 13:30 - 15:30

<p><b>HCI in Social Science: From the Perspective of the Communication - II</b></p> <p><i>Room: Crescent</i></p> <p>Chair(s): Donghun Chung, Kwangwoon University, Korea.</p>
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<p><b>Are We Trapped by Majority Influences in Electronic Word-of-Mouth?</b></p> <p>Yu Tong, Yingqin Zhong, National University of Singapore, Singapore.</p> <p><b>The Appropriation of Information and Communication Technology: A Cross-Cultural Perspective</b></p> <p>Jose Rojas, Matthew Chalmers, University of Glasgow, United Kingdom.</p> <p><b>Expression of Personality through Avatars: Analysis of Effects of Gender and Race on Perceptions of Personality</b></p> <p>Jennifer Cloud-Buckner, Michael Sellick, Bhanuteja Sainathuni, Betty Yang, Jennie Gallimore, Wright State University, United States.</p> <p><b>CLURD: A New Character-Inputting System Using One 5-Way Key Module</b></p> <p>Hyunjin Ji, CLURD, Korea; Taeyong Kim, Kyunghee University, Korea.</p> <p><b>Causal Links of Presence</b></p> <p>Donghun Chung, Kwangwoon University, Korea; Chae Hwan Kim, Tongmyoung University, Korea.</p> <p><b>ConvoCons: Encouraging Affinity on Multitouch Interfaces</b></p> <p>Michael Oren, Stephen Gilbert, Iowa State University, United States.</p> <p><b>BunBunMovie: Scenario Visualizing System Based on 3-D Character</b></p> <p>Tomoya Matsuo, Takashi Yoshino, Wakayama University, Japan.</p>
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<p><b>Engineering Psychology and Cognitive Ergonomics</b></p> <p><b>EPCE</b></p> <p><b>Transport Automation</b></p> <p><i>Room: Royal Palm Salon Six</i></p> <p>Chair(s): Mark Young, Brunel University, United Kingdom.</p> <p><b>Design for Smart Driving: A Tale of Two Interfaces</b></p> <p>Mark Young, Stewart Birrell, Neville Stanton, Brunel University, United Kingdom.</p> <p><b>A Design and Training Agenda for the Next Generation of Commercial Aircraft Flight Deck</b></p> <p>Don Harris, Cranfield University, United Kingdom.</p> <p><b>Applying the «Team player» Approach on Car Design</b></p> <p>Staffan Davidsson, Volvo Cars Corporation, Sweden; Håkan Alm, Luleå University of Technology, Sweden.</p> <p><b>Understanding the Impact of Rail Automation</b></p> <p>Sarah Sharples, Nora Balfe, David Golightly, Laura Millen, The University of Nottingham, United Kingdom.</p> <p><b>Use of High-Fidelity Simulation to Evaluate Driver Performance with Vehicle Automation Systems</b></p> <p>Timothy Brown, Jane Moeckli, Dawn Marshall, University of Iowa, United States.</p> <p><b>New HMI Concept for Motorcycles - the Saferider Approach</b></p> <p>Frederik Diederichs, Fraunhofer, Germany; Marco Fontana, PERCRO - Scuola Superiore Sant'Anna, Italy; Giacomo Bencini, University of Florence, Italy; Stella Nikolaou, Centre for Research and Technology Hellas (CERTH), Greece; Roberto Montanari, Andrea Spadoni, University of Modena and Reggio Emilia, Italy; Harald Widroither, Fraunhofer, Germany; Niccolo Baldanzini, University of Florence, Italy.</p> <p><b>Using Acoustic Sensor Technologies To Create A More Terrain Capable Unmanned Ground Vehicle</b></p> <p>Siddharth Odedra, Stephen Prior, Mehmet Karamanoglu, Mehmet Ali Erbil, Middlesex University, United Kingdom; Siu-Tsen Shen, National Formosa University, Taiwan.</p>
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<p><b>UAHCI</b></p> <p><b>Inherent Accessibility in Software Design, Development and Assessment</b></p> <p><i>Room: Pacific Salon One</i></p> <p>Chair(s): Evangelos Bekiaris, Centre for Research and Technology Hellas (CERTH), Greece.</p> <p><b>A Semantic Accessibility Assessment Environment for Design and Development for the Web</b></p> <p>Konstantinos Votis, Centre for Research and Technology Hellas (CERTH), Greece; Rui Lopes, University of Lisbon, Portugal; Dimitrios Tzouvaras, Centre for Research and Technology Hellas (CERTH), Greece; Luis Carriço, University of Lisbon, Portugal; Spiridon Likothanassis, University of Patras, Greece.</p> <p><b>Evaluation Framework Towards All Inclusive Mainstream ICT</b></p> <p>Maria Gemou, Evangelos Bekiaris, Centre for Research and Technology Hellas (CERTH), Greece.</p> <p><b>Towards Open Access Accessibility Everywhere: the AEGIS Concept</b></p> <p>Peter Korn, Sun Microsystems, Inc., United States; Evangelos Bekiaris, Maria Gemou, Centre for Research and Technology Hellas (CERTH), Greece.</p> <p><b>A UCD Approach Towards the Design, Development and Assessment of Accessible Applications in a Large Scale European Integrated Project</b></p> <p>Karel Van Isacker, European Platform for Rehabilitation (EPR), Belgium; Karin Slegers, Katholieke Universiteit Leuven, Belgium; Maria Gemou, Evangelos Bekiaris, Centre for Research and Technology Hellas (CERTH), Greece.</p> <p><b>An Open Source Tool for Simulating a Variety of Vision Impairments in Developing Swing Applications</b></p> <p>Theofanis Oikonomou, Konstantinos Votis, Dimitrios Tzouvaras, Centre for Research and Technology Hellas (CERTH), Greece; Peter Korn, Sun Microsystems, Inc., United States.</p> <p><b>A Harmonised Methodology Towards Measuring Accessibility</b></p> <p>Alexandros Mourouzis, Grammati-Eirini Kastori, Konstantinos Votis, Evangelos Bekiaris, Dimitrios Tzouvaras, Centre for Research and Technology Hellas (CERTH), Greece.</p> <p><b>Integrating HCI in a Web Accessibility Engineering Approach</b></p> <p>Lourdes Moreno, Paloma Martinez, Belen Ruiz-Mezcua, Carlos III University of Madrid, Spain.</p>
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<p><b>Human, Computer &amp; Environment</b></p> <p><i>Room: Pacific Salon Two</i></p> <p>Chair(s): Jerzy Charytonowicz, Wrocław University of Technology, Poland.</p> <p><b>Evolutionary Changes in the Traditional Ergonomics</b></p> <p>Jerzy Charytonowicz, Wrocław University of Technology, Poland.</p> <p><b>HCI Standards for Handicapped</b></p> <p>Zbigniew Wisniewski, Aleksandra Polak-Sopinska, Technical University of Lodz, Poland.</p> <p><b>The Analysis and Assessment of Adjustment of Selected Web Sites and Web Browsers to the Needs of People with Disabilities</b></p> <p>Aleksandra Polak-Sopinska, Zbigniew Wisniewski, Technical University of Lodz, Poland.</p> <p><b>Ergonomic Issues in the Material Re-use Process</b></p> <p>Maciej Skowronski, Jerzy Charytonowicz, Wrocław University of Technology, Poland.</p> <p><b>Thermal Protection of Residential Buildings in the Period of Energy Crisis and its Influence on Comfort of Living</b></p> <p>Przemyslaw Nowakowski, Wrocław University of Technology, Poland.</p>
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# Parallel Sessions

## IDGD

### Cross-Cultural User-Interface Design

Room: Royal Palm Salon Five

Chair(s): Aaron Marcus, Aaron Marcus and Associates, Inc. (AM+A), United States.

### Balancing Separateness and Jointness of Money in Relationships: The Design of Bank Accounts in Australia and India

Supriya Singh, RMIT University, Australia.

### The Impact of Culture on the Design of Arabic Websites

Aaron Marcus, Aaron Marcus and Associates, Inc. (AM+A), United States; Sundus Hamoodi, Arab Academy for Banking and Financial Science, Jordan.

### Exploring the Influences of Individualism-Collectivism on Individual's Perceived Participation Equality in Virtual Learning Teams

Yingqin Zhong, Na Liu, John Lim, National University of Singapore, Singapore.

### Cultural Representation for Multi-Culture Interaction Design

Javed Sheikh, Bob Fields, Elke Duncker, Middlesex University, United Kingdom.

### Designing for a Dialogic View of Interpretation in Cross-Cultural IT Design

Huatong Sun, University of Miami, United States.

### Intercultural Usability Surveys: Do People Always Tell "The Truth"?

Emilie Gould, Empire State College, United States.

### Cross-Cultural Analysis of Social Network Services in Japan, Korea, and the USA

Aaron Marcus, Niranjan Krishnamurthi, Aaron Marcus and Associates, Inc. (AM+A), United States.

## AC

### Rugged Wearable Sensor Systems for Reliable Classification of Physiological Data

Room: Royal Palm Salon Three

Chair(s): Rob Matthews, QUASAR, Australia.

### In-Helmet Oxy-hemoglobin Change Detection Using Near-Infrared Sensing

Erin Nishimura, Chris Russell, J. Patrick Stautzenberger, Harvey Ku, Hunter Downs, Archinoetics LLC, United States.

### Quantifying the Feasibility of Compressive Sensing in Portable Electroencephalography Systems

Amir Abdulghani, Alexander Casson, Esther Rodriguez-Villegas, Imperial College London, United Kingdom.

### Potential and Challenges of Body Area Networks for Affective Human Computer Interaction

Julien Penders, Bernard Grundlehner, Holst Centre / IMEC-NL, Netherlands; Ruud Vullers, Bert Gyselinckx, IMEC-NL, Netherlands.

### Detecting Frontal EEG Activities with Forehead Electrodes

Jeng-Ren Duann, University of California, San Diego, United States; Po-Chuan Chen, Li-Wei Ko, National Chiao Tung University, Taiwan; Ruey-Song Huang, Tzyy-Ping Jung, University of California, San Diego, United States; Chin-Teng Lin, National Chiao Tung University, Taiwan.

### Parsimonious Identification of Physiological Indices for Monitoring Cognitive Fatigue

Lance Myers, Hunter Downs, Archinoetics LLC, United States.

### Building Dependable EEG Classifiers for the Real World - It's Not Just About the Hardware

Gene Davis, Djordje Popovic, Robin Johnson, Chris Berka, Mirko Mitrovic, Advanced Brain Monitoring, Inc., United States.

### Applications and Challenges in Neurally-driven System Interfaces - II

Room: Royal Palm Salon Four

Chair(s): Denise Nicholson, Cali Fidopiastis, University of Central Florida, United States.

### Predicting Intended Movement Direction Using EEG from Human Posterior Parietal Cortex

Yijun Wang, Scott Makeig, University of California, San Diego, United States.

### P300 Based Single Trial Independent Component Analysis on EEG Signal

Kun Li, Ravi Sankar, Yael Arbel, Emanuel Donchin, University of South Florida, United States.

### Functional Near-Infrared Spectroscopy and Electroencephalography: A Multimodal Imaging Approach

Anna Merzagora, Meltem Izzetoglu, Drexel University, United States; Robi Polikar, Rowan University, United States; Valerie Weisser, Banu Onaral, Maria Schultheis, Drexel University, United States.

### Goal-oriented Control with Brain-Computer Interface

Guenter Edlinger, Clemens Holzner, g.tec Guger Technologies OEG, Austria; Christoph Groenegrass, Universitat Politècnica de Catalunya, Spain; Christoph Guger, g.tec Guger Technologies OEG, Austria; Mel Slater, Universitat Politècnica de Catalunya, Spain.

### Neurally-Driven Adaptive Decision Aids

Alexandra Geyer, Jared Freeman, Aptima, Inc., United States; Denise Nicholson, Cali Fidopiastis, University of Central Florida, United States; Phan Luu, Electrical Geodesics, Inc., United States; Joseph Cohn, DARPA/DSO, United States.

## DHM

### Supporting User-centred Design through Human Modelling Applications

Room: Pacific Salon Three

Chair(s): Russell Marshall, Steve Summerskill, Loughborough University, United Kingdom.

### Application of Human Modelling in Health Care Industry

Lars Hanson, Lund University, Sweden; Dan Högberg, Daniel Lundström, University of Skövde, Sweden; Maria Warell, ArjoHuntleigh R&D Center, Sweden.

### Realistic Elbow Flesh Deformation Based on Anthropometrical Data for Ergonomics Modelling

Setia Hermawati, Russell Marshall, Loughborough University, United Kingdom.

### Incorporating Cognitive Aspects in Digital Human Modeling

Peter Thorvald, Dan Högberg, University of Skövde, Sweden; Keith Case, Loughborough University, United Kingdom.

### HADRIAN: Fitting Trials by Digital Human Modelling

Keith Case, Russell Marshall, Loughborough University, United Kingdom; Dan Högberg, University of Skövde, Sweden; Steve Summerskill, Diane Gyi, Ruth Sims, Loughborough University, United Kingdom.

### Virtual Task Simulation for Inclusive Design

Russell Marshall, Keith Case, Steve Summerskill, Ruth Sims, Diane Gyi, Peter Davis, Loughborough University, United Kingdom.

### Validation of the HADRIAN System Using an ATM Evaluation Case Study

Steve Summerskill, Russell Marshall, Keith Case, Diane Gyi, Ruth Sims, Peter Davis, Loughborough University, United Kingdom; Phil Day, Charlie Rohan, Steven Birnie, NCR Corporation, Ireland.

### Towards a Visual Representation of the Effects of Reduced Muscle Strength in Older Adults: New Insights and Applications for Design and Healthcare

David Loudon, Alastair Macdonald, The Glasgow School of Art, United Kingdom.

Human Centered Design

**HCD**

**Human-Machine Interaction where the Machine is Not Only a Computer**

Room: Royal Palm Salon Two  
Chair(s): Guy Boy, IHMC / FIT, United States.

**Introduction to the HCI International Session on Human-Machine Interaction where the Machine is Not Only a Computer**

Guy Boy, IHMC / FIT, United States.

**Dynamic Operating Documents for Dynamic Operating Environments**

Barbara Burian, NASA, United States.

**Older Drivers and New In-vehicle Technologies: Adaptation and Long-term Effects**

Anabela Simoes, Marta Pereira, UNIVERSITAS / ISEC, Portugal.

**From Tools to Teammates: Joint Activity in Human-Agent-Robot Teams**

Jeffrey Bradshaw, Paul Feltoich, Matthew Johnson, Maggie Breedy, Larry Bunch, Tom Eskridge, Hyuckchul Jung, James Lott, Andrzej Uszok, Jurriaan Van Diggelen, Florida Institute for Human & Machine Cognition (IHMC), United States.

**Driving and Situation Awareness: A Cognitive Model of Memory Update-Processes**

Josef Krems, University of Technology Chemnitz, Germany; Martin Baumann, TNO Defence, Security and Safety, Germany.

**Participatory Human-Centered Design: User Involvement and Design Cross-Fertilization**

Guy Boy, IHMC / FIT, United States; Nadja Riedel, d-ligo, Germany.

**User Behavior Patterns: gathering, analysis, simulation and prediction**

Lucas Stephane, SUPINFO International University, France.

**User Involvement and Participation in HCD**

Room: Royal Palm Salon One  
Chair(s): Stavroula Ntoa, Foundation for Research & Technology - Hellas (FORTH), Greece.

**Concept Development with Real Users: Involving Customers in Creative Problem Solving**

Mika Nieminen, Mari Tyllinen, Helsinki University of Technology, Finland.

**Playful Holistic Support to HCI Requirements using LEGO Bricks**

Lorenzo Cantoni, Luca Botturi, Marco Faré, University of Lugano, Switzerland; Davide Bolchini, Indiana University - Purdue University Indianapolis, United States.

**The User's Role in the Development Process of a Clinical Information System: An Example in Hemophilia Care**

Leonor Teixeira, Vasco Saavedra, Carlos Ferreira, Beatriz Sousa Santos, University of Aveiro, Portugal.

**Shaping the Future with Users - Futures Research Methods as Tools for User-centered Concept Development**

Mikael Runonen, Petri Mannonen, Helsinki University of Technology, Finland.

**From Novice to Expert - User's Search Approaches for Design Knowledge**

Ding-Bang Luh, Chia-Ling Chang, National Cheng Kung University, Taiwan.

**The Method of User's Requirement Analysis by Participation of the User: Constructing an Information System for Travelers**

Chia-Yin Lin, Makoto Okamoto, Future University-Hakodate, Japan.

**EHAWC**

**New Ways of Office Interior Design: Exploring the Ergonomics and Health Aspects**

Room: Royal Palm Salon Six  
Chair(s): Michelle Robertson, Liberty Mutual Research Institute for Safety, United States; Peter Vink, TNO Work and Employment, Netherlands.

**Usage of Office Chair Adjustments and Controls by Workers Having Shared and Owned Work Spaces.**

Liesbeth Groenesteijn, Merle Blok, Margriet Formanoy, Elsbeth De Korte, Peter Vink, TNO Work and Employment, Netherlands.

**Effects of the Workplace Game: A Case-Study into Anticipating Future Behaviour of Office Workers**

Annelise De Jong, Merlijn Kouprie, Evi De Bruyne, Delft University of Technology, Netherlands.

**Combined Measurement System for the Evaluation of Multi Causal Strain**

Holger Steiner, Dietmar Reinert, BGIA - Institute for Occupational Safety & Health, Germany; Norbert Jung, University of Applied Sciences Bonn-Rhein-Sieg, Germany.

**A Person-Centered Measurement System for Quantification of Physical Activity and Energy Expenditure at Workplaces**

Britta Weber, Ingo Hermanns, Rolf Ellegast, BGIA - Institute for Occupational Safety & Health, Germany; Jens Kleinert, German Sport University Cologne, Germany.

**Unique Stressors of Cross-Cultural Collaboration through ICTs in Virtual Teams**

Niiina Nurmi, Stanford University, United States.

**Varying the Office Work Posture Between Standing, Half-standing and Sitting Results in Less Discomfort**

Peter Vink, TNO Work and Employment, Netherlands; Ineke Konijn, Ergoshop, Netherlands; Ben Jongejan, The Hague University, Netherlands; Monique Berger, Haagse Hogeschool, Netherlands.

**Evaluation of a Functional Film Attached on Top of a Tablet PC**

Yugo Kobayashi, Tatsuya Terada, Toshiyuki Kondo, Masaki Nakagawa, Tokyo University of Agriculture and Technology, Japan.

Ergonomics and Health Aspects of Work with Computers

**HIMI**

**Applications in Knowledge/ Usability Engineering**

Room: Sunrise  
Chair(s): Hidehiko Okada, Kyoto Sangyo University, Japan; Ryosuke Saga, Kanagawa Institute of Technology, Japan.

**Designing Sticky Knowledge-Network SNS for Japanese Science Teachers**

Yoshihisa Wada, Masayuki Sakoda, Hiroshi Tsuji, Yuuki Aoki, Kazuhisa Seta, Osaka Prefecture University, Japan.

**Loopo: Integrated Text Miner for FACT-Graph-based Trend Analysis**

Ryosuke Saga, Kanagawa Institute of Technology, Japan; Hiroshi Tsuji, Osaka Prefecture University, Japan; Kuniaki Tabata, Kanagawa Institute of Technology, Japan.

**Evaluation of Pointing Efficiency on Small Screen Touch User Interfaces**

Ryosuke Fujioka, Kobe Sogo Sokki Co. Ltd., Japan; Takayuki Akiba, Hidehiko Okada, Kyoto Sangyo University, Japan.

**Investigation on Relation between Index of Difficulty in Fitts' Law and Device Screen Sizes**

Hidehiko Okada, Takayuki Akiba, Kyoto Sangyo University, Japan; Ryosuke Fujioka, Kobe Sogo Sokki Co. Ltd., Japan.

**Web Service Systems for Cooperative Work Support in Knowledge Creation Processes**

Hiroyuki Kojima, Hiroshima Institute of Technology, Japan; Kentaro Funaki, Hi-Elecom Co., Ltd., Japan; Tsuyoshi Inoue, Hiroshima Institute of Technology, Japan.

**A Coauthoring Method of Keyword Dictionaries for Knowledge Combination on Corporate Discussion Web Sites**

Shinji Takao, Tadashi Iijima, Akito Sakurai, Keio University, Japan.

**Representation Method for Engineering Perspective**

Gaku Ishii, Masatake Sakuma, TOSHIBA Corporation, Japan.

Human Interface and the Management of Information

Wednesday 16:00 - 18:00

# Parallel Sessions

## HIMI

### Mobile Interactions

Room: Sunset

Chair(s): Hiroshi Tamura, Tamura Institute for Human Interface, Japan.

### Visualization

Room: Towne

Chair(s): Kazuo Misue, University of Tsukuba, Japan.

### Usefulness of Mobile Information Provision Systems Using Graphic Text - Visibility of Graphic Text on Mobile Phones

Tomoyuki Watanabe, Aichi Gakuin University, Japan; Masako Omori, Kobe Women's University, Japan; Satoshi Hasegawa, Nagoya Bunri University, Japan; Shohei Matsunuma, Nagoya Institute of Technology, Japan; Masaru Miyao, Nagoya University, Japan.

### Influence of Vertical Length of the Characters on Readability in Mobile Phone

Masako Omori, Kobe Women's University, Japan; Satoshi Hasegawa, Nagoya Bunri University, Japan; Tomoyuki Watanabe, Aichi Gakuin University, Japan; Shohei Matsunuma, Nagoya Institute of Technology, Japan; Masaru Miyao, Nagoya University, Japan.

### Legible Character Size on Mobile Terminal Screens: Estimation Using Pinch-In/Out on the iPod Touch Panel

Satoshi Hasegawa, Nagoya Bunri University, Japan; Masako Omori, Kobe Women's University, Japan; Tomoyuki Watanabe, Aichi Gakuin University, Japan; Shohei Matsunuma, Nagoya Institute of Technology, Japan; Masaru Miyao, Nagoya University, Japan.

### How Mobile Interaction Motivates Students in a Class?

Akinobu Ando, Miyagi University of Education, Japan; Kazunari Morimoto, Kyoto Institute of Technology, Japan.

### Empirical Evaluation of Throwing Method to Move Object for Long Distance in 3D Information Space on Mobile Device

Yu Shibuya, Keiichiro Nagatomo, Kazuyoshi Murata, Itaru Kuramoto, Yoshihiro Tsujino, Kyoto Institute of Technology, Japan.

### A Comparison of Artifact Reduction Methods for Real-time Analysis of fNIRS Data

Takayuki Nozawa, Toshiyuki Kondo, Tokyo University of Agriculture and Technology, Japan.

### Brain Activities Supporting Finger Operations, Analyzed by Neuro-NIRS

Miki Fuchigami, Akira Okada, Osaka City University, Japan; Hiroshi Tamura, Tamura Institute for Human Interface, Japan.

### Event Extraction and Visualization for Obtaining Personal Experiences from Blogs

Yoko Nishihara, The University of Tokyo, Japan; Keita Sato, Wataru Sunayama, Hiroshima City University, Japan.

### Efficient Annotation Visualization Using Distinctive Features

Seok Kyoo Kim, Sung Hyun Moon, Seoul National University, Korea; Jun Park, Hongik University, Korea; Sang Yong Han, Seoul National University, Korea.

### COBRA - A Visualization Solution to Monitor and Analyze Consumer Generated Medias

Amit Behal, Julia Grace, Linda Kato, Ying Chen, IBM Almaden Research Center, United States; Shixia Liu, Weijia Cai, Weihong Qian, IBM Research, P.R. China.

### A Multiple-aspects Visualization Tool for Exploring Social Networks

Jie Gao, Kazuo Misue, Jiro Tanaka, University of Tsukuba, Japan.

### Industrial E-commerce and Visualization of Products: 3D Rotation versus 2D Metamorphosis

Francisco Cipolla-Ficarra, Miguel Cipolla-Ficarra, Alaiipo & Ainci, Italy; Daniel Giulianelli, Universidad Nacional de La Matanza, Argentina.

### Minato : Integrated Visualization Environment for Embedded Systems Learning

Yosuke Nishino, Hachioji Soshi High School, Japan; Eiichi Hayakawa, Takushoku University, Japan.

## HCI

### Affective Technology towards Affective Society

Room: Hampton

Chair(s): Hiroyuki Umemuro, Tokyo Institute of Technology, Japan.

### Everyday Life Computing

Room: Sheffield

Chair(s): Itiro Sii, Ochanomizu University, Japan.

### Affective Technology, Affective Management, towards Affective Society

Hiroyuki Umemuro, Tokyo Institute of Technology, Japan.

### Influence of User Experience on Affectiveness

Ryoko Fukuda, Keio University, Japan.

### Extracting High-Order Aesthetic and Affective Components From Composer's Writings

Akifumi Tokosumi, Hajime Murai, Tokyo Institute of Technology, Japan.

### Productive Love: A New Proposal for Designing Affective Technology

Ramon Solves Pujol, Hiroyuki Umemuro, Tokyo Institute of Technology, Japan.

### Design Creation Based on KANSEI in Toshiba

Yosoko Nishizawa, Kanya Hiroi, TOSHIBA Corporation, Japan.

### Emotional Smart Materials

Akira Wakita, Midori Shibutani, Kohei Tsuji, Keio University, Japan.

### Relationship-Enhancer: Interactive Recipe in Kitchen Island

Tsai-Yun Mou, Kun Shan University, Taiwan; Tay-Sheng Jeng, Chun-Heng Ho, National Cheng Kung University, Taiwan.

### Motion Capture System Using an Optical Resolver

Takuji Tokiwa, The University of Tokyo, Japan; Masashi Yoshidzumi, University of Electro-Communications, Japan; Hideaki Nii, The University of Tokyo, Japan; Maki Sugimoto, Masahiko Inami, Keio University, Japan.

### Front Environment Recognition of Personal Vehicle Using the Image Sensor and Acceleration Sensors for Everyday Computing

Takahiro Matsui, Takeshi Imanaka, Yasuyuki Kono, Kwansei Gakuin University, Japan.

### Designed to Fit: Challenges of Interaction Design for Clothes Fitting Room Technologies

Bo Begole, Takashi Matsumoto, Palo Alto Research Center (PARC), United States; Wei Zhang, Oregon State University, United States; Nicholas Yee, Juan Liu, Maurice Chu, Palo Alto Research Center (PARC), United States.

### Smart Makeup Mirror: Computer-Augmented Mirror to Aid Makeup Application

Eriko Iwabuchi, Maki Nakagawa, Itiro Sii, Ochanomizu University, Japan.

### Time-Oriented Interface Design: Picking the Right Time and Method for Information Presentation

Keita Watanabe, Kei Sugawara, Shota Matsuda, Michiaki Yasumura, Keio University, Japan.

### Communication Grill/Salon: Hybrid Physical/Digital Artifacts for Stimulating Spontaneous Real World Communication

Koh Sueda, The University of Tokyo, Japan; Koji Ishii, Nippon Telegraph and Telephone Corporation, Japan; Takashi Miyaki, Jun Rekimoto, The University of Tokyo, Japan.

### Development of an Emotional Interface for Sustainable Water Consumption in the Home

Mehdi Ravandi, Jon Mok, Mark Chignell, University of Toronto, Canada.

Human-Computer Interaction

Wednesday 16:00 - 18:00

<p><b>Usability for Bio and Health Informatics</b>  <i>Room: Galleria One</i>                  Chair(s): Anthony Faiola, Davide Bolchini, <i>Indiana University - Purdue University Indianapolis, United States.</i></p>	<p><b>Ubiquitous / Mobile Learning Environment and New User Experience - II - Practices and Evaluations</b>  <i>Room: Galleria Two</i>                  Chair(s): Takashi Mitsuishi, <i>Tohoku University, Japan</i>; Hitoshi Sasaki, <i>Takushoku University, Japan</i>; Kentaro Go, <i>University of Yamanashi, Japan.</i></p>	<p><b>Cross-Cultural Issues in Interaction Design</b>  <i>Room: Crescent</i>                  Chair(s): Xianghong Sun, <i>Chinese Academy of Sciences, P.R. China.</i></p>	<p><b>Interaction and Collaboration</b>  <i>Room: Windsor</i>                  Chair(s): James Sullivan, <i>University of Colorado at Boulder, United States.</i></p>
<p><b>New Health Information Systems (HIS) Quality-in-Use Model Based on the GQM Approach and HCI Principles</b>                  Reem Al-Nanah, <i>Hana Al-Nuaim, King Abdul Aziz University, Saudi Arabia</i>; Olga Ormandjieva, <i>Concordia University, Canada.</i></p> <p><b>A Novel Visualization Tool for Evaluating Medication Side-Effects in Multi-Drug Regimens</b>                  Jon Duke, Anthony Faiola, Hadi Kharrazi, <i>Indiana University - Purdue University Indianapolis, United States.</i></p> <p><b>Healthcare Game Design: Behavioral Modeling of Serious Gaming Design for Children with Chronic Diseases</b>                  Hadi Kharrazi, Anthony Faiola, Joseph Defazio, <i>Indiana University - Purdue University Indianapolis, United States.</i></p> <p><b>Heuristic Evaluations of Bioinformatics Tools: A Development Case</b>                  Barbara Mirel, Zach Wright, <i>University of Michigan, United States.</i></p> <p><b>Designing Usable Bio-Information Architectures</b>                  Davide Bolchini, <i>Indiana University - Purdue University Indianapolis, United States</i>; Anthony Finkelstein, <i>University College London, United Kingdom</i>; Paolo Paolini, <i>Politecnico di Milano, Italy.</i></p>	<p><b>A Basic Study on a Drawing - Learning Support System in the Networked Environment</b>                  Takashi Nagai, Mizue Kayama, Kazunori Itoh, <i>Shinshu University, Japan.</i></p> <p><b>A Language Learning System Utilizing RFID Technology for Total Physical Response Activities</b>                  Harumi Kashiwagi, <i>Kobe University, Japan</i>; Yan Xue, <i>Kobelco Systems Corporation, Japan</i>; Yi Sun, Min Kang, Kazuhiro Ohtsuki, <i>Kobe University, Japan.</i></p> <p><b>WebELS: A Content-Centered E-Learning Platform for Postgraduate Education in Engineering</b>                  Haruki Ueno, Zheng He, Jingxia Yue, <i>National Institute of Informatics, Japan.</i></p> <p><b>The Concept of IMPRESSION; an Interactive Instruction System and Its Practice for Real-Time Distance Lessons Between U.S. and Japan</b>                  Takashi Mitsuishi, Fumiko Konno, <i>Tohoku University, Japan</i>; Yuki Higuchi, <i>PRO&amp;BSC Inc., Japan</i>; Kentaro Go, <i>University of Yamanashi, Japan.</i></p> <p><b>Development of Ubiquitous On-Demand Study Support Environment for Nursing Students</b>                  Yukie Majima, Yumiko Nakamura, Yasuko Maekawa, <i>Osaka Prefecture University, Japan</i>; Yoichiro So, <i>Kobelco Systems Corporation, Japan.</i></p> <p><b>Supporting End-User Development of Personalized Mobile Learning Tools</b>                  Marco Sá, Luís Carriço, <i>University of Lisbon, Portugal.</i></p> <p><b>The Effects of Prior Knowledge on the Use of Adaptive Hypermedia Learning Systems</b>                  Fred Mampadi, Sherry Chen, Gheorghita Ghinea, <i>Brunel University, United Kingdom.</i></p>	<p><b>A Study of Information Retrieval of En Route Display of Fire Information on PDA</b>                  Weina Qu, Xianghong Sun, <i>Chinese Academy of Sciences, P.R. China</i>; Thomas Plocher, <i>Honeywell ACS Labs, United States</i>; Li Wang, <i>Chinese Academy of Sciences, P.R. China.</i></p> <p><b>A Study of Fire Information Detection on PDA Device</b>                  Xianghong Sun, Weina Qu, <i>Chinese Academy of Sciences, P.R. China</i>; Thomas Plocher, <i>Honeywell ACS Labs, United States</i>; Li Wang, <i>Chinese Academy of Sciences, P.R. China.</i></p> <p><b>What Do Users Really Do? Experience Sampling in the 21st Century</b>                  Gavin Lew, <i>User Centric, Inc., United States.</i></p> <p><b>What Do Users Want to See? A Content Preparation Study for Consumer Electronics</b>                  Yinni Guo, Robert Proctor, <i>Purdue University, United States</i>; Gavriel Salvendy, <i>Purdue University / Tsinghua University, United States.</i></p> <p><b>The Differences of Aviation Human Factors Between Individualism and Collectivism Culture</b>                  Wen-Chin Li, <i>National Defense University, Taiwan</i>; Don Harris, <i>Cranfield University, United Kingdom</i>; Lon-Wen Li, <i>Ministry of Defence, Taiwan</i>; Thomas Wang, <i>Aviation Safety Council, Taiwan.</i></p> <p><b>Measuring User Performance for Different Interfaces Using a Word Processor Prototype</b>                  Tanya Beelders, Pieter Blignaut, Theo McDonald, Engela Dednam, <i>University of the Free State, South Africa.</i></p>	<p><b>Peer-to-Peer File Sharing Communication Detection System with Traffic Mining and Visualization</b>                  Satoshi Togawa, <i>Shikoku University, Japan</i>; Kazuhide Kanenishi, Yoneo Yano, <i>University of Tokushima, Japan.</i></p> <p><b>Distilling Support Opportunities to Improve Urban Search and Rescue Missions</b>                  Tjerk De Greef, A.H.J. Oomes, <i>Delft University of Technology, Netherlands</i>; Mark Neerincx, <i>TNO Human Factors / Delft University of Technology, Netherlands.</i></p> <p><b>Social-Technical Tools for Collaborative Sensemaking and Sketching</b>                  James Sullivan, Meredith Banasiak, Christopher Messick, <i>University of Colorado at Boulder, United States</i>; Raymond Rimey, <i>Lockheed Martin, United States.</i></p> <p><b>Electronic Glassboard - Conception and Implementation of an Interactive Tele-presence Application</b>                  Peter Thies, <i>Stuttgart Media University, Germany</i>; Benjamin Koehne, <i>University of California, Irvine, United States.</i></p> <p><b>Prompter «●» Based Creating Thinking Support Communication System that Allows Hand-Drawing</b>                  Li Jen Chen, Jun Ohya, <i>Waseda University, Japan</i>; Shunichi Yonemura, <i>Nippon Telegraph and Telephone Corporation, Japan</i>; Sven Forstmann, <i>Waseda University, Japan</i>; Yukio Tokunaga, <i>Shibaura Institute of Technology, Japan.</i></p> <p><b>Understanding the Relationship Between Requirements and Context Elements in Mobile Collaboration</b>                  Sergio Ochoa, <i>University of Chile, Chile</i>; Rosa Alarcon, <i>Pontificia Universidad Católica de Chile, Chile</i>; Luis Guerrero, <i>University of Chile, Chile.</i></p>

# Parallel Sessions

## EPCE

### Cognitive Methods in HCI

Room: Royal Palm Salon Five

Chair(s): Karl Sandberg, *Mid Sweden University, Sweden.*

### Agency Attribution in Human-Computer Interaction

John McEneaney, *Oakland University, United States.*

### CWE: Assistance Environment for the Evaluation Operating a Set of Variations of the Cognitive Walkthrough Ergonomic Inspection Method

Thomas Mahatody, Christophe Kolski, Mouldi Sagar, *University of Valenciennes and Hainaut-Cambresis, France.*

### A Dynamic Task Representation Method for a Virtual Reality Application

Maria Chiara Leva, Alison Kay, Fabio Mattei, *Trinity College Dublin, Ireland*; Tom Kontogiannis, *Technical University of Crete, Greece*; Massimiliano De Ambroggi, Sam Cromie, *Trinity College Dublin, Ireland.*

### An Investigation of Function Based Design Considering Affordances in Conceptual Design of Mechanical Movement

Ying-Chieh Liu, *Chang Gung University, Taiwan*; Su-Ju Lu, *National Taipei University, Taiwan.*

### Effects of Report Order on Identification on Multidimensional Stimulus: Color and Shape

I-hsuan Shen, *Chang Gung University, Taiwan*; Kong-King Shieh, *National Taiwan University of Science & Technology, Taiwan.*

### Sensing Directionality in Tangential Haptic Stimulation

Greg Placencia, Mansour Rahimi, Behrokh Khoshnevis, *University of Southern California, United States.*

### Acceptance of e-Invoicing in SMEs

Karl Sandberg, Olof Wahlberg, *Mid Sweden University, Sweden*; Yan Pan, *MTO-kompetens, Sweden.*

## UAHCI

### Support Independent Living for Older People: Applications and Integrations

Room: Pacific Salon One

Chair(s): Qin Gao, P.L. Patrick Rau, *Tsinghua University, P.R. China.*

### Study on Motivation in Healthcare Treatment using a Networked Healthcare Guidance System

Kaori Fujimura, Masahiro Shiraishi, Kenji Ogura, Yuji Maeda, *Nippon Telegraph and Telephone Corporation, Japan.*

### Development of Open Platform Based Adaptive HCI Concepts for Elderly Users

Jan-Paul Leuteritz, Harald Widlroither, *Fraunhofer, Germany*; Alexandros Mourouzis, Maria Panou, *Centre for Research and Technology Hellas (CERTH), Greece*; Margherita Antona, Asterios Leonidis, *Foundation for Research & Technology - Hellas (FORTH), Greece.*

### The OASIS Concept

Evangelos Bekiaris, *Centre for Research and Technology Hellas (CERTH), Greece*; Silvio Bonfiglio, *FIMI Philips, Italy.*

### Use Cases Functionality of the OASIS HCI

Maria Panou, Evangelos Bekiaris, *Centre for Research and Technology Hellas (CERTH), Greece*; Maria Fernanda Cabrera-Umpierrez, Viveca Jiménez Mixco, Maria Teresa Arredondo, *Technical University of Madrid (UPM), Spain.*

### Managing Intelligent Services for People with Disabilities and Elderly People

Julio Abascal, Borja Bonail, Luis Gradeazabal, Alberto Lafuente, Zigor Salvador, *University of the Basque Country, Spain.*

### Intelligent Interface for Elderly Games

Changhoon Park, *Hoseo University, Korea.*

### New Trends in Web Accessibility

Room: Pacific Salon Two

Chair(s): Constantine Stephanidis, George Margetis, *Foundation for Research & Technology - Hellas (FORTH), Greece.*

### MAID: a Multi-platform Accessible Interface Design Framework

Maria Korozzi, Asterios Leonidis, George Margetis, Constantine Stephanidis, *Foundation for Research & Technology - Hellas (FORTH), Greece.*

### Integrating Accessibility and Functional Requirements

Rehema Baguma, *Makerere University, Uganda*; Roger Stone, *Loughborough University, United Kingdom*; Jude Lubega, *Makerere University, Uganda*; Th.P. Van der Weide, *Radboud University, Netherlands.*

### WCAG 2.0 for Designers: Beyond Screen Readers and Captions

Loretta Guarino Reid, *Google, Inc., United States*; Andi Snow-Weaver, *IBM, United States.*

### Universal Access to the Internet Web Pages for Users with Special Needs

Pavel Ocenasek, *Brno University of Technology, Czech Republic.*

### Web User Interface Design Strategy: Designing for Device Independence

Panagiotis Karampelas, *Hellenic American University, Greece*; Ioannis Basdekis, Constantine Stephanidis, *Foundation for Research & Technology - Hellas (FORTH), Greece.*

### Designing Universally Accessible Networking Services for a Mobile Personal Assistant

Ioannis Basdekis, *Foundation for Research & Technology - Hellas (FORTH), Greece*; Panagiotis Karampelas, *Hellenic American University, Greece*; Voula Doulgeraki, Constantine Stephanidis, *Foundation for Research & Technology - Hellas (FORTH), Greece.*

### Web Accessibility Metrics:

#### Effects of Different

#### Computational Approaches

André Freire, Christopher Power, Helen Petrie, *University of York, United Kingdom*; Eduardo Tanaka, Heloisa Rocha, *University of Campinas - UNICAMP, Brazil*; Renata Fortes, *University of Sao Paulo (USP), Brazil.*

### Universal Access and Mobility

Room: Pacific Salon Three

Chair(s): Alexandros Mourouzis, *Centre for Research and Technology Hellas (CERTH), Greece.*

### Navigation Support for the Walking Wounded

Lucy Gunawan, A.H.J. Oomes, Zhenke Yang, *Delft University of Technology, Netherlands.*

### Indoor Position and Orientation for the Blind

Mauricio Saenz, Jaime Sanchez, *University of Chile, Chile.*

### Sonification System of Maps for Blind - Alternative View

Gintautas Daunys, Vidas Lauruska, *Siauliai University, Lithuania.*

### Identifying Proper Scales on Digital Maps for In-Vehicle Navigation Systems

Anna Wu, Xiaolong Zhang, *Pennsylvania State University, United States.*

### Process and Location-aware Information Service System for the Disabled and the Elderly

Manchul Han, Gunhee Kim, Sehyoung Park, Laehyun Kim, Sungdo Ha, *Korea Institute of Science and Technology (KIST), Korea.*

### RACE: Towards Exploring the Design Dimensions of a Route Assisting and Communicating System for Elderly

Suleman Shahid, *Tilburg University, Netherlands*; Omar Mubin, Abdullah Al Mahmud, *Eindhoven University of Technology (TU/e), Netherlands.*

### Implications of Participatory Design for a Wearable Near and Far Environmental Awareness System (NaFEAS) for Users with Severe Visual Impairments

Si-Jung Kim, Tonya Smith-Jackson, *Virginia Tech, United States*; Kate Carroll, Minyoung Suh, *North Carolina State University, United States*; Na Mi, *Virginia Tech, United States.*

**VMR**

**The Effects of Visual Stimulation**

Room: Royal Palm Salon Four  
Chair(s): Akira Tanaka, *Fukushima University, Japan.*

**Relationship between Physiological Indices and a Subjective Score in Evaluating Visually Induced Motion Sickness**

Norihiro Sugita, Makoto Yoshizawa, *Tohoku University, Japan;* Akira Tanaka, *Fukushima University, Japan;* Makoto Abe, *Tohoku University, Japan;* Shigeru Chiba, *Sharp Corporation, Japan;* Tomoyuki Yambe, Shin-ichi Nitta, *Tohoku University, Japan.*

**Estimation of Visually Induced Motion Sickness from Velocity Component of Moving Image**

Hiroyasu Ujike, *National Institute of Advanced Industrial Sc. & Tech., Japan.*

**Evaluation of Visually-Controlled Task Performance in Three Dimension Virtual Reality Environment**

Chiuhsiang Joe Lin, *Chung Yuan Christian University, Taiwan;* Tien-Lung Sun, *Yuan-Ze University, Taiwan;* Hung-Jen Chen, Ping-Yun Cheng, *Chung Yuan Christian University, Taiwan.*

**An Empirical Study of Assembly Error Detection Using an Augmented Vision System**

Barbara Odenthal, Marcel Mayer, Wolfgang Kabuß, Bernhard Kausch, Christopher Schlick, *RWTH Aachen University, Germany.*

**Evaluation of Non-Photorealistic 3D Urban Models for Mobile Device Navigation**

Christos Gatzidis, *Bournemouth University, United Kingdom;* Vesna Brujic-Okretic, Maria Mastroyanni, *City University London, United Kingdom.*

**OCSC**

**Social Behavior in On-line Communities - I**

Room: Royal Palm Salon Two  
Chair(s): Juhyun Eune, *Seoul National University, Korea.*

**A Visualization Approach for Group Behaviors, Beliefs and Intentions to Support Critical Decisions**

Colleen Phillips, Norman Geddes, *Applied Systems Intelligence, Inc., United States;* Justin Simms, *Missouri State University / ASI Inc., United States.*

**Collective Content as a Facilitator of Community Interaction: A User Study of Four Close-Knit Communities**

Thomas Olsson, *Tampere University of Technology, Finland;* Hannu Toivola, *Nokia, Finland;* Minna Wäljas, Kaisa Väänänen-Vainio-Mattila, *Tampere University of Technology, Finland;* Jaakko Lehtikainen, *Nokia, Finland.*

**Multi-Dimensional Moderation in Online Communities: Experiences with Three Norwegian Sites**

Gheorghita Ghinea, *Brunel University, United Kingdom;* Bendik Bygstad, *Norwegian School of Information Technology, Norway;* Christoph Schmitz, *Norwegian School of Info. Tech. / Brunel University, Norway.*

**A Proposed Movie Recommendation Method using Emotional Word Selection**

Mina Song, Hyun Namgoong, Hong-Gee Kim, Juhyun Eune, *Seoul National University, Korea.*

**Cultural Prescription vs User Perception of Information Architecture for Culture Centred Website: A Case Study on Muslim Online User**

Wan Abdul Rahim Wan Mohd Isa, Nor Laila Md. Noor, Shafie Mehad, *Universiti Teknologi MARA, Malaysia.*

**Social Adaptation of ERP Software: Tagging UI Elements**

Marcus Nitsche, *Otto-von-Guericke-University Magdeburg, Germany;* Martin Kindsmüller, *University of Lübeck, Germany;* Udo Arend, *SAP AG, Germany;* Michael Herczeg, *University of Lübeck, Germany.*

**Universal Navigation Through Social Networking**

Mahsa Ghafourian, Hassan Karimi, Linda Van Roosmalen, *University of Pittsburgh, United States.*

**Designing and Assessing On-line Communities**

Room: Royal Palm Salon Three  
Chair(s): Farid Shirazi, *Ryerson University, Canada.*

**Mobile Social Service Design for Large-Scale Exhibition**

Huanglingzi Liu, Ying Liu, Wei Wang, Bin Wang, *Nokia Research Center, Beijing, P.R. China.*

**Ethnographic User Study and Concept Design for Chinese Migrant Workers' Social Networks**

Jie Wang, Wei Wang, Ying Liu, Xia Wang, *Nokia Research Center, Beijing, P.R. China;* Qihong Chen, *Tsinghua University, P.R. China.*

**Designing Inclusive Social Networks: A Participatory Approach**

Leonelo Almeida, Vânia Paula Almeida Neris, Leonardo Cunha de Miranda, Elaine Cristina Hayashi, Maria Cecilia Calani Baranauskas, *University of Campinas - UNICAMP, Brazil.*

**Why People Use Social Networking Sites**

Petter Bae Brandtzæg, *SINTEF / The University of Oslo, Norway;* Jan Heim, *SINTEF, Norway.*

**Measuring E-Democracy Opportunities: A Global Perspective**

Farid Shirazi, *Ryerson University, Canada.*

**Workflow-based Architecture for Collaborative Video Annotation**

Cristian Hofmann, Nina Hollender, Dieter Fellner, *Darmstadt University of Technology, Germany.*

**Critical Success Factors for Web 2.0 - A Reference Framework**

Pedro Isaías, *Universidade Aberta, Portugal;* Paula Miranda, *Instituto Politécnico de Setúbal, Portugal;* Sara Pifano, *ISR Lab, Portugal.*

**AC**

**Modeling for AugCog Applications**

Room: Royal Palm Salon One  
Chair(s): Robert McCann, *NASA Ames, United States;* Marc Grootjen, *Defense Material Organization, Royal Netherlands Navy, Netherlands.*

**Adaptive Work-Centered and Human-Aware Support Agents for Augmented Cognition in Tactical Environments**

Martijn Neef, Peter-Paul Van Maanen, Peter Petiet, Maartje Spoelstra, *TNO Defence, Security and Safety, Netherlands.*

**Real-Time Emotional State Estimator for Adaptive Virtual Reality Stimulation**

Davor Kukolja, Siniša Popović, Branimir Dropuljić, Marko Horvat, Krešimir Čosić, *University of Zagreb, Croatia.*

**Modeling the Cognitive Task Load and Performance of Naval Operators**

Mark Neerincx, *TNO Human Factors / Delft University of Technology, Netherlands;* Stefan Kennedie, *TNO Human Factors, Netherlands;* Marc Grootjen, *Defense Material Organization, Royal Netherlands Navy, Netherlands;* Franc Grootjen, *NICI, Radboud University Nijmegen, Netherlands.*

**A Generic Personal Assistant Agent Model for Support in Demanding Tasks**

Tibor Bosse, *VU University Amsterdam, Netherlands;* Rob Duell, *Force Vision, Netherlands;* Mark Hoogendoorn, Michel Klein, Rianne Van Lambalgen, *VU University Amsterdam, Netherlands;* Andy Van der Mee, Rogier Oorburg, *Force Vision, Netherlands;* Alexei Sharpanskykh, Jan Treur, *VU University Amsterdam, Netherlands;* Michael De Vos, *Force Vision, Netherlands.*

**Using Context to Identify Difficult Driving Situations in Unstructured Environments**

Kevin Dixon, Justin Basilico, Chris Forsythe, *Sandia National Laboratories, United States;* Wilhelm Kincses, *Daimler AG, Germany.*

**Human Control Modeling Based on Multimodal Sensory Feedback Information**

Edwardo Murakami, Toshihiro Matsui, *National Institute of Advanced Industrial Sc. & Tech., Japan.*

**EHAWC**

**Evaluating Health and Safety Promotion Activities in Work Settings**

Room: Crescent

Chair(s): Bernhard Zimolong, Ruhr-University Bochum, Germany.

**Defeating Back Pain at the Workplace: Results of the "Healthy Back" Program**

Christian Schwennen, Bernhard Zimolong, Ruhr-University Bochum, Germany.

**Measuring Support for Health in Offshore Environments**

Kathryn Mearns, University of Aberdeen, United Kingdom.

**Health Promoting Leadership: The Mediating Role of an Organizational Health Culture**

Jochen Gurt, Gabriele Elke, Ruhr-University Bochum, Germany.

**Using the 'Balance Model' for Occupational Safety and Health Promotion**

Michael Smith, Pascale Carayon, University of Wisconsin-Madison, United States.

**Management Support and Worksite Health Promotion Program Effectiveness**

David DeJoy, Heather Bowen, Kristin Baker, Bethany Bynum, Mark Wilson, The University of Georgia, United States; Ron Goetzel, Emory University, United States; Rod Dishman, The University of Georgia, United States.

**Management of Work Site Health-Promotion Programs: A Review**

Bernhard Zimolong, Gabriele Elke, Ruhr-University Bochum, Germany.

**HIMI**

**Practice and Training with Display-Control Interfaces**

Room: Garden Salon Two

Chair(s): Robert Proctor, Purdue University, United States.

**Reversing the Simon Effect with Prior Practice of Noncorresponding Location Words**

Andrea Rotterman, Kim-Phuong Vu, California State University, Long Beach, United States.

**Comparison of Pilot Recovery and Response Times in Two Types of Cockpits**

Vishal Hiremath, Gulfstream Aerospace Corp, United States; Robert Proctor, Richard Fanjoy, Purdue University, United States; Robert Feyen, University of Minnesota - Duluth, United States; John Young, Purdue University, United States.

**Human-Biometric Sensor Interaction: Impact of Training on Biometric System and User Performance**

Eric Kukula, Robert Proctor, Purdue University, United States.

**Effects of Practice with Foot- and Hand-Operated Secondary Input Devices on Performance of a Word-Processing Task**

Fredrick Garcia, Kim-Phuong Vu, California State University, Long Beach, United States.

**Effects of a Mnemonic Technique on Subsequent Recall of Assigned and Self-Generated Passwords**

Deborah Nelson, Kim-Phuong Vu, California State University, Long Beach, United States.

**The Effects of Practice and Speed Stress with Different Stimulus-Response Mappings**

Kim-Phuong Vu, Audrey Rabas, Richard Roberson, California State University, Long Beach, United States.

**Application of Population Stereotypes to Computerized Tasks**

Jeffrey Wiebe, Echostar, United States; Kim-Phuong Vu, California State University, Long Beach, United States.

**Advanced Interaction Techniques**

Room: Garden Salon One

Chair(s): Naoki Saiwaki, Nara Women's University, Japan.

**f-MRI Study of Brain Activation in Tactile Feeling**

Yuka Kouda, Maki Taniguchi, Nara Women's University, Japan; Yukiyasu Kamitani, ATR Computational Neuroscience Laboratories, Japan; Naoki Saiwaki, Nara Women's University, Japan.

**Design of Wearable Interface considering Touch Communications**

Mariko Kato, Naoki Saiwaki, Nara Women's University, Japan.

**Using 3D Touch Interaction for a Multimodal Zoomable User Interface**

Florian Laquai, Markus Ablassmeier, Tony Poitschke, Gerhard Rigoll, Technical University of Munich, Germany.

**A Proposal of EMG-based Training Support System for Basketball Dribbling**

Seimei Abe, Takayuki Nozawa, Toshiyuki Kondo, Tokyo University of Agriculture and Technology, Japan.

**A Tangible Mixed Reality Interface for the AMI Automated Meeting Assistant**

Jochen Ehnes, The University of Edinburgh, United Kingdom.

**Improvement of Member's Concentration during Discussion**

Junko Ichino, University of Electro-Communications, Japan; Kazuhiro Takeuchi, Osaka Electro-Communication University, Japan; Hitoshi Isahara, National Institute of Info & Com. Technology (NICT), Japan.

**Non-intrusive Human Behavior Monitoring Sensor for Health Care System**

Noriyuki Kushiro, Makoto Katsukura, Masanori Nakata, Yoshiaki Ito, Mitsubishi Electric Corporation, Japan.

**HCI**

**Conversational Robot, Agent, Smart Sensing and Human-Computer Interaction**

Room: Windsor

Chair(s): Hirotada Ueda, Kyoto Sangyo University, Japan.

**Impression Evaluation of a Conversational Robot Playing RAKUGO**

Akihiro Ogino, Noritaka Moriya, Park Seung-Joon, Hirotada Ueda, Kyoto Sangyo University, Japan.

**Autonomous Turn-Taking Agent System based on Behavior Model**

Masahide Yuasa, Hiroko Tokunaga, Naoki Mukawa, Tokyo Denki University, Japan.

**User-Definable Rule Description Framework for Autonomous Actor Agents**

Narichika Hamaguchi, Hiroyuki Kaneko, Japan Broadcasting Corporation, Japan; Mamoru Doke, NHK Engineering Services, Inc, Japan; Seiki Inoue, Japan Broadcasting Corporation, Japan.

**A Robotic Introducer Agent Based on Adaptive Embodied Entrainment Control**

Mutsuo Sano, Kenzaburo Miyawaki, Osaka Institute of Technology, Japan; Ryohei Sasama, Tomoharu Yamaguchi, Keiji Yamada, NEC Corporation, Japan.

**Life with a Robot Companion: Video Analysis of 16-days of Interaction with a Home Robot in a "Ubiquitous Home" Environment**

Naoko Matsumoto, Kyushu University, Japan; Hirotada Ueda, Kyoto Sangyo University, Japan; Tatsuya Yamazaki, National Institute of Info & Com. Technology (NICT), Japan; Hajime Murai, Tokyo Institute of Technology, Japan.

**Modeling Personal Preferences on Commodities by Behavior Log Analysis with Ubiquitous Sensing**

Naoki Imamura, Chuo University, Japan; Akihiro Ogino, Kyoto Sangyo University, Japan; Toshikazu Kato, Chuo University, Japan.

**Robot Helps Teachers for Education of the C Language Beginners**

Haruki Tamada, Akihiro Ogino, Hirotada Ueda, Kyoto Sangyo University, Japan.

# Parallel Sessions

<p><b>Model-Based Design Approaches: Case Studies, Tool Support and Validation</b>  <i>Room: Hampton</i>                  Chair(s): Peter Forbrig, <i>University of Rostock, Germany.</i></p>	<p><b>Eye Tracking in HCI</b>  <i>Room: Sheffield</i>                  Chair(s): G. Susanne Bahr, <i>Florida Institute of Technology (FIT), United States.</i></p>
<p><b>Agent-based Architecture for Interactive System Design: Current Approaches, Perspectives and Evaluation</b>                  Christophe Kolski, <i>University of Valenciennes and Hainaut-Cambrésis, France</i>; Peter Forbrig, <i>University of Rostock, Germany</i>; Bertrand David, <i>Ecole Centrale de Lyon, France</i>; Patrick Girard, <i>University of Poitiers, France</i>; Chi Dung Tran, Houcine Ezzedine, <i>University of Valenciennes and Hainaut-Cambrésis, France.</i></p> <p><b>Orchestration Modeling of Interactive Systems</b>                  Bertrand David, Rene Chalon, <i>Ecole Centrale de Lyon, France.</i></p> <p><b>Supporting Multidisciplinary Teams and Early Design Stages Using Storyboards</b>                  Mieke Haesen, Jan Meskens, Kris Luyten, Karin Coninx, <i>University of Hasselt, Belgium.</i></p> <p><b>An Exploration of Perspective Changes within MBD</b>                  Anke Dittmar, Peter Forbrig, <i>University of Rostock, Germany.</i></p> <p><b>People-Oriented Programming: from Agent-Oriented Analysis to the Design of Interactive Systems</b>                  Steve Goschnick, <i>University of Melbourne, Australia.</i></p> <p><b>Didactic Models as Design Representations</b>                  Christian Stary, <i>University of Linz, Austria.</i></p> <p><b>Model-Based Specification and Validation of User Interface Requirements</b>                  Birgit Bomsdorf, <i>Fulda University of Applied Sciences, Germany</i>; Daniel Sinnig, <i>Concordia University, Canada.</i></p>	<p><b>Automated Analysis of Eye-Tracking Data for the Evaluation of Driver Information Systems According to ISO/TS 15007-2:2001</b>                  Christian Lange, Martin Wohlfarter, Heiner Bubb, <i>Technical University of Munich, Germany.</i></p> <p><b>Automatic Method for Measuring Eye Blinks Using Split-Interlaced Images</b>                  Kiyohiko Abe, <i>Kanto Gakuin University, Japan</i>; Shoichi Ohi, Minoru Ohyama, <i>Tokyo Denki University, Japan.</i></p> <p><b>An Analysis of Eye Movements During Browsing of Multiple Search Results Pages</b>                  Yuko Matsuda, Hidetake Uwano, Masao Ohira, Ken-ichi Matsumoto, <i>Nara Institute of Science and Technology, Japan.</i></p> <p><b>An Innovative Way of Understanding Learning Processes: Eye Tracking</b>                  Berrin Dogusoy, Kursat Cagiltay, <i>Middle East Technical University, Turkey.</i></p> <p><b>A Usability Study of WebMaps with Eye Tracking Tool: The Effects of Iconic Representation of Information</b>                  Ozge Alacam, Mustafa Dalci, <i>Middle East Technical University, Turkey.</i></p> <p><b>Informative or Misleading? Heatmaps Deconstructed</b>                  Agnieszka Bojko, <i>User Centric, Inc., United States.</i></p>

<p><b>EPCE</b>  <b>HCI in Aviation</b>  <i>Room: Towne</i>                  Chair(s): Ronald Miller, <i>Brigham Young University-Hawaii, United States.</i></p>	<p><b>A Regulatory-Based Approach to Safety Analysis of Unmanned Aircraft Systems</b>                  James Luxhøj, Ahmet Öztekin, <i>Rutgers University, United States.</i></p> <p><b>Ergonomic Analysis of Different Computer Tools to Support the German Air Traffic Controllers</b>                  Muriel Didier, Margeritta Von Wilamowitz-Moellendorff, Ralph Bruder, <i>Darmstadt University of Technology, Germany.</i></p> <p><b>Future Ability Requirements for Human Operators in Aviation</b>                  Catrin Hasse, Carmen Bruder, Dietrich Grasshoff, Hinnerk Eißfeldt, <i>German Aerospace Center, Germany.</i></p> <p><b>Critical Interaction Analysis in the Flight Deck</b>                  Chiara Santamaria Maurizio, <i>DeepBlue s.r.l., Italy</i>; Patrizia Marti, <i>University of Siena, Italy</i>; Simone Pozzi, <i>DeepBlue s.r.l., Italy.</i></p> <p><b>A Selection of Human Factors Tools: Measuring HCI Aspects of Flight Deck Technologies</b>                  Rolf Zon, Henk Van Dijk, <i>National Aerospace Laboratory (NLR), Netherlands.</i></p> <p><b>Cognitive Workload as a Predictor of Student Pilot Performance</b>                  Nathan Tilton, <i>Embry-Riddle Aeronautical University, United States</i>; Ronald Miller, <i>Brigham Young University-Hawaii, United States.</i></p> <p><b>The Application of Human Error Template (HET) for Redesigning Standard Operational Procedures in Aviation Operations</b>                  Wen-Chin Li, <i>National Defense University, Taiwan</i>; Don Harris, <i>Cranfield University, United Kingdom</i>; Yueh-Ling Hsu, <i>Kainan University, Taiwan</i>; Lon-Wen Li, <i>Ministry of Defence, Taiwan.</i></p>
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Engineering Psychology and Cognitive Ergonomics

<p><b>UAHCI</b>  <b>Inclusive Interaction: Product Interaction for Inclusive and Aging Populations</b>  <i>Room: Pacific Salon One</i>                  Chair(s): Patrick Langdon, <i>University of Cambridge, United Kingdom.</i></p>	<p><b>Eliciting Mental Models of User Methods for Product and Communications Design</b>                  Joy Goodman-Deane, Patrick Langdon, John Clarkson, <i>University of Cambridge, United Kingdom</i>; Susannah Clarke, <i>Imperial College London, United Kingdom.</i></p> <p><b>Investigating Prior Experience and Product Learning through Novel Interface Interaction: A Pilot Study</b>                  Chris Wilkinson, Patrick Langdon, John Clarkson, <i>University of Cambridge, United Kingdom.</i></p> <p><b>Towards an Account of Sensorimotor Knowledge in Inclusive Product Design</b>                  Joern Hurtienne, <i>Berlin University of Technology, Germany</i>; Patrick Langdon, John Clarkson, <i>University of Cambridge, United Kingdom.</i></p> <p><b>Visualizing Design Exclusion Predicted by Disability Data: A Mobile Phone Case Study</b>                  Sam Waller, John Clarkson, Patrick Langdon, <i>University of Cambridge, United Kingdom.</i></p> <p><b>Modelling Product-User Interaction for Inclusive Design</b>                  Anna Mieczakowski, Patrick Langdon, John Clarkson, <i>University of Cambridge, United Kingdom.</i></p> <p><b>Enabling People – Creating Inclusive Human-Computer Interactions</b>                  Rama Gheerawo, Yanki Lee, <i>Royal College of Art, United Kingdom.</i></p> <p><b>Asperger Syndrome and Mobile Phone Behaviour</b>                  Laura Daley, Shaun Lawson, Emile Van der Zee, <i>University of Lincoln, United Kingdom.</i></p>
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Universal Access in Human-Computer Interaction

Thursday 08:00 - 10:00

**UAHCI**

**Design of Ambient Intelligent Environments for all**

Room: Pacific Salon Two

Chair(s): Christian Bühler, TU Dortmund University / FTB, Germany.

**Cognitive Accessibility and Cognitive Support**

Room: Pacific Salon Three

Chair(s): Constantine Stephanidis, Margherita Antona, Foundation for Research & Technology - Hellas (FORTH), Greece.

**Ubiquitous Accessibility: Building Access Features Directly into the Network to Allow Anyone, Anywhere Access to Ubiquitous Computing Environments**

Gregg Vanderheiden, University of Wisconsin-Madison, United States.

**A Function Based Approach Towards Adaptive Interfaces for Elderly Users**

Edmund Wascher, Gerhard Rinkenauer, Michael Falkenstein, IfADo, Germany.

**Ambient Intelligence in Working Environments**

Christian Bühler, TU Dortmund University / FTB, Germany.

**Design for All Approach with the Aim to Support Autonomous Living for Elderly People in Ordinary Residences – An Implementation Strategy**  
Claes Tjäder, Swedish Institute of Assistive Technology, Sweden.

**Self Care System to Assess Cardiovascular Diseases at Home**

Elena Villalba, Ignacio Peinado, Maria Teresa Arredondo, Technical University of Madrid (UPM), Spain.

**Workflow Mining Application to Ambient Intelligence Behavior Modeling**

Carlos Fernandez-Llatas, Juan-Pablo Lazaro-Ramos, Jose-Miguel Benedi, Universidad Politécnica de Valencia, Spain.

**Studying Point-Select-Drag Interaction Techniques for Older People with Cognitive Impairment**

Nadine Vigouroux, Université Paul Sabatier, France; Pierre Rumeau, CHU Toulouse, France; Frédéric Vella, IRIT, France; Bruno Vellas, CHU Toulouse, France.

**Efficacy of Cognitive Training Experiences in the Elderly: Can Technology Help?**

Cristina Buiza, Mari Feli Gonzalez, David Facal, Valeria Martinez, Unai Diaz, Aitziber Etxaniz, Elena Urdaneta, Javier Yanguas, Fundacion Instituto Gerontologico Matia - INGEMA, Spain.

**Confronting the Transition: Improving Quality of Life for the Elderly with an Interactive Multisensory Environment - a Case Study**

Phil Ellis, Lieselotte Van Leeuwen, University of Sunderland, United Kingdom.

**Mobile Technology for People With Cognitive Disabilities and Their Caregivers - HCI Issues**

Clayton Lewis, James Sullivan, Jeffery Hoehl, University of Colorado at Boulder, United States.

**Distributed Intelligence and Scaffolding in Support of Cognitive Health**

Stefan Carmien, Randal Koene, Patronik Foundation, Spain.

**Age Related Cognitive Impairments and Diffusion of Assistive Web-Base Technologies**

Senaka Fernando, Tony Elliman, Arthur Money, Lorna Lines, Brunel University, United Kingdom.

**Does Health Related Quality of Life Differ Between People with Chronic Mental Illness Who Use Computers and Those Who Do Not?**

Yan-hua Huang, California State University, Dominguez Hills, United States; I-Ju Su, Taipei Medical University - Wanfang Hospital, Taiwan.

**VMR**

**Designing Virtual and Mixed Reality Environments**

Room: Sunset

Chair(s): Woontack Woo, Gwangju Institute of Science and Technology (GIST), Korea.

**A Design Method for Next Generation User Interfaces inspired by the Mixed Reality Continuum**

Jörg Stöcklein, University of Paderborn, Germany; Christian Geiger, Duesseldorf University of Applied Sciences, Germany; Volker Paelke, Leibniz Universität Hannover, Germany; Patrick Pogscheba, Duesseldorf University of Applied Sciences, Germany.

**Intuitive Change of 3D Wand Function in Surface Design**

Sang-Hun Nam, Chung-Ang University, Korea; Hark-Su Kim, GSAIM, Korea; Young-Ho Chai, Chung-Ang University, Korea.

**Emergent Design: Serendipity in Digital Educational Games**

Michael Kickmeier-Rust, Dietrich Albert, University of Graz, Austria.

**A Study on the Design of Augmented Reality User Interfaces for Mobile Learning Systems in Heritage Temples**

Kuo-Hsiung Wang, Li-Chieh Chen, Po-Ying Chu, Yun-Maw Cheng, Tatung University, Taiwan.

**Integrating and Delivering Sound Using Motion Capture and Multi-tiered Speaker Placement**

Darin Hughes, University of Central Florida, United States.

**Supporting Reusability of VR and AR Interface Elements and Interaction Techniques**

Wolfgang Broll, Jan Herling, Fraunhofer, Germany.

**Software-Agents for On-demand Authoring of Mobile Augmented Reality Applications**

Rafael Radkowski, University of Paderborn, Germany.

**IDGD**

**Mobile Money: Design for Inclusion**

Room: Sunrise

Chair(s): Supriya Singh, RMIT University, Australia.

**Mobile-Banking Adoption and Usage by Low-Literate, Low-Income Users in the Developing World**

Indrani Medhi, Aishwarya Ratan, Kentaro Toyama, Microsoft Research, India.

**Mobile Remittances: Design for Financial Inclusion**

Supriya Singh, RMIT University, Australia.

**Personalizing the Shared Mobile Phone**

Nimmi Rangaswamy, Microsoft Research, India; Supriya Singh, RMIT University, Australia.

**Examining the Usage and Impact of Transformational M-banking in Kenya**

Olga Morawczynski, The University of Edinburgh, United Kingdom.

**How Mobile Money can Drive Financial Inclusion for Women at the Bottom of the Pyramid (BOP) in Indian Urban Centers**

Apala Lahiri Chavan, Sarit Arora, Anand Kumar, Praneet Koppula, Human Factors International, United States.

Thursday 08:00 - 10:00

Virtual and Mixed Reality

Internationalization, Design and Global Development

# Parallel Sessions

Online Communities and Social Computing

## OCSC

### Learning and Collaboration

Room: Royal Palm Salon Six

Chair(s): Emilie Gould, *Empire State College, United States.*

### Creating Community Through the Use of a Class Wiki

Kirsten Johnson, Jamie Bartolino, *Elizabethtown College, United States.*

### A Discussion of Video Capturing to Assist in Distance Learning

Michael Conlon, Vasos Pavlika, *University of Westminster, United Kingdom.*

### Instant Online Communities as a Means to Foster Conferences

Martin Kindsmüller, *University of Lübeck, Germany*; Jan Milz, *Johannes Schmidt, INSTANT Communities GmbH, Germany.*

### Catalysing the Development of a Conference Workspace

Jukka Huhtamäki, Ossi Nykänen, Jaakko Salonen, *Tampere University of Technology, Finland.*

Augmented Cognition

## AC

### Augmented Social Information Seeking, Collaborative Interaction, and Computer Use

Room: Royal Palm Salon Five

Chair(s): Wai Tat Fu, *University of Illinois at Urbana-Champaign, United States.*

### Activity Awareness & Social Sensemaking 2.0: Design of a Task Force Workspace

Gregorio Convertino, Lichan Hong, Les Nelson, Peter Pirolli, Ed Chi, *Palo Alto Research Center (PARC), United States.*

### The Interaction between Chinese University Students' Computer Use and Their Attitudes toward Computer in Learning and Innovation

Ye Liu, Xiaolan Fu, *Chinese Academy of Sciences, P.R. China.*

### Impact on Performance and Process by a Social Annotation System: A Social Reading Experiment

Les Nelson, Gregorio Convertino, Peter Pirolli, Lichan Hong, Ed Chi, *Palo Alto Research Center (PARC), United States.*

### Trail Patterns in Social Tagging Systems : Role of Tags as Digital Pheromones

Thomas Kannampallil, Wai Tat Fu, *University of Illinois at Urbana-Champaign, United States.*

### Where is My Stuff? Augmenting Finding and Re-Finding Information by Spatial Locations and Icon Luminance

Michelle Moon, Wai Tat Fu, *University of Illinois at Urbana-Champaign, United States.*

### Conformity out of Diversity: Dynamics of Information Needs and Social Influence of Tags in Exploratory Information Search

Ruogu Kang, Thomas Kannampallil, Jibo He, Wai Tat Fu, *University of Illinois at Urbana-Champaign, United States.*

### Combined Effects of Sleep Deprivation, Narrow Space, Social Isolation and High Cognitive Workload on Cognitive Ability of Chinese Operators

Yijing Zhang, *China Astronaut Res. & Train. Center / Tsinghua Univ., P.R. China*; Zhizhong Li, *Tsinghua University, P.R. China*; Bin Wu, Xueyong Liu, Fang Liu, Xiaolu Jing, Jun Wang, Haibo Qin, *China Astronaut Research and Training Center, P.R. China*; Su Wu, *Tsinghua University, P.R. China.*

Digital Human Modeling

## DHM

### Systems and Safety - I

Room: Royal Palm Salon Four

Chair(s): Mark Lehto, Vincent Duffy, *Purdue University, United States.*

### On Improving Provider Decision Making with Enhanced Computerized Clinical Reminders

Sze-jung Wu, Mark Lehto, Yuehwern Yih, *Purdue University, United States*; Jason Saleem, Bradley Doebbeling, *VA HSR&D Center on Implementing Evidence-Based Practice, United States.*

### The Impact of Change in Software on Satisfaction: Evaluation Using Critical Incident Technique (CIT)

Akshatha Pandith, Mark Lehto, Vincent Duffy, *Purdue University, United States.*

### Bridging the Gap Between HCI and DHM: The Modeling of Spatial Awareness Within a Cognitive Architecture

Bryan Robbins, Daniel Carruth, Alex Morais, *Mississippi State University, United States.*

### A Methodology for Modeling the Influence of Construction Machinery Operators on Productivity and Fuel Consumption

Reno Filla, *Volvo Construction Equipment, Sweden.*

### Within and Between-Subject Reliability Using Classic Jack for Ergonomic Assessments

Brian McInnes, *Ford Motor Company, Canada*; Allison Stephens, *Ford Motor Company, United States*; Jim Potvin, *McMaster University, Canada.*

### Development of a Kinematic Hand Model for Study and Design of Hose Installation

Thomas Armstrong, Christopher Best, Sungchan Bae, Jaewon Choi, *University of Michigan, United States*; D. Christian Grieshaber, *Illinois State University, United States*; Daewoo Park, Charles Woolley, Wei Zhou, *University of Michigan, United States.*

### Modeling Human Motion

Room: Royal Palm Salon Three

Chair(s): Dan Högberg, *University of Skövde, Sweden.*

### A Multi-functional Visualization System for Motion Captured Human Body Based on Virtual Reality Technology

Qichang He, Lifeng Zhang, Xiumin Fan, Yong Hu, *Shanghai Jiao Tong University, P.R. China.*

### Augmented Practice Mirror: A Self-Learning Support System of Physical Motion with Real-time Comparison to Teacher's Model

Itaru Kuramoto, *Kyoto Institute of Technology, Japan*; Yoshikazu Inagaki, *Kyoto University of Education, Japan*; Yu Shibuya, Yoshihiro Tsujino, *Kyoto Institute of Technology, Japan.*

### Adaptive Motion Pattern Recognition: Implementing Playful Learning through Embodied Interaction

Anja Hashagen, Christian Zabel, Heidi Schelhowe, Saeed Zare, *TZI - University of Bremen, Germany.*

### Video-Based Human Motion Estimation System

Mariofanna Milanova, *University of Arkansas at Little Rock, United States*; Leonardo Bocchi, *University of Florence, Italy.*

### Method for Movement and Gesture Assessment (MMGA) in Ergonomics

Giuseppe Andreoni, Marco Mazzola, Oriana Ciani, Marta Zambetti, Maximiliano Romero, Fiammetta Costa, Ezio Preatoni, *Politecnico di Milano, Italy.*

### Intelligent Motion Tracking by Combining Specialized Algorithms

Matthias Weber, *FGAN e.V., Germany.*

Thursday 08:00 - 10:00

HCD

Human Centered Design

**HCD Activities in Japan**

*Room: Royal Palm Salon One*

Chair(s): Mitsuhiko Karashima, Tokai University, Japan.

**Auditory and Visual Guidance for Reducing Cognitive Load**

Hiroko Akatsu, OKI Electric Industry Co., Ltd., Japan; Akinori Komatsubara, Waseda University, Japan.

**Regional Difference in the Use of Cell Phone and Other Communication Media among Senior Users**

Ayako Hashizume, University of Tsukuba, Japan; Masaaki Kurosu, The Open University of Japan, Japan; Toshimasa Yamanaka, University of Tsukuba, Japan.

**A Proposal of XB-method, an Idea Generation System for New Services Using User Experiences**

Naoka Misawa, U'eyes Design, Inc., Japan; Mitsuru Fujita, DENSO Corporation, Japan.

**Support Method for Improving the Ability of People with Cerebral Palsy to Efficiently Point a Mouse at Objects on a GUI Screen**

Hiromi Nishiguchi, Tokai University, Japan.

**Site-it!: An Information Architecture Prototyping Tool**

Atsushi Hasegawa, Concent, Inc., Japan.

**Mapping of Usability Guidelines onto User's Temporal Viewpoint Matrix**

Tadashi Kobayashi, Aichi Institute of Technology, Japan; Hiromasa Nakatani, Shizuoka University, Japan.

**Human-Centered Applications**

*Room: Royal Palm Salon Two*

Chair(s): Ioannis Basdekis, Foundation for Research & Technology - Hellas (FORTH), Greece.

**Frequency of Usage and Feelings of Connectedness in Instant Messaging by Age, Sex, and Civil Status**

Michael Stiso, SINTEF, Norway.

**Web Orchestration: Customization and Sharing Tool for Web Information**

Lei Fu, Fujitsu R&D Center Co., Ltd., P.R. China; Terunobu Kume, Fumihito Nishino, Fujitsu Laboratories Ltd., Japan.

**Evaluating E-Commerce User Interfaces: Challenges and Lessons Learned**

Rainer Blum, Karim Khakzar, Fulda University of Applied Sciences, Germany.

**Animated Demonstrations: Evidence of Improved Performance Efficiency and the Worked Example Effect**

David Lewis, Ann Barron, University of South Florida, United States.

**Redefining Architectural Elements by Digital Media**

Kai-Hsiang Liang, National Chiao Tung University, Taiwan.

**A Mobile Application for Survey Reports - An Evaluation**

Daniel Kohlsdorf, Michael Lawo, Michael Boronowsky, TZI - University of Bremen, Germany.

**The Effects of Information Architecture and Atmosphere Style on the Usability of an Ecology Education Website**

Chao-jen Ku, Hsuan Chuang University, Taiwan; Ji-Liang Doong, Li-Chieh Chen, Tatung University, Taiwan.

HIMI

Human Interface and the Management of Information

**Human Performance and Situation Awareness in Automated Separation Assurance Systems**

*Room: Garden Salon Two*

Chair(s): Kim-Phuong Vu, California State University, Long Beach, United States.

**The Impact of Automation Assisted Aircraft Separation on Situation Awareness**

Arik-Quang Dao, Summer Brandt, NASA Ames Research Center, United States; Vernol Battiste, San Jose State Univ. Foundation / NASA ARC, United States; Kim-Phuong Vu, Tom Strybel, California State University, Long Beach, United States; Walter Johnson, NASA Ames Research Center, United States.

**Situation Awareness and Performance of Student versus Experienced Air Traffic Controllers**

Kim-Phuong Vu, Katsumi Minakata, Jimmy Nguyen, Joshua Kraut, Hamzah Raza, California State University, Long Beach, United States; Vernol Battiste, San Jose State Univ. Foundation / NASA ARC, United States; Tom Strybel, California State University, Long Beach, United States.

**Separation Assurance and Collision Avoidance Concepts for The Next Generation Air Transportation System**

John Dwyer, Boeing, United States; Steven Landry, Purdue University, United States.

**Optimizing Online Situation Awareness Probes in Air Traffic Management Tasks**

Tom Strybel, Katsumi Minakata, Jimmy Nguyen, Russell Pierce, Kim-Phuong Vu, California State University, Long Beach, United States.

**Information Requirements and Sharing for NGATS Function Allocation Concepts**

Nhut Ho, Patrick Martin, Joseph Bellissimo, Barry Berson, California State University, Northridge, United States.

**Pilot Confidence with ATC Automation using Cockpit Situation Display Tools in a Distributed Traffic Management Environment**

Sarah Ligda, San Jose State University, United States; Nancy Johnson, NASA Ames Research Center, United States; Joel Lachter, San Jose State University, United States; Walter Johnson, NASA Ames Research Center, United States.

**Browsing and Exploring Information**

*Room: Crescent*

Chair(s): Youngho Rhee, Samsung Electronics Co., Ltd, Korea.

**Widgets for Faceted Browsing**

Jan Polowinski, Dresden University of Technology, Germany.

**Building and Browsing Tropos Models: the AVI Design**

Tania Di Mascio, University of LAquila, Italy; Anna Perini, Luca Sabatucci, Angelo Susi, Fondazione Bruno Kessler, Italy.

**Exploiting Browsing History for Exploratory Search**

Wei-Lin Chen, Wei-Guang Teng, National Cheng Kung University, Taiwan.

**Exploring History with Narrative Timelines**

Robert Allen, Sumanth Nalluru, Drexel University, United States.

**Effects of Information Displays for Hyperlipidemia**

Yang Gong, University of Missouri, United States; Jiajie Zhang, University of Texas Health Science Center at Houston, United States.

**An Interactive System Based on Semantic Graphs**

Johann Vandromme, Samuel Degrande, Patricia Plenacoste, Christophe Chaillou, Computer Science Laboratory of Lille (LIFL), France.

**Phorigami: A Photo Browser Based on Meta-Categorization and Origami Visualization**

Shuo-Hsiu Hsu, Orange Labs, France; Pierre Cubaud, Conservatoire national des art et metiers, France; Sylvie Jumpertz, Orange Labs, France.

## HCI

Human-Computer Interaction

### Virtual Classroom and Communicability: Empathy and Interaction for all

Room: Windsor

Chair(s): Francisco Cipolla-Ficarra, Alaipo & Ainci, Italy.

### A Set of Rules and Strategies for UNSAM Virtual Campus

Jorge Fernandez-Niello, *National University of San Martin, Argentina*; Francisco Cipolla-Ficarra, *Alaipo & Ainci, Italy*; Mario Greco, Rodolfo Fernández Ziegler, Silvia Bernaténé, Maria Villarreal, *National University of San Martin, Argentina*.

### A Virtual Environment For Learning Airport Emergency Management Protocols

Telmo Zarraonandia, Mario Rafael Ruiz Vargas, Paloma Diaz, Ignacio Aedo, *Carlos III University of Madrid, Spain*.

### Accessing e-Learning Systems via Screen Reader: an Example

Maria Claudia Buzzi, Marina Buzzi, Barbara Leporini, *National Council of Research (CNR), Italy*.

### Virtual Classroom and Communicability: Empathy and Interaction for All

Francisco Cipolla-Ficarra, *Alaipo & Ainci, Italy*.

### Communicability for Virtual Learning: Evaluation

Francisco Cipolla-Ficarra, Miguel Cipolla-Ficarra, *Alaipo & Ainci, Italy*; Pablo Vera, *Universidad Nacional de La Plata, Argentina*.

### Mixed Realities – Virtual Object Lessons

Andreas Kratky, *University of Southern California, United States*.

### Virtual Communities Adapted to the EHEA in an Enterprise Distance e-Learning Based Environment

Rafael Pastor Vargas, Timothy Read, Salvador Ros, Roberto Hernandez, *Universidad de Educacion a Distancia, Spain*; Rocaél Hernández, *Galileo University, Guatemala*.

### Advancing the Mobile Device User Experience

Room: Hampton

Chair(s): Gavin Lew, *User Centric, Inc., United States*.

### A Multidimensional Approach for the Evaluation of Mobile Application User Interfaces

José E. R. de Queiroz, Danilo Ferreira, *Federal University of Campina Grande, Brazil*.

### Evaluation of User-Interfaces for Mobile Application Development Environments

Florence Balagtas-Fernandez, Heinrich Hußmann, *Ludwig-Maximilians-University Munich, Germany*.

### Mobile Interfaces in Tangible Mnemonics Interaction

Thorsten Mahler, Marc Hermann, Michael Weber, *University of Ulm, Germany*.

### Context Awareness and Perceived Interactivity in Multimedia Computing

Xiao Dong, *University of Minnesota, United States*; P.L. Patrick Rau, *Tsinghua University, P.R. China*.

### TringIt: Easy Triggering of Web Actions from a Phone

Vinod Anupam, *Anexas Inc, United States*.

### Facilitating the Design of Vibration for Handheld Devices

Taezoon Park, *Nanyang Technological University, Singapore*; Jihong Hwang, *Seoul National University of Technology, Korea*; Wonil Hwang, *Soongsil University, Korea*.

### Menu Design in Cell Phones: Use of 3D Menus

Kyungdoh Kim, Robert Proctor, *Purdue University, United States*; Gavriel Salvendy, *Purdue University / Tsinghua University, United States*.

### Gesture-based Interaction - II

Room: Garden Salon One

Chair(s): Hideo Saito, *Keio University, Japan*.

### Using Pictographic Representation, Syntactic Information and Gestures in Text Entry

Hamed Sad, Franck Poirier, *Université de Bretagne-Sud, France*.

### Gesture-Based Sharing of Documents in Face-to-Face Meetings

Alexander Loob, Christian Rathke, *Stuttgart Media University, Germany*.

### Did I Get it Right: Head Gestures Analysis for Human-Machine Interactions

Jürgen Gast, Alexander Bannat, Tobias Rehl, Gerhard Rigoll, Frank Wallhoff, Christoph Mayer, Bernd Radig, *Technical University of Munich, Germany*.

### An Open Source Framework for Real-Time, Incremental, Static and Dynamic Hand Gesture Learning and Recognition

Todd Alexander, *Florida Institute of Technology (FIT), United States*; S.M. Hassan Ahmed, *University of Miami, United States*; Georgios Anagnostopoulos, *Florida Institute of Technology (FIT), United States*.

### A Real-Time Hand Interaction System for Image Sensor Based Interface

Sein Lee, Jonghoon Seo, *Yonsei University, Korea*; Soon-bum Lim, *Sookmyung University, Korea*; Yoon-Chul Choy, Tack-Don Han, *Yonsei University, Korea*.

### Emotions and Messages in Simple Robot Gestures

Jamy Li, Mark Chignell, *University of Toronto, Canada*; Sachi Mizobuchi, *Toyota InfoTechnology Center, Japan*; Michiaki Yasumura, *Keio University, Japan*.

### User-Centered Practices in Industry

Room: Sheffield

Chair(s): Jianming Dong, *Human Factors International Inc., United States*.

### A New Automatic Teller Machine(ATM) Proposal through the Analysis of ATMs of Three Banks

Serdar Yarlikas, *Middle East Technical University, Turkey*.

### Allocating Human-System Interfaces Functions by Levels of Automation in an Advanced Control Room

Chiuhsiang Joe Lin, *Chung Yuan Christian University, Taiwan*; Chih-Wei Yang, Tzu-Chung Yenn, *Institute of Nuclear Energy Research, Taiwan*; Lai-Yu Cheng, *Chung Yuan Christian University, Taiwan*.

### Nine Assistant Guiding Methods in Subway Design - A Research of Shanghai Subway Users

Linong Dai, *Shanghai Jiao Tong University, P.R. China*.

### Little Design Up-Front: A Design Science Approach to Integrating Usability into Agile Requirements Engineering

Sisira Adikari, Craig McDonald, John Campbell, *University of Canberra, Australia*.

### Usability-Engineering-Requirements as a Basis for the Integration with Software Engineering

Karsten Nebe, *University of Paderborn, Germany*; Volker Paelke, *Leibniz Universität Hannover, Germany*.

### Benefit and Evaluation of Interactive 3D-process Data Visualization for the Presentation of Complex Problems

Dorothea Pantförder, Birgit Vogel-Heuser, *University of Kassel, Germany*; Karin Schweizer, *University of Mannheim, Germany*.

Thursday 10:30 - 12:30

UAHCI

Universal Access in Human-Computer Interaction

**Universal Accessibility of Documents - I**

*Room: Pacific Salon One*  
Chair(s): Georgios Kouroupetroglou, National & Kapodistrian University of Athens, Greece.

**An Interaction Based Approach to Document Segmentation for the Visually Impaired**

Robert Keefer, Dimitrios Dakopoulos, Wright State University, United States; Anna Esposito, Second Naples University, Italy; Nikolaos Bourbakis, Wright State University, United States.

**A Flexible Design for Accessible Spoken Math**

Neil Soiffer, Design Science, Inc., United States.

**DocEmoX: A System for the Typography-Derived Emotional Annotation of Documents**

Georgios Kouroupetroglou, Dimitrios Tsonos, Eugenios Vlahos, National & Kapodistrian University of Athens, Greece.

**Using Semantic-level Tags in HTML/XML Documents**

Lawrence Henschen, Julia Lee, Northwestern University, United States.

**Improving Static Print Design Readability Using Mobile Reading Filters**

Jackson Filho, Wilson Prata, Nokia Technology Institute, Brazil.

**Core-technologies for Ubiquitous Access and Natural Interaction**

*Room: Pacific Salon Two*  
Chair(s): Yong-Guk Kim, Sejong University, Korea.

**Face Recognition Technology for Ubiquitous Computing Environment**

Hyeon-Joon Moon, Seongrok Hong, Ilang Joo, Jaehon Lee, Kanghun Jeong, Sejong University, Korea.

**On the Privacy-Preserving HCI Issues**

Taekyoung Kwon, Sejong University, Korea; JongHyup Lee, JooSeok Song, Yonsei University, Korea.

**Development of Real-Time Face Detection Architecture for Household Robot Applications**

Dongil Han, Hyunjong Cho, Jaekwang Song, Hyeon-Joon Moon, Seongjoon Yoo, Sejong University, Korea.

**Interactive Photo Viewing on Ubiquitous Displays**

Han-Sol Ryu, Yeo-Jin Yoon, Sejong University, Korea; Seon-Min Rhee, University of Southern California, United States; Soo-Mi Choi, Sejong University, Korea.

**Accessing Positive and Negative Online Opinions**

Hanhoon Kang, Seongjoon Yoo, Dongil Han, Sejong University, Korea.

**Anamorphosis Projection by Ubiquitous Display in Intelligent Space**

Jeong-Eom Lee, Korea University, Korea; Satoshi Miyashita, Kousuke Azuma, Joo-Ho Lee, Ritsumeikan University, Japan; Gwi-Tae Park, Korea University, Korea.

**Robust Active Appearance Model based upon Multi-Linear Analysis against Illumination Variation**

Gyeong-Sic Jo, Hyeon-Joon Moon, Yong-Guk Kim, Sejong University, Korea.

**Computational Intelligence for Human-Computer Interaction**

*Room: Royal Palm Salon One*  
Chair(s): Ping Guo, Xin Zheng, Beijing Normal University, P.R. China.

**Towards Intelligent Interaction in Classroom**

Pengfei Xu, Guanghui Han, Wen Li, Zhongke Wu, Mingquan Zhou, Beijing Normal University, P.R. China.

**Free-form Sketching with Ball B-Splines**

Rongqing Song, Zhongke Wu, Mingquan Zhou, Xuefeng Ao, Beijing Normal University, P.R. China.

**Non-complete Topological Analysis in Image-based 3D Building Reconstruction**

Yu Wang, Xin Zheng, Beijing Normal University, P.R. China.

**Accelerated Algorithm for Silhouette Fur Generation Based on GPU**

Yang Gang, Xinyuan Huang, Beijing Forestry University, P.R. China.

**An Ortho-rectification Method for Space-borne SAR Image with Imaging Equation**

Xufei Gao, Xinyu Chen, Ping Guo, Beijing Normal University, P.R. China.

**Combining Color and Shape Features for Image Retrieval**

XiaoFu Lee, Qian Yin, Beijing Normal University, P.R. China.

**A Hardware Accelerated Algorithm for Terrain Visualization**

Maojin Xie, Weiqun Cao, Beijing Forestry University, P.R. China.

**Universal Access and Education**

*Room: Pacific Salon Three*  
Chair(s): Constantine Stephanidis, Dimitris Grammenos, Foundation for Research & Technology - Hellas (FORTH), Greece.

**ESSE: Learning Disability Classification System for Autism and Dyslexia**

Nor'ain Mohd Yusoff, Muhammad Hafiz Abdul Wahab, Mohamad Azrulnisyam Aziz, Fauzul Jalil Asha'ari, Multimedia University, Malaysia.

**Building Problem Spaces for Deaf and Hard of Hearing Students' Spatial Cognition in a Programming Language**

Nobuhito Yamamoto, University of Tsukuba, Japan; Tomoyuki Nishioka, Tsukuba University of Technology, Japan; Syoko Shiroma, Ehime University, Japan.

**Assistive Tool for Collaborative Learning of Conceptual Structures**

Lauri Lahti, Helsinki University of Technology, Finland.

**A Contextualised Model for Accessible E-learning in Higher Education: Understanding the Students' Perspective**

Jane Seale, University of Southampton, United Kingdom.

**Building a Programmable Architecture for Non-Visual Navigation of Mathematics: Using Rules for Guiding Presentation and Switching Between Modalities**

Iyad Abu Doush, Enrico Pontelli, New Mexico State University, United States.

**Content Personalization for Inclusive Education through Model-Driven Engineering**

Christopher Power, Richard Paige, University of York, United Kingdom.

**Influence of Students' Motivation on Their Experience with e-Learning Systems: An Experimental Study**

Rosa Lanzilotti, Francesca Montinaro, Carmelo Ardito, University of Bari, Italy.

Thursday 10:30 - 12:30

## VMR

### Advanced Prototyping for Human-Centered Product Design

Room: Towne

Chair(s): Jouke Verlinden, *Delft University of Technology, Netherlands*; Tek-Jin Nam, *Korea Advanced Institute of Science & Technology, Korea*.

### Collaboration Design System Using Internet and Virtual Reality Technology

Hideki Aoyama, Rie Iida, *Keio University, Japan*.

### Evaluation of a Haptic-based Interaction System for Virtual Manual Assembly

Monica Bordegoni, Umberto Cugini, Paolo Belluco, Marcello Aliverti, *Politecnico di Milano, Italy*.

### Trial of Formulating Affordance Features for Product Design

Tamotsu Murakami, Mariko Higuchi, Hideyoshi Yanagisawa, *The University of Tokyo, Japan*.

### Rapidly Prototyping Marker Based Tangible User Interfaces

Maribeth Gandy, Brian Jones, Scott Robertson, Tiffany O'Quinn, *Georgia Institute of Technology, United States*; Amos Johnson, *Morehouse College, United States*.

### Augmented Reality Video See-Through HMD Oriented to Product Design Assessment

Giandomenico Caruso, Umberto Cugini, *Politecnico di Milano, Italy*.

### A Real-Virtual Mapping Method for Mechanical Product Assembly Process Planning in Virtual Assembly Environment

Xiumin Fan, Gao Feng, Hongmin Zhu, Dianliang Wu, Qi Yin, *Shanghai Jiao Tong University, P.R. China*.

## IDGD

### Human-Culture Interaction Beyond HCI

Room: Sunset

Chair(s): Rungtai Lin, *National Taiwan University of Arts, Taiwan*.

### Constructing a Model of Internet-based Career Information System for Industrial Design Students in Universities

Ming-Ying Yang, *National United University, Taiwan*; Manlai You, Ya-Lin Tu, *National Yunlin University of Science & Technology, Taiwan*; Yung-Ping Chou, *National Central University, Taiwan*.

### The Cultural Creative of Product Design for Pingtung County in Taiwan

Yen-Yu Kang, *National Kaohsiung Normal University, Taiwan*; Ming-Shean Wang, *Ming Dao University, Taiwan*; Wei-Shiang Hung, Han-Yu Lin, *National Kaohsiung Normal University, Taiwan*.

### An Investigation of the Relationship Between Digit Ratio and Spatial Ability

Han-Yu Lin, *National Kaohsiung Normal University, Taiwan*; Moli Yeh, *Ming Dao University, Taiwan*; Yen-Yu Kang, *National Kaohsiung Normal University, Taiwan*.

### A Cross-Cultural Study on the Perception of Sociability within Human-Computer Interaction

Fang-Wu Tung, *National United University, Taiwan*; Keiichi Sato, *Illinois Institute of Technology, United States*; Yi-Shin Deng, *National Chiao Tung University, Taiwan*; Tsai-Yi Lin, *Ming Dao University, Taiwan*.

### A Study of Innovation Design on Taiwan Culture Creative Product - A Case Study of the Facial Mask of Ba Ja Jang

Chi-Hsiung Chen, Being-Chen Chen, Cheng-Dar Jan, *National Pingtung University of Science & Technology, Taiwan*.

### Cultural Aspect of Interaction Design -- Beyond Human-Computer Interaction

Rungtai Lin, Po-Hsien Lin, Wen-Shin Shiao, *National Taiwan University of Arts, Taiwan*; Su-Huei Lin, *Ming Dao University, Taiwan*.

### A study of Service Innovation Design in Cultural and Creative Industry

Yu-Yuan Ko, *Jaguar Cars, Taiwan*; Po-Hsien Lin, Rungtai Lin, *National Taiwan University of Arts, Taiwan*.

## OCSC

### User Innovation Networks

Room: Sunrise

Chair(s): Niki Lambropoulos, *London South Bank University, United Kingdom*.

### Distributed Leadership, Trust and Online Communities

Jill Jameson, *University of Greenwich, United Kingdom*.

### Weighting Structures: Evolutionary Dynamics of Innovation Networks in Virtual Communities

Vitaliano Andrea Barberio, *University of Bologna, Italy*; Alessandro Lomi, *University of Lugano, Switzerland*.

### The Innovation Architectures of Facebook

Susan Ferebee, James Davis, *University of Phoenix, United States*.

### Innovation Networks: A Report on Creating a Specialist Professional Social Network, offline and online, to foster innovation in the new media sector

Robert Cotton, *Arts Institute at Bournemouth, United Kingdom*.

### User Innovation Networks & Research Challenges

Niki Lambropoulos, *London South Bank University, United Kingdom*; Panagiotis Kampylis, *University of Jyväskylä, Finland*; Aneesha Bakharia, *Queensland University of Technology, Australia*.

### Modding as Rating Behavior in Virtual Communities: The Case of Rooster Teeth Productions

Stefan Haefliger, Philip Reichen, Peter Jaeger, Georg Von Krogh, *ETH Zurich, Switzerland*.

## AC

### User State Sensing: Applications

Room: Royal Palm Salon Five

Chair(s): Santosh Mathan, *Honeywell Laboratories, United States*.

### Combining Electroencephalograph and Functional Near Infrared Spectroscopy to Explore Users' Mental Workload

Leanne Hirshfield, Krysta Chauncey, Rebecca Gulotta, Audrey Girouard, Erin Solovey, Robert Jacob, Angelo Sassaroli, Sergio Fantini, *Tufts University, United States*.

### Evaluating Training with Cognitive State Sensing Technology

Patrick Craven, Polly Tremoulet, Joyce Barton, Steven Tourville, Yaela Dahan-Marks, *Lockheed Martin, United States*.

### Wearable Modular Device for Facilitation of Mapping and Optimization of Post-nap Performance

Djordje Popovic, Giby Raphael, Robin Johnson, Gene Davis, Chris Berka, *Advanced Brain Monitoring, Inc., United States*.

### Motion-Sickness Related Brain Areas and EEG Power Activates

Yu-Chieh Chen, *National Chiao Tung University, Taiwan*; Jeng-Ren Duann, *University of California, San Diego, United States*; Chun-Ling Lin, Shang-Wen Chuang, *National Chiao Tung University, Taiwan*; Tzzy-Ping Jung, *University of California, San Diego, United States*; Chin-Teng Lin, *National Chiao Tung University, Taiwan*.

### Investigation of Sleepiness induced by Insomnia Medication Treatment and Sleep Deprivation

Ioanna Chouvarda, Emmanouil Michail, Athina Kokonozi, *Aristotle University of Thessaloniki, Greece*; Luc Staner, Nathalie Domis, *FORENAP, France*; Nicos Maglaveras, *Aristotle University of Thessaloniki, Greece*.

AC

**Sensing and Mitigating Cognitive States**

Room: Royal Palm Salon Six  
 Chair(s): Glenn Osga, *Space & Naval Warfare Systems Center, United States*; Tjerk De Greef, *Delft University of Technology, Netherlands*.

**Measuring Cognitive Workload in Non-military Scenarios - Criteria for Sensor Technologies**

Jörg Voskamp, Bodo Urban, *Fraunhofer, Germany*.

**Utilizing secondary input from passive Brain-Computer Interfaces for enhancing Human-Machine Interaction**

Thorsten Zander, Christian Kothe, Sebastian Welke, Matthias Roetting, *Berlin University of Technology, Germany*.

**Improved Team Performance Using EEG- and Context-Based Cognitive-State Classifications for a Vehicle Crew**

Kevin Dixon, *Sandia National Laboratories, United States*; Konrad Hagemann, *Daimler AG, Germany*; Justin Basilio, Chris Forsythe, *Sandia National Laboratories, United States*; Siegfried Rothe, Michael Schrauf, Wilhelm Kincsés, *Daimler AG, Germany*.

**Are You Really Looking? Finding the Answer Through Fixation Patterns and EEG**

Anne-Marie Brouwer, Maarten Hogervorst, *TNO Human Factors, Netherlands*; Pawel Herman, *Donders Institute for Brain, Cognition and Behaviour, Netherlands*; Frank Kooi, *TNO Human Factors, Netherlands*.

**Transcranial Doppler: A Tool for Augmented Cognition in Virtual Environments**

Beatriz Rey, Mariano Alcañiz, Valery Naranjo, *Universidad Politécnica de Valencia, Spain*; Jose Tembl, Vera Parkhutik, *Hospital Universitari La Fe, Valencia, Spain*.

**Eye Movement as Indicators of Mental Workload to Trigger Adaptive Automation**

Tjerk De Greef, *Delft University of Technology, Netherlands*; Harmen Lafeber, *University of Utrecht, TNO Defense, Security and Safety, Netherlands*; Herre Van Oostendorp, *University of Utrecht, Netherlands*; Jasper Lindenberg, *TNO Defense, Security and Safety, Netherlands*.

DHM

**Systems and Safety - II**

Room: Royal Palm Salon Four  
 Chair(s): Vincent Duffy, *Purdue University, United States*.

Digital Human Modeling

**A Simulation Approach to Understand the Viability of RFID Technology in Reducing Medication Dispensing Errors**

Esther Jun, Jonathan Lee, Xiaobo Shi, *Purdue University, United States*.

**Lessons from Risk Assessment in Radiotherapy**

Enda Fallon, Liam Chadwick, *National University of Ireland Galway, Ireland*; Wil Van der Putten, *University Hospital Galway, Ireland*.

**Analyzing the Effects of a BCMA in Inter-Provider Communication, Coordination and Cooperation**

Gulcin Yucel, *Purdue University, United States*; Bo Hoegel, *Berlin University of Technology, Germany*; Vincent Duffy, *Purdue University, United States*; Matthias Roetting, *Berlin University of Technology, Germany*.

**Prescribing Initiatives and Knowledge Acquisition in Ambulatory Care**

Ashley Benedict, *Purdue University, United States*; Jesse Crosson, *UMDNJ, United States*; Akshatha Pandith, Robert Hannemann, Lynn Nuti, Vincent Duffy, *Purdue University, United States*.

**The Performance of BCMA-aided Healthcare Service: Implementation Factors and Results**

Chris Renran Tian, Vincent Duffy, Carol Birk, Steven Abel, Kyle Hultgren, *Purdue University, United States*.

**Hyperkalemia vs Ischemia Effects in Fast or Unstable Pacing: A Cardiac Simulation Study**

Ioanna Chouvarda, Nicos Maglaveras, *Aristotle University of Thessaloniki, Greece*.

HCD

**Human-Centred Design: the next Big Thing?**

Room: Royal Palm Salon Three  
 Chair(s): Mark Young, *Brunel University, United Kingdom*.

Human Centered Design

**Accommodating Real User and Organisational Requirements in the Human Centered Design Process: A Case Study from the Mobile Phone Industry**

Steve Love, *Brunel University, United Kingdom*; Paul Hunter, *H3G, United Kingdom*; Michael Anaman, *Brunel University, United Kingdom*.

**A Theoretical Model for Cross-cultural Web Design**

Hsiu-Ching Hsieh, *Chinmin Institute of Technology, Taiwan*; Ray Holland, Mark Young, *Brunel University, United Kingdom*.

**Combining Activity Theory and Grounded Theory for the Design of Collaborative Interfaces**

Christine Rivers, Janko Calic, *University of Surrey, United Kingdom*; Amy Tan, *Nottingham Trent University, United Kingdom*.

**Accelerating the Knowledge Innovation Process**

Guillermo Cortes Robles, Giner Alor hernández, Alberto Aguilar Lasserre, Ruben Posada Gómez, *Instituto Tecnológico de Orizaba, Mexico*.

**Examining Individual Differences Effects: An Experimental Approach**

Wan Adilah Wan Adnan, Nor Laila Md. Noor, *Universiti Teknologi MARA, Malaysia*; Nik Ghazali Nik Daud, *Universiti Pertahanan Nasional Malaysia, Malaysia*.

**Development of CSCW Interfaces from a User-Centered Viewpoint: Extending the TOUCHÉ Process Model through Defeasible Argumentation**

Maria Gonzalez, *Universidad Nacional del Sur / CONICET, Argentina*; Victor R. Penichet, *Castilla-La Mancha University, Spain*; Guillermo Simari, *Universidad Nacional del Sur, Argentina*; Ricardo Tesoriero, *Castilla-La Mancha University, Spain*.

**User Experience in HCD**

Room: Royal Palm Salon Two  
 Chair(s): Loïc Martínez-Normand, *Technical University of Madrid (UPM), Spain*.

**Engaging Experience: A New Perspective of User Experience with Physical Products**

Chun-Juei Chou, Chris Conley, *Illinois Institute of Technology, United States*.

**Integrating User Experience into a Software Development Company - A Case Study**

Tobias Komischke, *Infragistics, United States*.

**Measurements and Concepts of Usability and User Experience: Differences between Industry and Academia**

Anja Naumann, Ina Wechsung, Robert Schleicher, *TU Berlin, Deutsche Telekom Laboratories, Germany*.

**User Experience in Machinery Automation - from Concepts and Context to Design Implications**

Jarmo Palviainen, Kaisa Väänänen-Vainio-Mattila, *Tampere University of Technology, Finland*.

**Plugging the Holes: Increasing the Impact of User Experience Evaluations**

Sachin Yambal, Sushmita Munshi, *Accenture, India*.

**An Investigation of User's Mental Models on Website**

Hui-Jiun Hu, Jen Yen, *National Yunlin University of Science & Technology, Taiwan*.

**The Proposal of Quantitative Analysis Method Based on the Method of Observation Engineering**

Tomoki Wada, Toshiki Yamaoka, *Wakayama University, Japan*.

## HIMI

### HCI in MIS

Room: Garden Salon Two

Chair(s): Xiaowen Fang, *DePaul University, United States*; Fiona Nah, *University of Nebraska-Lincoln, United States*.

### Understanding Key Attributes in Mobile Service: Kano Model Approach

Seung Ik Baek, *Hanyang University, Korea*; Seung Kuk Paik, *California State University, Northridge, United States*; Weon Sang Yoo, *Hanyang University, Korea*.

### Effects of AJAX Technology on the Usability of Blogs

Sumonta Kasemvilas, Daniel Firpo, *Claremont Graduate University, United States*.

### Exploring Employee Perspectives on Information Privacy and Security in the Mobile Environment

Peter Tarasewich, Ben Ngugi, Mansi Sanghavi, *Suffolk University, United States*.

### Sensation Seeking, Self Forgetfulness, and Computer Game Enjoyment

Xiaowen Fang, *DePaul University, United States*; Fan Zhao, *Florida Gulf Coast University, United States*.

### An Integrated Approach towards the Homogeneous Provision of Geographically Dispersed Info-Mobility Services to Mobile Users

Dimitrios Giakoumis, *Center for Research and Technology Hellas (CERTH), Greece*; Dimitrios Tzovaras, *Centre for Research and Technology Hellas (CERTH), Greece*; Dionisis Kehagias, *Center for Research and Technology Hellas (CERTH), Greece*; Evangelos Bekiaris, *Centre for Research and Technology Hellas (CERTH), Greece*; George Hassapis, *Aristotle University of Thessaloniki, Greece*.

### A Study on Measurements Model for the Business Performance in Mobile User Interface

Min-Jeong Kim, *Korea Telecom Freetel (KTF), Korea*; Jonghun Park, *Seoul National University, Korea*.

### A Mobile User Interface for Business Knowledge Management (BKM)

Danco Davcev, Marjan Arsic, Dalibor Ilievski, *Ss. Cyril and Methodius University in Skopje, FYROM*.

### User Experience of Enterprise Software

Room: Crescent

Chair(s): Anna Wichansky, *Oracle USA, United States*.

### Designing International Enterprise Software

Janaki Kumar, Daniel Rosenberg, Paul Hofmann, Michael Arent, *SAP Labs, United States*.

### From Research to Product: Integrating Treemaps into Enterprise Software

Joseph Goldberg, Jonathan Helfman, John Beresniewicz, *Oracle USA, United States*.

### Successful User Experience in an Agile Enterprise Environment

Melissa Federoff, Catherine Courage, *salesforce.com, United States*.

### Customer Boards as Vehicles of Change in Enterprise Software User Experience

Anna Wichansky, *Oracle USA, United States*.

### A Retrospective and Prospective View of Information Technology Professionals' Use of Tools: Maturing the User Experience

Candace Soderston, *Microsoft Corporation, United States*.  
**Crafting Contemporary Enterprise Application User Experiences**  
 Jeremy Ashley, Misha Vaughan, *Oracle USA, United States*.

### Designing for the Next Generation: Generation-Y Expectations

Patanjali Venkatacharya, Sean Rice, Lulit Bezuayehu, *Oracle USA, United States*.

## HCI

### Smart Textiles and Clothing

Room: Garden Salon One

Chair(s): Gilsoo Cho, *Yonsei University, Korea*.

### Usability Studies on Sensor Smart Clothing

Haeng-Suk Chae, Woon Jung Cho, Soo Hyun Kim, Kwang-Hee Han, *Yonsei University, Korea*.

### Novel Stretchable Textile-Based Transmission Bands: Electrical Performance and Appearance after Abrasion/Laundering, and Wearability

Yoonjung Yang, Gilsoo Cho, *Yonsei University, Korea*.

### Establishing a Measurement System for Human Motions Using a Textile-based Motion Sensor

Moonsoo Sung, *Yonsei University, Korea*; Kee Sam Jeong, *Yongin Songdam College, Korea*; Gilsoo Cho, *Yonsei University, Korea*.

### Standardization for Smart Clothing Technology

Kwang-il Lee, Yong Gu Ji, *Yonsei University, Korea*.

### Considering Personal Profiles for Comfortable and Efficient Interactions with Smart Clothes

Sébastien Duval, *Yonsei University, Korea*; Christian Hoareau, *National Institute of Informatics, Japan*; Gilsoo Cho, *Yonsei University, Korea*.

### Wearable ECG Monitoring System Using Conductive Fabrics and Active Electrodes

Su Ho Lee, *Yonsei University, Korea*; Seok Myung Jung, Chung Ki Lee, *Yonsei University College, Korea*; Kee Sam Jeong, *Yongin Songdam College, Korea*; Gilsoo Cho, Sun Yoo, *Yonsei University, Korea*.

### Gold Coating of a Plastic Optical Fiber based on PMMA

Seok Min Kim, Sung Hun Kim, Eun Ju Park, Dong Lyun Cho, Moo Sung Lee, *Chonnam National University, Korea*.

### Designing Intelligent Interaction Environments

Room: Pacific Salon Three

Chair(s): Lajos Izsó, *Budapest University of Technology and Economics, Hungary*.

### The Gestural Input System for Living Room Digital Devices

Wen-Shan Chang, Fong-Gong Wu, *National Cheng Kung University, Taiwan*.

### Fly! Little Me: Localization of Body-Image within Reduced-Self

Tatsuya Saito, Masahiko Sato, *Tokyo University of the Arts, Japan*.

### DiamondTheater: A System for Reproducing Theater and Supporting Creative Activities

Tatsushi Takeuchi, Koichiro Watanabe, *Keio University, Japan*; Tomoo Inoue, *University of Tsukuba, Japan*; Ken-ichi Okada, *Keio University, Japan*.

### WeMe: Seamless Active and Passive Liquid Communication

Nicolas Masson, Wendy Mackay, *INRIA Saclay, France*.

### Human Computer Interaction with a PIM Application: Merging Activity, Location and Social Setting into Context

Tor-Morten Gronli, *Norwegian School of Information Technology, Norway*; Gheorghita Ghinea, *Brunel University, United Kingdom*.

### An Embodied Approach for Engaged Interaction in Ubiquitous Computing

Mark Millard, Firat Soylu, *Indiana University, United States*.

### Rapid Prototyping of an Aml-augmented Office Environment Demonstrator

Dimitris Grammenos, Yannis Georgalis, Nikolaos Partarakis, Xenophon Zabalus, Thomas Sarmis, Sokratis Kartakis, Panagiotis Tourlakis, Antonis Argyros, Constantine Stephanidis, *Foundation for Research & Technology - Hellas (FORTH), Greece*.

# Parallel Sessions

## HCI

### Beyond Usability

Room: Windsor

Chair(s): Henning Breuer, Bovacon / Deutsche Telekom Labs / Waseda University, Germany.

### Study of Human Anxiety on the Internet

Santosh Kalwar, Kari Heikkinen, Lappeenranta University of Technology, Finland.

### Trust in Online Technology: Towards Practical Guidelines Based on Experimentally Verified Theory

Christian Detweiler, Joost Broekens, Delft University of Technology, Netherlands.

### Aesthetics in Human-Computer Interaction: Views and Reviews

Salah Ahmed, Norwegian University of Science and Technology, Norway; Abdullah Al Mahmud, Eindhoven University of Technology (TU/e), Netherlands; Kristin Bergaust, Oslo University College, Norway.

### Feature Extraction and Selection for Inferring User Engagement in an HCI Environment

Stylianos Asteriadis, Kostas Karpouzis, Stefanos Kollias, National Technical University of Athens, Greece.

### A Human-Centered Model for Detecting Technology Engagement

James Glasnapp, Oliver Brdiczka, Palo Alto Research Center (PARC), United States.

### Love at First Encounter - Startup of New Applications

Henning Breuer, Bovacon / Deutsche Telekom Labs / Waseda University, Germany; Marlene Kettner, TU Berlin, Deutsche Telekom Laboratories, Germany; Matthias Wagler, Intuity, Germany; Nathalie Preuschen, T-Mobile, Germany; Fee Steinhoff, TU Berlin, Deutsche Telekom Laboratories, Germany.

### Designers of Different Cognitive Styles Editing E-Learning Materials Studied by Monitoring Physiological and Other Data Simultaneously

Karoly Hercegn, Budapest University of Technology and Economics, Hungary; Olga Csillik, Éva Bodnár, Judit Sass, Corvinus University of Budapest, Hungary; Lajos Izsó, Budapest University of Technology and Economics, Hungary.

### Novel Advanced Interaction Scenarios

Room: Hampton

Chair(s): Masayuki Numao, Osaka University, Japan.

### Low Cost Flexible Wrist Touch UI Solution

Bin Wang, Nokia Research Center, Beijing, P.R. China; Chenguang Cai, Nokia Inc., System Research Center (Beijing), P.R. China; Emilia Koskinen, Nokia, Finland; Tang Zhenqi, Huayu Cao, Leon Xu, Nokia Research Center, Beijing, P.R. China; Antti Salo, Nokia Research Center, Beijing, Finland.

### The Impact of Different Visual Feedback Presentation Methods in a Wearable Computing Scenario

Hendrik Iben, Hendrik Witt, TZI - University of Bremen, Germany; Ernesto Morales Kluge, BIBA GmbH - University of Bremen, Germany.

### Real-Time Face Tracking and Recognition Based on Particle Filtering and AdaBoosting Techniques

Ming-Jui Kuo, Chin-Shyurng Fahn, Kai-Yi Wang, National Taiwan University of Science & Technology, Taiwan.

### A Multimodal Human-Robot-Interaction Scenario: Working Together with an Industrial Robot

Alexander Bannat, Jürgen Gast, Tobias Rehl, Wolfgang Rösel, Gerhard Rigoll, Frank Wallhoff, Technical University of Munich, Germany.

### cfHMI: A Novel Contact-Free Human-Machine Interface

Tobias Rehl, Alexander Bannat, Jürgen Gast, Gerhard Rigoll, Frank Wallhoff, Technical University of Munich, Germany.

### An Interactive Robot Butler

Yeow Kee Tan, Dilip Kumar Limbu, Ridong Jiang, Liyuan Li, Kah Eng Hoe, Xinguo Yu, Dong Li, Chern Yuen Wong, Haizhou Li, Institute for Infocomm Research, Singapore.

### New Integrated Framework for Video Based Moving Object Tracking

Md. Zahidul Islam, Chi-Min Oh, Chil-woo Lee, Chonnam National University, Korea.

### Enhancing Visual Interaction

Room: Sheffield

Chair(s): Guangfeng Song, Pennsylvania State University, United States.

### Modeling the Difficulty for Centering Rectangles in One and Two Dimensions

Robert Pastel, Michigan Technological University, United States.

### A Zoomable User Interface for Presenting Hierarchical Diagrams on Large Screens

Christian Geiger, Duesseldorf University of Applied Sciences, Germany; Holger Reckter, Harz University of Applied Sciences, Germany; Roman Dumitrescu, Sascha Kahl, Jan Berssenbruegge, University of Paderborn, Germany.

### Specification of a Drawing Facility for Diagram Editors

Sonja Maier, Mark Minas, Universität der Bundeswehr München, Germany.

### Enhancing the Accessibility of Maps with Personal Frames of Reference

Falko Schmid, University of Bremen, Germany.

### Providing an Efficient Way to Make Desktop Icons Visible

Toshiya Akasaka, Yusaku Okada, Keio University, Japan.

### Sphere Anchored Map: A Visualization Technique for Bipartite Graphs in 3D

Takao Ito, Kazuo Misue, Jiro Tanaka, University of Tsukuba, Japan.

### Improv: A System for Improvisational Construction of Video Processing Flow

Atsutomo Kobayashi, Buntarou Shizuki, Jiro Tanaka, University of Tsukuba, Japan.

## EPCE

### Multi-modal Icon Design: Vision, Audition and Emotion

Room: Towne

Chair(s): Sine McDougall, Bournemouth University, United Kingdom.

### Visual Complexity: Is that All There is?

Alexandra Forsythe, Liverpool John Moores University, United Kingdom.

### Graphics and Semantics: The Relationship Between What is Seen and What is Meant in Icon Design

Sarah Isherwood, University of Leeds, United Kingdom.

### The User Knows: Considering the Cognitive Contribution of the User in the Design of Auditory Warnings

Catherine Stevens, Agnes Petocz, University of Western Sydney, Australia.

### Beyond Emoticons: Combining Affect and Cognition in Icon Design

Sine McDougall, Bournemouth University, United Kingdom; Irene Reppa, Swansea University, United Kingdom; Gary Smith, Bournemouth University, United Kingdom; David Playfoot, Swansea University, United Kingdom.

### Effects of Design Elements in Magazine Advertisements

Young Sam Ryu, Taewon Suh, Sean Dozier, Texas State University-San Marcos, United States.

### The Use of Multimodal Representations in Icon Interpretation

Sine McDougall, Bournemouth University, United Kingdom; Alexandra Forsythe, Liverpool John Moores University, United Kingdom; Sarah Isherwood, University of Leeds, United Kingdom; Agnes Petocz, University of Western Sydney, Australia; Irene Reppa, Swansea University, United Kingdom; Catherine Stevens, University of Western Sydney, Australia.

### Towards Cognitive-Aware Multimodal Presentation: the Modality Effects in High-Load HCI

Yujia Cao, Mariet Theune, Anton Nijholt, University of Twente, Netherlands.

Engineering Psychology and Cognitive Ergonomics

Thursday 13:30 - 15:30

**UAHCI**

**Non-conventional Interaction Techniques**

*Room: Pacific Salon One*  
Chair(s): Tiziana Catarci, «Sapienza» University of Rome, Italy.

**Sonification of Spatial Information: Audio-tactile Exploration Strategies by Normal and Blind Subjects**  
Marta Olivetti Belardinelli, «Sapienza» University of Rome, Italy; Stefano Federici, University of Perugia, Italy; Franco Delogu, Massimiliano Palmiero, «Sapienza» University of Rome, Italy.

**Interactive Accessible Notifications for Emergency Notification Systems**  
Alessio Malizia, Teresa Onorati, Carlos III University of Madrid, Spain; Andrea Bellucci, «Sapienza» University of Rome, Italy; Paloma Diaz, Ignacio Aedo, Carlos III University of Madrid, Spain.

**«Where did I put that?» - Effectiveness of Kinesthetic Memory in Immersive Virtual Environments**  
Achim Ebert, Matthias Deller, Daniel Steffen, Matthias Heintz, German Research Center for Artificial Intelligence (DFKI), Germany.

**FireScanner: A Browser Scanning Add-on for Users with Motor Impairments**  
Stavroula Ntoa, George Margetis, Constantine Stephanidis, Foundation for Research & Technology - Hellas (FORTH), Greece.

**Interacting With the Environment Through Non-invasive Brain-Computer Interfaces**  
Febo Cincotti, Fondazione Santa Lucia, Italy; Lucia Rita Quitadamo, Tor Vergata University, Italy; Fabio Aloise, Fondazione Santa Lucia, Italy; Luigi Bianchi, Tor Vergata University, Italy; Fabio Babiloni, «Sapienza» University of Rome, Italy; Donatella Mattia, Fondazione Santa Lucia, Italy.

**Utilizing an Acelerometric Bracelet for Ubiquitous Gesture-based Interaction**  
Albert Hein, Andre Hoffmeyer, Thomas Kirste, University of Rostock, Germany.

**Vis-A-Wis : Improving Visual Accessibility Through Automatic Web Content Adaptation**  
Giuseppe Santucci, «Sapienza» University of Rome, Italy.

**Universal Accessibility of Documents - II**

*Room: Pacific Salon Two*  
Chair(s): Georgios Kouroupetroglou, National & Kapodistrian University of Athens, Greece.

**On the Gap Between Automated and In-Vivo Evaluations of Web Accessibility**  
Rui Lopes, Luis Carriço, University of Lisbon, Portugal.

**Gaze and Gesture Activity in Communication**  
Kristiina Jokinen, University of Helsinki, Finland.

**Engineering User Centered Interaction Systems for Semantic Visualizations**  
Kawa Nazemi, Thomas Ullmann, Christoph Hornung, Fraunhofer, Germany.

**Verb Processing in Spoken Commands for Household Security and Appliances**  
Ioanna Malagardi, Christina Alexandris, National & Kapodistrian University of Athens, Greece.

**Enhancing Web Document Accessibility by Authoring Texts and Text Comprehension Activities**  
Grammatiki Tsaganou, National & Kapodistrian University of Athens, Greece; Maria Samarakou, Technological Educational Institute of Athens, Greece; Panagiotis Blitsas, Maria Grigoriadou, National & Kapodistrian University of Athens, Greece.

**Acoustic Rendering of Data Tables Using Earcons and Prosody for Document Accessibility**  
Dimitrios Spiliotopoulos, Panagiota Stavropoulou, Georgios Kouroupetroglou, National & Kapodistrian University of Athens, Greece.

**VMR**

**Advanced 3D User Interfaces in Mixed Reality Environment**

*Room: Royal Palm Salon Six*  
Chair(s): Hirokazu Kato, Nara Institute of Science and Technology, Japan.

**MR-Mirror: A Complex of Real and Virtual Mirrors**  
Hideaki Sato, Itaru Kitahara, Yuichi Ohta, University of Tsukuba, Japan.

**Shape Disparity Inspection of The Textured Object and Its Notification by Overlay Projection**  
Toshiyuki Amano, Hirokazu Kato, Nara Institute of Science and Technology, Japan.

**AR Display for Observing Sports Events based on Camera Tracking Using Pattern of Ground**  
Akihito Enomoto, Hideo Saito, Keio University, Japan.

**Mobile Interfaces Using Body Worn Projector and Camera**  
Nobuchika Sakata, Teppei Konishi, Shogo Nishida, Osaka University, Japan.

**Analysis of Tactual Impression by Audio and Visual Stimulation for User Interface Design in Mixed Reality Environment**  
Mami Kagimoto, Ritsumeikan University, Japan; Asako Kimura, Japan Science and Technology Agency, Japan; Fumihisa Shibata, Hideyuki Tamura, Ritsumeikan University, Japan.

**Augmented Reality System for Dental Implant Surgery**  
Satoshi Yamaguchi, Takafumi Ohtani, Hirofumi Yatani, Taiji Sohamura, Osaka University, Japan.

**Advanced Interaction Techniques for Augmented Reality Applications**  
Mark Billingham, University of Canterbury, New Zealand; Hirokazu Kato, Seiko Myojin, Nara Institute of Science and Technology, Japan.

**IGDG**

**Application of User Interface Design Methodologies for Software Engineering**

*Room: Sunrise*  
Chair(s): Joyram Chakraborty, UMBC, United States.

**The Use of Hypertext as a Vocabulary Acquisition Strategy for English as Second Language Learners**  
Devshikha Bose, Dotty Sammons, Idaho State University (ISU), United States.

**Considerations for Using Eye Trackers During Usability Studies**  
Anjali Phukan, Margaret Re, UMBC, United States.

**Cross Cultural Computer Gaming**  
Joyram Chakraborty, Anthony Norcio, UMBC, United States.

**Anthropomorphic Systems: An Approach for Categorization**  
Kathryn Howe, Travelers Insurance, United States.

**Developers and Moderators: Observations in the Co-development of an Online Social Space**  
David Gurzick, Kevin White, UMBC, United States.

**Rescaling nonmetric data to metric data using Multi-Dimensional Scaling**  
Kelley Engle, Guiseppe Forgionne, UMBC, United States.

**A Systematic Review of Technologies Designed to Improve and Assist Cognitive Decline for both the Current and Future Aging Populations**  
Kelley Gurley, Anthony Norcio, UMBC, United States.

# Parallel Sessions

## IDGD

### Cultural Interface Design

Room: *Sunset*

Chair(s): Kun-Pyo Lee, *Korea Advanced Institute of Science & Technology (KAIST), Korea.*

### Culture and Co-experience: Cultural Variation of User Experience in Social Interaction and its Implications for Interaction Design

Jung-Joo Lee, *University of Art and Design Helsinki, Finland.*

### Exploring Cultural Context Using the Contextual Scenario Framework

Eric Swanson, Keiichi Sato, Judith Gregory, *Illinois Institute of Technology, United States.*

### Cultural Dimensions in User Preferences and Behaviors of Mobile Phones and Interpretation of National-Cultural Differences

Juhyun Eune, *Seoul National University, Korea*; Kun-Pyo Lee, *Korea Advanced Institute of Science & Technology (KAIST), Korea.*

### Multilevel Cross-Cultural Influences in User Experience Research: Focus on Discipline - Nationality Combination

Thu Trang Tran, Kun-Pyo Lee, *Korea Advanced Institute of Science & Technology (KAIST), Korea.*

### Application of the Labeled Magnitude Scale in Kansei Research

Chun Yueh Chen, Kuohsiang Chen, *National Cheng Kung University, Taiwan.*

### Design of Face-to-face Multilingual Communication Environment for Illiterate People

Mai Miyabe, Takashi Yoshino, *Wakayama University, Japan.*

## OCSC

### Beyond Virtual: Building Intercultural Competence with Social Games and Online Communities

Room: *Royal Palm Salon Five*

Chair(s): Elaine Raybourn, *Sandia National Laboratories, United States.*

### The Coming Revolution in Competence Development: Using Serious Games to Improve Cross-Cultural Skills

Bjørn Andersen, *Norwegian University of Science and Technology, Norway*; Manuel Fradinho, *Cnytelix, Ireland*; Paul Lefrere, *University of Tampere, Finland*; Veli-Pekka Niitamo, *Nokia / CKIR, Finland.*

### Leveraging Mobile Devices to Develop Intercultural Competency for Digital Students

Matthew Willis, Elaine Raybourn, *Sandia National Laboratories, United States.*

### Antecedents of Attributions in an Educational Game for Social Learning: Who's to Blame?

Amy Ogan, Vincent Alevan, *Carnegie Mellon University, United States*; Julia Kim, *University of Southern California, United States*; Christopher Jones, *Carnegie Mellon University, United States.*

### The Whole Story: Retrieving Narratives for Cross-Cultural Understanding

Alex Davis, *Stottler Henke Associates, Inc., United States.*

### City Ragas: Building an Intercultural Dialogue between People

Lipika Bansal, *Waag Society, Netherlands.*

### Developing Believable Interactive Cultural Characters for Cross-Cultural Training

Glenn Taylor, *Soar Technology, Inc., United States*; Ed Sims, *Vcom3D, Inc., United States.*

### The First Two W's: Fostering Multicultural Awareness in Children

Noah Falstein, *The Inspiracy, United States*; Nicolle Ruetz, *Little Wing World, Chile.*

## AC

### Augmenting Cognition in High Demand Environments- Application of Augmented Cognition in the Military, Space and Health Care Domain

Room: *Royal Palm Salon Four*

Chair(s): Marc Grootjen, *Defense Material Organization, Royal Netherlands Navy, Netherlands.*

### Members of the Panel Sessions:

Robert McCann, Glenn Osga, Mark Neerincx, Thorsten Zander, Roman Vilimek

## DHM

### Human Performance Modeling in Safety Critical Systems

Room: *Royal Palm Salon Three*

Chair(s): Leon Urbas, *Dresden University of Technology, Germany*; Andreas Luedtke, *OFFIS e.V., Germany.*

### A Simple Simulation Predicting Driver Behavior, Attitudes and Errors

Aladino Amantini, Pietro Carlo Cacciabue, *KITE Solutions, SNC, Italy.*

### Modeling Pilot and Driver Behaviour for Human Error Simulation

Andreas Luedtke, Lars Weber, Jan-Patrick Osterloh, Bertram Wortelen, *OFFIS e.V., Germany.*

### A Comprehension Based Cognitive Model of Situation Awareness

Martin Baumann, *TNO Defence, Security and Safety, Germany*; Josef Krems, *University of Technology Chemnitz, Germany.*

### Intelligent Agents for Training On-board Fire Fighting

Karel Van den Bosch, Maaike Harbers, Annerieke Heuvelink, Willem Van Doesburg, *TNO Defence, Security and Safety, Netherlands.*

### Multilevel Analysis of Human Performance Models in Safety-Critical Systems

Jeronimo Dzaack, *Berlin University of Technology, Germany*; Leon Urbas, *Dresden University of Technology, Germany.*

### A Contribution to Integrated Driver Modeling: A Coherent Framework for Modeling both Non-Routine and Routine Elements of the Driving Task

Andreas Mihalyi, Barbara Deml, *Bundeswehr University Munich, Germany*; Thomas Augustin, *Ludwig-Maximilians-University Munich, Germany.*

### Nautical PSI - Virtual Nautical Officers as Test Drivers in Ship Bridge Design

Ulrike Brüggemann, Stefan Strohschneider, *University of Jena, Germany.*

### Probabilistic and Empirical Grounded Modeling of Agents in (Partial) Cooperative Traffic Scenarios

Claus Möbus, Mark Eilers, Hilke Garbe, *University of Oldenburg, Germany*; Malte Zilinski, *OFFIS e.V., Germany.*

Online Communities and Social Computing

Augmented Cognition

Digital Human Modeling

Thursday 13:30 - 15:30

**HCD**

**Usability in the Context of Culture**

*Room: Royal Palm Salon Two*  
Chair(s): Masaaki Kurosu, *The Open University of Japan, Japan.*

**Towards a Theory of Cultural Usability: A comparison of ADA and CMU Theory**

Torkil Clemmensen, *Copenhagen Business School, Denmark.*

**Multimodal Corpus Analysis as a Method for Ensuring Cultural Usability of Embodied Conversational Agents**

Yukiko Nakano, *Seikei University, Japan*; Matthias Rehm, *University of Augsburg, Germany.*

**Grouping Preferences of Americans and Koreans in Interfaces for Smart Home Control**

Kyeong-Ah Jeong, *Purdue University, United States*; Robert Proctor, *Purdue University, United States*; Gavriel Salvendy, *Purdue University / Tsinghua University, United States.*

**The Value of Answers Without Question[s]. A Qualitative Approach to User Experience and Aging.**

Anna Pohlmeier, *Berlin Institute of Technology, Germany*; Lucienne Blessing, *University of Luxembourg, Luxembourg*; Hartmut Wandke, *Humboldt University Berlin, Germany*; Julia Maue, *School of Art and Design Berlin-Weissensee, Germany.*

**Website Affective Evaluation: Analysis of Differences in Evaluations Result by Data Population**

Mohd-Lokman Anitawati, *Fathiyah Harun Afdallyna, Nor Laila Md. Noor, Universiti Teknologi MARA, Malaysia*; Mitsuo Nagamachi, *International Kansei Design Institute, Japan.*

**Culture and Communication Behavior - A Research Based on the Artifact Development Analysis**

Masaaki Kurosu, *The Open University of Japan, Japan*; Ayako Hashizume, *University of Tsukuba, Japan.*

**Culture Design of Information Architecture for B2C E-Commerce Websites**

Wan Abdul Rahim Wan Mohd Isa, *Nor Laila Md. Noor, Shafie Mehad, Universiti Teknologi MARA, Malaysia.*

**Understanding the Mobile User**

*Room: Royal Palm Salon One*  
Chair(s): Tobias Komischke, *Infragistics, United States.*

**Elicitation of User Requirements for Mobile Interaction with Visual and RFID Tags: a Prototype-Based Exploratory Study**

Margarita Anastassova, *CEA LIST, France*; Oscar Mayora, *CREATE-NET International Research Center, Italy.*

**User Value Based Product Adaptation: A Case of Mobile Products for Chinese Urban Elderly People**

Jikun Liu, *Xin Liu, Tsinghua University, P.R. China.*

**Design for China Migrant Workers: A Case of User Research and Mobile Product Concepts Development**

Xin Liu, *Jikun Liu, Jun Cai, Tsinghua University, P.R. China*; Ying Liu, *Xia Wang, Nokia Research Center, Beijing, P.R. China.*

**User Needs of Mobile Phone Wireless Search: Focusing on Search Result Pages**

Yeon Ji Kim, *Sun Ju Jeon, Min-Jeong Kim, Korea Telecom Freetel (KTF), Korea.*

**Exploring the Interface Design of Mobile Phone for the Elderly**

Chiuhsiang Joe Lin, *Tsung-Ling Hsieh, Wei-Jung Shiang, Chung Yuan Christian University, Taiwan.*

**Empowering End Users in Design of Mobile Technology Using Role Play as a Method: Reflections on the Role-Play Conduction**

Gry Seland, *Norwegian University of Science and Technology, Norway.*

**Interaction Techniques for Binding Smartphones: A Desirability Evaluation**

Umar Rashid, *Aaron Quigley, University College Dublin, Ireland.*

**HIMI**

**Human Interface for Management Information System**

*Room: Towne*  
Chair(s): Tsutomu Tabe, *Aoyama Gakuin University, Japan.*

**Development of a Coloration Support Tool for Making Web Page Screens User-Friendly for Color Blind**

Michiko Anse, *Tsutomu Tabe, Aoyama Gakuin University, Japan.*

**A Skill Transfer Method for Manual Machine Tool Operation Utilizing Cutting Sound**

Takashi Kawashimo, *Aoyama Gakuin University, Japan*; Noriaki Sato, *Murata Manufacturing Co., Ltd., Japan*; Daisuke Doyo, *Michiko Anse, Tsutomu Tabe, Aoyama Gakuin University, Japan.*

**Construction of Systematic Learning Support System of Business Theory and Method**

Yoshiki Nakamura, *Nihon University, Japan*; Katsuhiro Sakamoto, *Aoyama Gakuin University, Japan.*

**A Study on Effective Methods of Visual Inspection for Reused-Parts by Inspectors**

Toshuyuki Matsumoto, *Hideki Shirai, Aoyama Gakuin University, Japan*; Keisuke Shida, *Nagaoka University of Technology, Japan.*

**A Method for Evaluating the Relationship among Four Perspectives of the Balanced Scorecard**

Yumiko Taguchi, *Shohoku College, Japan*; Takumi Kaneko, *Tsutomu Tabe, Aoyama Gakuin University, Japan.*

**A Study on a Method of Support for Improving the Motivation of Employees**

Daisuke Yatsuzuka, *Aoyama Gakuin University, Japan*; Yumiko Taguchi, *Shohoku College, Japan*; Tsutomu Tabe, *Aoyama Gakuin University, Japan.*

**Internal Aspects of the Relationship between Pressing Force and Training Difficulty**

Daisuke Doyo, *Aoyama Gakuin University, Japan.*

**Information Search**

*Room: Sunrise*  
Chair(s): Michael Smith, *University of Wisconsin-Madison, United States.*

**InfoScope: A Browser for User Behavior-based Information Retrieval System**

Masaaki Kawata, *Katsuhiko Ogawa, Keio University, Japan.*

**Content Based Image Retrieval using Adaptive Inverse Pyramid Representation**

Mariofanna Milanova, *University of Arkansas at Little Rock, United States*; Roumen Kountchev, *Technical University of Sofia, Bulgaria*; Stuart Rubin, *Space & Naval Warfare Systems Center, Pacific (SSC PAC), United States*; Vladimir Todorov, *Roumiana Kountcheva, T&K Engineering, Bulgaria.*

**Visual String Of Reformulation**

Arne Berger, *Jens Kürsten, Maximilian Eibl, University of Technology Chemnitz, Germany.*

**The Persuasive Effects from Web 2.0 Marketing: A Case Study Investigating the Persuasive Effect from an Online Design Competition**

Asle Fagerström, *Norwegian School of Information Technology, Norway*; Gheorghita Ghinea, *Brunel University, United Kingdom.*

**Evaluation of Web User Interfaces for the Online Retail of Apparel**

Dominik Rupperecht, *Rainer Blum, Karim Khakzar, Fulda University of Applied Sciences, Germany.*

Human Interface and the Management of Information

Human Centered Design

Thursday 16:00 - 18:00

# Parallel Sessions

## HIMI

### Privacy, Security and Trust

Room: Sunset

Chair(s): Pavel Ocenasek, Brno University of Technology, Czech Republic.

### Towards Security Issues in ZigBee Architecture

Pavel Ocenasek, Brno University of Technology, Czech Republic.

### The Assessment of Credibility of e-Governments: Users' Perspective

Zhao Huang, Laurence Brooks, Sherry Chen, Brunel University, United Kingdom.

### Smart Privacy Management in Ubiquitous Computing Environments

Christian Bünnig, University of Rostock, Germany.

### «Online Legitimacy» – Defining Institutional Symbolisms for the Design of Information Artifact in the Web Mediated Information Environment (W-MIE)

Emma Nuraihan Mior Ibrahim, Nor Laila Md. Noor, Universiti Teknologi MARA, Malaysia.

### Patient Standardization Identification as a Healthcare Issue

Mario Macedo, Escola Superior de Tecnologia de Abrantes, Portugal; Pedro Isaías, Universidade Aberta, Portugal.

### A Proposal of Collection and Analysis System of Near Miss Incident in Nursing Duties

Akihisa Furukawa, Yusaku Okada, Keio University, Japan.

## HCI

### Dealing with Complex Human-Computer Interactions: Examples of Affective and Cultural Management

Room: Hampton

Chair(s): Emmanuel Blanchard, McGill University, Canada.

### Optimal Affective Conditions for Subconscious Learning in a 3D Intelligent Tutoring System

Pierre Chalfoun, Claude Frasson, Université de Montréal, Canada.

### Recognizing and Responding to Student Affect

Beverly Woolf, Toby Dragon, Ivon Arroyo, David Cooper, University of Massachusetts Amherst, United States; Winslow Burleson, Kasia Muldner, Arizona State University, United States.

### Responding to Learners' Cognitive-Affective States with Supportive and Shakeup Dialogues

Sidney D'Mello, Scotty Craig, Karl Fike, Arthur Graesser, University of Memphis, United States.

### Addressing the Interplay of Culture and Affect in HCI: An Ontological Approach

Emmanuel Blanchard, McGill University, Canada; Riichiro Mizoguchi, Osaka University, Japan; Susanne Lajoie, McGill University, Canada.

### Promoting Metacognition in Immersive Cultural Learning Environments

H. Chad Lane, University of Southern California, United States.

### Some Pitfalls for Developing Enculturated Conversational Agents

Matthias Rehm, Elisabeth André, University of Augsburg, Germany; Yukiko Nakano, Seikei University, Japan.

### Embodied Interaction and Communication

Room: Sheffield

Chair(s): Tomio Watanabe, Okayama Prefectural University, Japan.

### Preliminary Study on Vibrotactile Messaging for Sharing Brief Information

Teruaki Ito, University of Tokushima, Japan.

### Embodied Sound Media Technology for the Enhancement of the Sound Presence

Kenji Suzuki, University of Tsukuba, Japan.

### Electromyography Focused on Passiveness and Activeness in Embodied Interaction: Toward a Novel Interface for Co-creating Expressive Body Movement

Takabumi Watanabe, Norikazu Matsushima, Ryutaro Seto, Waseda University, Japan; Hiroko Nishi, Toyo Eiwa University, Japan; Yoshiyuki Miwa, Waseda University, Japan.

### Shadow Awareness - Bodily Expression Supporting System with Use of Artificial Shadow -

Yoshiyuki Miwa, Shiorh Itai, Takabumi Watanabe, Koji Iida, Waseda University, Japan; Hiroko Nishi, Toyo Eiwa University, Japan.

### Grasping Interface With Photo Sensor for a Musical Instrument

Tomoyuki Yamaguchi, Shuji Hashimoto, Waseda University, Japan.

### Video Content Production Support System with Speech-Driven Embodied Entrainment Character by Speech and Hand Motion Inputs

Michiya Yamamoto, Kouzi Osaki, Tomio Watanabe, Okayama Prefectural University, Japan.

### Self-Movement Feeling Generation in Sports Watching with Screen Movement via Pan-Tilt Steerable Projector

Hiroshi Noguchi, Kei Yoshinaka, Taketoshi Mori, Tomomasa Sato, The University of Tokyo, Japan.

### User Interface Adaptation and Personalization

Room: Windsor

Chair(s): Detlef Zuehlke, TU Kaiserslautern, Germany.

### Adaptive User Interfaces for the Clothing Retail

Karim Khakzar, Jonas George, Rainer Blum, Fulda University of Applied Sciences, Germany.

### Run-Time Adaptation of a Universal User Interface for Ambient Intelligent Production Environments

Kai Breiner, Fraunhofer, Germany; Daniel Görlich, SmartFactoryKL, Germany; Oliver Maschino, TU Kaiserslautern, Germany; Gerrit Meixner, German Research Center for Artificial Intelligence (DFKI), Germany; Detlef Zuehlke, TU Kaiserslautern, Germany.

### Implementing Affect Parameters in Personalized Web-Based Design

Zacharias Lekkas, Nikos Tsianos, National & Kapodistrian University of Athens, Greece; Panagiotis Germanakos, University of Nicosia / University of Cyprus, Cyprus; Constantinos Mourlas, National & Kapodistrian University of Athens, Greece; George Samaras, University of Cyprus, Cyprus.

### Modeling of User Interest based on its Interaction with a Collaborative Knowledge Management System

Jaime Moreno-Llorena, Xavier Alamán Roldán, Ruth Cobos Perez, University Autonoma of Madrid, Spain.

### Study of Feature Values for Subjective Classification of Music

Masashi Murakami, Toshikazu Kato, Chuo University, Japan.

### Identification of the User by Analyzing Human Computer Interaction

Rüdiger Heimgärtner, IUIIC - Intercultural User Interface Consulting, Germany.

Human-Computer Interaction

Thursday 16:00 - 18:00

<p><b>Novel Interaction Environments</b>  <i>Room: Garden Salon One</i>                  Chair(s): María Dolores Lozano, Castilla-La Mancha University, Spain.</p>	<p><b>HCI and Education</b>  <i>Room: Garden Salon Two</i>                  Chair(s): Christian Stary, University of Linz, Austria.</p>
<p><b>Point and Control: The Intuitive Method to Control Multi-device with Single Remote Control</b>                  Sung Soo Hong, Ju Il Eom, Samsung Electronics Co., Ltd, Korea.</p> <p><b>PALMbit-Silhouette: A User Interface by Superimposing Palm-Silhouette to Access Wall Displays</b>                  Goshiro Yamamoto, Huichuan Xu, Kazuto Ikeda, Kosuke Sato, Osaka University, Japan.</p> <p><b>Interactive Learning Panels</b>                  Ricardo Tesoriero, Habib Moussa Fardoun, Jose Gallud, María Dolores Lozano, Víctor Manuel Ruiz Penichet, Castilla-La Mancha University, Spain.</p> <p><b>Interacting with a Music Conducting System</b>                  Carlos Argueta, Ching-Ju Ko, Yi-Shin Chen, National Tsing Hua University, Taiwan.</p> <p><b>Analyzing Human Behaviors in an Interactive Art Installation</b>                  Takashi Kiriya, Masahiko Sato, Tokyo University of the Arts, Japan.</p> <p><b>Proposal of a Direction Guidance System for Evacuation</b>                  Chikamune Wada, Yu Yoneda, Yukinobu Sugimura, Kyushu Institute of Technology, Japan.</p> <p><b>Developing Some User Interfaces of TV Under Enormous Channels Environment</b>                  Shumpei Tamaoki, Tomohiro Torikai, Hirohiko Mori, Musashi Institute of Technology, Japan.</p>	<p><b>Attention and Motivation in Hypermedia Systems</b>                  Francisco Cipolla-Ficarra, Miguel Cipolla-Ficarra, Alaipo &amp; Ainci, Italy.</p> <p><b>From Paper to Module - An Integrated Environment for Generating SCORM Compliant Moodle Courses out of Text and Multimedia Elements</b>                  Hans-Martin Pohl, Benedikt Deicke, Jan-Torsten Milde, Fulda University of Applied Sciences, Germany.</p> <p><b>The Application of the Flexilevel Approach for the Assessment of Computer Science Undergraduates</b>                  Mariana Lilley, Andrew Pyper, University of Hertfordshire, United Kingdom.</p> <p><b>HCI Professional Involvement in k-12 Education: On Target or Missing the Mark?</b>                  Martin Jelin, Adrian Sudol, Jeffrey Damon, Jr., Douglas McCadden, David Brown, Maine School of Science and Mathematics, United States.</p> <p><b>The Effectiveness of Interactivity in Computer-Based Instructional Diagrams</b>                  Lisa Whitman, North Carolina State University, United States.</p> <p><b>E-Assessment - A Suitable Alternative of Measuring Competence?</b>                  Martin Kröll, Ruhr-University Bochum, Germany.</p> <p><b>Using Tablet PCs and Pen-Based Technologies to Support Engineering Education</b>                  Ignacio Casas, Pontificia Universidad Católica de Chile, Chile; Sergio Ochoa, University of Chile, Chile; Jaime Puente, Microsoft Research, United States.</p>

<p><b>EPCE</b>  <b>Sensing and Measuring Driver</b>  <i>Room: Crescent</i>                  Chair(s): Yukiyo Kuriyagawa, Nihon University, Japan.</p>	<p><b>An Analysis of Saccadic Eye Movements and Facial Images for Assessing Vigilance Levels During Simulated Driving</b>                  Akinori Ueno, Shoyo Tei, Tomohide Nonomura, Tokyo Denki University, Japan; Yuichi Inoue, Neuropsychiatric Research Institute, Japan.</p> <p><b>Driver Measurement: Methods and Applications</b>                  Shane McLaughlin, Jonathan Hankey, Thomas Dingus, Virginia Tech, United States.</p> <p><b>Measurement of Depth Attention of Driver in Frontal Scene</b>                  Mamiko Fukuoka, Shun'ichi Doi, Kagawa University, Japan; Takahiko Kimura, Toshiaki Miura, Osaka University, Japan.</p> <p><b>The Assessment of Driver's Arousal States from the Classification of Eye-blink Patterns</b>                  Yoshihiro Noguchi, Keiji Shimada, Asahi Kasei Corp., Japan; Mieko Ohsuga, Yoshiyuki Kamakura, Yumiko Inoue, Osaka Institute of Technology, Japan.</p> <p><b>Quantitative Evaluation of Mental Workload by Using Model of Involuntary Eye Movement</b>                  Goro Obinata, Nagoya University, Japan; Satoru Tokuda, Wichita State University, United States; Katsuyuki Fukuda, Nagoya University, Japan; Hiroto Hamada, Toyota Motor Co. Ltd., Japan.</p> <p><b>HR Changes in Driving Scenes with Danger and Difficulties Using Driving Simulator</b>                  Yukiyo Kuriyagawa, Nihon University, Japan; Mieko Ohsuga, Osaka Institute of Technology, Japan; Ichiro Kageyama, Nihon University, Japan.</p>
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<p><b>UAHCI</b>  <b>AAL in the Wild</b>  <i>Room: Pacific Salon One</i>                  Chair(s): Guido Kempter, Edith Maier, Vorarlberg University of Applied Sciences, Austria.</p>	<p><b>Appropriate Dynamic Lighting as a Possible Basis for a Smart Ambient Lighting</b>                  Lajos Izsó, Budapest University of Technology and Economics, Hungary.</p> <p><b>Measuring Psychophysiological Signals in Every-Day Situations</b>                  Walter Ritter, Vorarlberg University of Applied Sciences, Austria.</p> <p><b>AAL in the Wild - Lessons Learned</b>                  Edith Maier, Guido Kempter, Vorarlberg University of Applied Sciences, Austria.</p> <p><b>Keep it Simple! Assisting Older People with Mental and Physical Training</b>                  Herbert Plischke, Niko Kohls, Ludwig-Maximilians-University Munich, Germany.</p> <p><b>Design Framework for Ambient Assisted Living Platforms</b>                  Patricia Abril-Jimenez, Cecilia Vera-Muñoz, Maria Fernanda Cabrera-Umpierrez, Maria Teresa Arredondo, Technical University of Madrid (UPM), Spain; Juan-Carlos Naranjo, Universidad Politécnica de Valencia, Spain.</p> <p><b>Methods for User Experience Design of AAL Services</b>                  Maria-Pilar Sala, Juan-Pablo Lazaro-Ramos, Universidad Politécnica de Valencia, Spain; Artur Serrano, University Hospital of North Norway, Norway; Katrin Mueller, Motorola GmbH, Germany; Juan-Carlos Naranjo, Universidad Politécnica de Valencia, Spain.</p>
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Engineering Psychology and Cognitive Ergonomics

Universal Access in Human-Computer Interaction

Thursday 16:00 - 18:00

# Parallel Sessions

## UAHCI

### Tactile Interaction

Room: Pacific Salon Two

Chair(s): Gerhard Weber, Dresden University of Technology, Germany.

### What You Feel is What You Get: Mapping GUIs on Planar Tactile Displays

Maria Schiewe, Wiebke Köhlmann, University of Potsdam, Germany; Oliver Nadig, Deutsche Blindenstudienanstalt e. V., Germany; Gerhard Weber, Dresden University of Technology, Germany.

### Multitouch Haptic Interaction

Michael Schmid, Gerhard Weber, Dresden University of Technology, Germany.

### Interaction with Colored Graphical Representations on Braille Devices

Christiane Taras, Thomas Ertl, University of Stuttgart, Germany.

### Haptic Science Learning System for Students with Visual Impairments: A Preliminary Study

Takehiko Yamaguchi, Steve Johnson, University of Arkansas, United States; Hyung Kim, Virginia Tech, United States; Yueqing Li, Chang Nam, University of Arkansas, United States; Tonya Smith-Jackson, Virginia Tech, United States.

### Haptic Navigation in the World Wide Web

Nikolaos Kaklanis, Dimitrios Tzovaras, Konstantinos Moustakas, Centre for Research and Technology Hellas (CERTH), Greece.

### Timing and Accuracy of Individuals with and without Motor Control Disabilities

Completing a Touch Screen Task  
Curt Irwin, Mary Sesto, University of Wisconsin-Madison, United States.

### A Touch Screen Button Size and Spacing Study with Older Adults

Marie LaVictoire, Nick Everhart, Boston Scientific, United States.

### Non-visual Interaction

Room: Pacific Salon Three

Chair(s): Constantine Stephanidis, Stavroula Ntoa, Foundation for Research & Technology - Hellas (FORTH), Greece.

### Everyone Counts: Voting Accessibility

E. Vincent Cross II, Shanee Dawkins, Jerome McClendon, Tony Sullivan, Gregory Rogers, Auburn University, United States; Arit Erete, University of Florida, United States; Juan Gilbert, Auburn University, United States.

### Visualizing Thermal Traces to Reveal Histories of Human-Object Interactions

Tomohiro Amemiya, Nippon Telegraph and Telephone Corporation, Japan.

### Spearcon Performance and Preference for Auditory Menus on a Mobile Phone

Bruce Walker, Anya Kogan, Georgia Institute of Technology, United States.

### Development of an Agent Based Specialised Web Browser for Visually Handicapped Tamils

R. Ponnusamy, Aarupadai Veedu Institute of Technology, India; T. Chithralekha, Prasanna Venkatesan, S. Kuppuswami, Pondicherry University, India.

### Evaluation of a Voice-Based Internet Browser with Untrained and Trained Users

Klaus-Peter Engelbrecht, TU Berlin, Deutsche Telekom Laboratories, Germany; Craig Wootton, University of Ulster, United Kingdom; Ina Wechsung, Sebastian Möller, TU Berlin, Deutsche Telekom Laboratories, Germany.

### Mobile Audio Navigation Interfaces for the Blind

Jaime Sanchez, University of Chile, Chile.

### On-line Communication Interface Design for Visually Impaired Users

Sheue-Ling Hwang, Che-Wei Chang, National Tsing Hua University, Taiwan.

## VMR

### VR Applications

Room: Royal Palm Salon Six

Chair(s): Randall Shumaker, University of Central Florida, United States.

### A Two-user Framework for Rapid Immersive Full Cycle Product Customization

Maxim Foursa, David D'Angelo, Gerold Wesche, Manfred Bogen, Fraunhofer, Germany.

### A Mixed Reality-based Assembly Verification and Training Platform

Shi-qi Li, Tao Peng, Chi Xu, Yan Fu, Yang Liu, Huazhong University of Science & Technology, P.R. China.

### User-centered Evaluation of a Virtual Environment Training System: Utility of User Perception Measures

Dawei Jia, Asim Bhatti, Chris Mawson, Saeid Nahavandi, Deakin University, Australia.

### The Use of Virtual Reality in the Treatment of Posttraumatic Stress Disorder (PTSD)

Deanne Simms, Susan O'Donnell, Heather Molyneaux, National Research Council, Canada.

### Design and Implementation of Augmented Reality Environment for Complex Anatomy Training: Inguinal Canal Case Study

Sophia Sakellariou, NHS Grampian, United Kingdom; Ben Ward, The University of Edinburgh, United Kingdom; Vassilis Charissis, University of Glasgow, United Kingdom; David Chanock, Ayr Hospital, United Kingdom; Paul Anderson, The Glasgow School of Art / University of Glasgow, United Kingdom.

### Mixed Reality Neurosurgical Microscope for Training and Intra-operative Purposes

Alessandro De Mauro, Jörg Raczkowski, University of Karlsruhe, Germany; Marc Halatsch, Clinic University of Heidelberg, Germany; Heinz Wörn, University of Karlsruhe, Germany.

### Evaluating the Potential of Cognitive Rehabilitation with Mixed Reality

Nicholas Beato, Daniel Mapes, Charles Hughes, Cali Fidopiastis, Eileen Smith, University of Central Florida, United States.

## OCSC

### Empirical Usability Testing Methods in Various Domains

Room: Royal Palm Salon Four

Chair(s): A. Ant Ozok, UMBC, United States.

### Medication Adherence among the Elderly and Technology Aids: Results from an Online Survey Study

Huijuan Wu, A. Ant Ozok, UMBC, United States.

### Usability and User Acceptance for Personal Health Records: A Perspective from Healthcare Citizens

A. Ant Ozok, UMBC, United States; Ayse Gurses, Johns Hopkins University, United States; Huijuan Wu, UMBC, United States; Melissa Nelson, Rutgers University, United States; David Moen, Fairview Health Services, United States; June Wei, University of West Florida, United States.

### Measuring Usability via Biometrics

Anjali Phukan, UMBC, United States.

### Preliminary Findings from a Cross Cultural Usability Study on the Internationalization of User Interfaces

Joyram Chakraborty, Linda Hansen, UMBC, United States; Darren Denenberg, University of Nevada, Las Vegas, United States; Anthony Norcio, UMBC, United States.

### Notice Board as Metaphor for Social Media Service in Chemical Factory

Sampo Teras, Petri Mannonen, Helsinki University of Technology, Finland.

### Structuring the Social Subsystem Components of the Community based E-museum Framework

Suriyati Razali, Nor Laila Md. Noor, Wan Adilah Wan Adnan, Universiti Teknologi MARA, Malaysia.

Virtual and Mixed Reality

Online Communities and Social Computing

Thursday 16:00 - 18:00

**Online Gaming and Social Computing**

Room: Royal Palm Salon Five

Chair(s): Anthony Faiola, *Indiana University - Purdue University Indianapolis, United States*; Alexander Voiskounsky, *Moscow State University, Russia*.

**A Content Analysis of Interviews with Players of Massively Multiplayer Online Role-Play Games (MMORPGs): Motivating Factors and the Impact on Relationships**

Jacqui Taylor, James Taylor, *Bournemouth University, United Kingdom*.

**Gamers' Implicit Knowledge on the Psychological Influence of Game-Playing**

Alexander Voiskounsky, Olga Mitina, Anastasiya Avetisova, *Moscow State University, Russia*.

**When Social Worlds Collide: Charting the Intersection of Social Media and Courseware/ Course Management System**

Chris Egert, Stephen Jacobs, Susan Barnes, *Rochester Institute of Technology, United States*.

**Flow Experience in Second Life: The Impact of Telepresence on Human-Computer Interaction**

Anthony Faiola, *Indiana University - Purdue University Indianapolis, United States*; Olga Smyslova, *Lomonosov Moscow State University, Russia*.

**Automatic Generation of Non-Verbal Behavior for Agents in Virtual Worlds: A System for Supporting Multimodal Conversations of Bots and Avatars.**

Werner Breitfuss, *The University of Tokyo, Japan*; Helmut Prendinger, *National Institute of Informatics, Japan*; Mitsuru Ishizuka, *The University of Tokyo, Japan*.

**Intercultural Competence Game that Fosters Metacognitive Agility and Reflection**

Elaine Raybourn, *Sandia National Laboratories, United States*.

**Exploring the Elements and Design Criteria of Massively-Multiplayer Online Role-Playing Game (MMORPG) Interfaces**

Chun Cheng Hsu, Chih Hsien Chen, *National Chiao Tung University, Taiwan*.

Augmented Cognition

**AC**

**Augmented Cognition in Training Technologies**

Room: Royal Palm Salon Three

Chair(s): Chris Forsythe, *Sandia National Laboratories, United States*; Kelvin Oie, *U.S. Army Research Laboratory, United States*.

**Physiological-Based Assessment of the Resilience of Training to Stressful Conditions**

Michael Zotov, *Saint Petersburg State University, Russia*; Chris Forsythe, *Sandia National Laboratories, United States*; Vladimir Petrukovich, *Russian Military Medical Academy, Russia*; Inga Akhmedova, *Saint Petersburg State University, Russia*.

**Assessment of Psychophysiological Differences of West Point Cadets and Civilian Controls Immersed within a Virtual Environment**

Thomas Parsons, Christopher Courtney, Louise Cosand, Arvind Iyer, Albert "Skip" Rizzo, *University of Southern California, United States*; Kelvin Oie, *U.S. Army Research Laboratory, United States*.

**Converging Minds: Assessing Team Performance Using Psychophysiological Measures**

Aniket Vartak, Siddharth Somvanshi, Cali Fidopiastis, Denise Nicholson, *University of Central Florida, United States*.

**Experimental Assessment of Accuracy of Automated Knowledge Capture**

Susan Stevens, Chris Forsythe, Rob Abbott, Charles Gieseler, *Sandia National Laboratories, United States*.

**Peak Performance Trainer (PPT): Interactive Neuro-Educational Technology to Increase the Pace & Efficiency of Rifle Marksmanship Training**

Giby Raphael, Chris Berka, Djordje Popovic, *Advanced Brain Monitoring, Inc., United States*; Gregory Chung, Sam Nagashima, *UCLA, United States*; Adrienne Behneman, Gene Davis, Robin Johnson, *Advanced Brain Monitoring, Inc., United States*.

**Seeing the World Through an Expert's Eyes: Context-Aware Display as a Training Companion**

Marc Tomlinson, Michael Howe, Bradley Love, *The University of Texas at Austin, United States*.

Digital Human Modeling

**DHM**

**User Modelling and Data Mining**

Room: Royal Palm Salon Two

Chair(s): Kang Li, *University of Illinois, United States*; Tingshao Zhu, *Chinese Academy of Sciences, P.R. China*.

**User Behavior Mining For Online GUI Adaptation**

Wei Pan, Yiqiang Chen, Junfa Liu, *Chinese Academy of Sciences, P.R. China*.

**Fuzzy Logic in Exploring Data Effects: A Way to Unveil Uncertainty in EEG Feedback**

Fang Zheng, Bin Hu, Li Liu, *Lanzhou University, P.R. China*; Tingshao Zhu, *Chinese Academy of Sciences, P.R. China*; Yongchang Li, Yan Bing Qi, *Lanzhou University, P.R. China*.

**Facial Gender Classification using LUT-based Sub-images and DIE**

Jong-Bae Jeon, Sang-Hyun Jin, Dong Ju Kim, Kwang-Seok Hong, *Sungkyunkwan University, Korea*.

**Further Steps Towards Driver Modeling According to the Bayesian Programming Approach**

Claus Möbus, Mark Eilers, *University of Oldenburg, Germany*.

Human Centered Design

**HCD**

**Information Systems for Just-In Time Health Information**

Room: Royal Palm Salon One

Chair(s): Josette Jones, *Indiana University - Purdue University Indianapolis, United States*.

**A Usability Inspection of Medication Management in Three Personal Health Applications**

Katie Siek, Danish Ullah Khan, *University of Colorado at Boulder, United States*; Stephen Ross, *University of Colorado Denver, United States*.

**Clinical System Design Considerations For Critical Handoffs**

Nancy Staggers, Jia-Wen Guo, Jacquelyn Blaz, *University of Utah, United States*; Bonnie Jennings, *Consultant, United States*.

**Leveraging User Search Behavior to Design Personalized Browsing Interfaces for Healthcare Web Sites**

Malika Mahoui, Josette Jones, Derek Zollinger, Kanitha Andersen, *Indiana University - Purdue University Indianapolis, United States*.

**Impacting the Continuum of Caregiving through Innovation in Informatics - Senior Care Navigation System (SCANS)**

Eric Tinsley, Jean Bandos, *My Health Care Manager, LLC, United States*.

**Design of a Web-based Symptom Management Intervention for Cancer Patient**

Christine Newlon, Chin-Chun Hu, Renee Stratton, Anna McDaniel, *Indiana University - Purdue University Indianapolis, United States*.

**Tailoring Interface for Spanish Language - A case study with CHICA System**

Vibha Anand, Paul Biondich, Aaron Carroll, Stephen Downs, *Indiana University - Purdue University Indianapolis, United States*.

**Use of Nursing Management Minimum Data Set (NMMDS) for a Focused Information Retrieval**

Josette Jones, Eric Newsom, *Indiana University - Purdue University Indianapolis, United States*; Connie Delaney, *University of Minnesota, United States*.

Thursday 16:00 - 18:00

HIMI

**Advanced Interfaces for Valuable Communication and Collaboration Support - I**

*Room: Garden Salon Two*  
Chair(s): Yoshio Nakatani, Ritsumeikan University, Japan; Shogo Nishida, Osaka University, Japan.

**Evaluation for Adjustment Method of Vehicle's Location by Recognizing Crosswalks**

Yoshihisa Yamaguchi, Takashi Nakagawa, Mitsubishi Electric Corporation, Japan; Hirokazu Kato, Nara Institute of Science and Technology, Japan; Shogo Nishida, Osaka University, Japan.

**A Study of Auditory Warning Signals for the Design Guidelines of Man-Machine Interfaces**

Mie Nakatani, Daisuke Suzuki, Nobuchika Sakata, Shogo Nishida, Osaka University, Japan.

**Remote Consultation System Using Hierarchically Structured Agents**

Hiroshi Yajima, Tokyo Denki University, Japan; Jun Sawamoto, Iwate Prefectural University, Japan; Kazuo Matsuda, Tokyo Denki University, Japan.

**Control of Personal Tempo to Support Individual Action and Cognition**

Naoya Nobutani, Yoshio Nakatani, Ritsumeikan University, Japan.

**Facilitating Search through Visualized Search Results**

Takahisa Ando, Satoko Shiga, Tomoya Iwakura, Seishi Okamoto, Fujitsu Laboratories Ltd., Japan.

**Analysis of Team Communication and Collaboration in En-Route Air Traffic Control**

Kazuo Furuta, Yusuke Soraji, Taro Kanno, The University of Tokyo, Japan; Hisae Aoyama, Electronic Navigation Research Institute, Japan; Daisuke Karikawa, Makoto Takahashi, Tohoku University, Japan.

**Identifying Latent Similarities among Near-Miss Incident Records Using a Text-Mining Method and a Scenario-Based Approach**

Tetsuo Sawaragi, Kouichi Ito, Yukio Horiguchi, Hiroaki Nakanishi, Kyoto University, Japan.

**Supporting Product Design**

*Room: Towne*  
Chair(s): Hidetoshi Nakayasu, Konan University, Japan.

**Design and Evaluation of the Customized Product Color Combination Interface Based on Scenario Experience**

Ying-Jye Lee, National Kaohsiung University of Applied Sciences, Taiwan; Cheih-Ying Chen, Fortune Institute of Technology, Taiwan; Fong-Gong Wu, National Cheng Kung University, Taiwan.

**Batik KR Semantic Network: Visualizations of Creative Process and Design Knowledge for the Malaysian Batik Designers' Community**

Ariza Nordin, Nor Laila Md. Noor, Universiti Teknologi MARA, Malaysia; Ahmad Zainuddin, Ministry of Higher Education, Malaysia.

**How to Learn from Intelligent Products; The Structuring of Incoherent Field Feedback Data in Two Case Studies**

Renate De Bruin, Yuan Lu, Aarnout Brombacher, Eindhoven University of Technology (TU/e), Netherlands.

**Determination of Inspection Threshold Using Perceptive Sensitivities of Experienced Panel**

Masao Nakagawa, Shiga University, Japan; Hidetoshi Nakayasu, Konan University, Japan; Tetsuya Miyoshi, Toyohashi Sozo College, Japan.

**How Product Differentiation Affects Online Shopping**

A. Walkyria Goode, Escuela Superior Politécnica del Litoral, Ecuador.

HCI

**Development of Tactile & Haptic Interaction**

*Room: Windsor*  
Chair(s): Sakae Yamamoto, Tokyo University of Science, Japan; Misa Grace Kwok, Keio Research Institute at SFC, Japan.

**A Study on Effective Tactile Feeling of Control Panels for Electrical Appliances**

Miwa Nakanishi, Chiba University, Japan; Yusaku Okada, Keio University, Japan; Sakae Yamamoto, Tokyo University of Science, Japan.

**Representation of Velocity Information by Using Tactile Apparent Motion**

Kentaro Kotani, Toru Yu, Takafumi Asao, Ken Horii, Kansai University, Japan.

**Experimental Study about Effect of Thermal Information Presentation to Mouse**

Shigeyoshi Iizuka, Nippon Telegraph and Telephone Corporation, Japan; Sakae Yamamoto, Tokyo University of Science, Japan.

**Overview of Meta-analyses Investigating Vibrotactile Versus Visual Display Options**

Linda Elliott, U.S. Army Research Laboratory, United States; Michael Coovert, University of South Florida, United States; Elizabeth Redden, U.S. Army Research Laboratory, United States.

**A Study on Fundamental Information Transmission Characteristics of an Air-jet Driven Tactile Display**

Takafumi Asao, Hiroaki Hayashi, Masayoshi Hayashi, Kentaro Kotani, Ken Horii, Kansai University, Japan.

**Effectiveness of the Text Display in Bilingual Presentation of JSL/JT for Emergency Information**

Shunichi Yonemura, Shin-ichiro Eitoku, Nippon Telegraph and Telephone Corporation, Japan; Kazuo Kamata, Utsunomiya University, Japan.

**Tactile Spatial Cognition by the Palm**

Misa Grace Kwok, Keio Research Institute at SFC, Japan.

**Systematization, Modeling and Quantitative Evaluation of Human Interface**

*Room: Hampton*  
Chair(s): Shin'ichi Fukuzumi, NEC Corporation, Japan.

**User-Centered Design and Evaluation - The Big Picture**

Victoria Bellotti, Palo Alto Research Center (PARC), United States; Shin'ichi Fukuzumi, Toshiyuki Asahi, Shunsuke Suzuki, NEC Corporation, Japan.

**Empirical Comparison of Task Completion Time Between Matched Interaction Sequences**

Shunsuke Suzuki, Yusuke Nakao, Toshiyuki Asahi, NEC Corporation, Japan; Victoria Bellotti, Palo Alto Research Center (PARC), United States; Bonnie John, Carnegie Mellon University, United States; Shin'ichi Fukuzumi, NEC Corporation, Japan.

**Toward Cognitive Modeling for Predicting Usability**

Bonnie John, Carnegie Mellon University, United States; Shunsuke Suzuki, NEC Corporation, Japan.

**Mobile Phone Usability Questionnaire (MPUQ) and Automated Usability Evaluation**

Young Sam Ryu, Texas State University-San Marcos, United States.

**Effective Combination of Haptic, Auditory and Visual Information Feedback in Operation Feeling**

Keiko Kasamatsu, Tokyo Metropolitan University, Japan; Tadahiro Minami, Kazuki Izumi, Hideo Jinguh, Kanazawa Institute of Technology, Japan.

**A Usability Evaluation Method Applying AHP and Treemap Techniques**

Toshiyuki Asahi, Teruya Ikegami, Shin'ichi Fukuzumi, NEC Corporation, Japan.

**Development of Quantitative Usability Evaluation Method**

Shin'ichi Fukuzumi, Teruya Ikegami, NEC Corporation, Japan; Hidehiko Okada, Kyoto Sangyo University, Japan.

# Parallel Sessions

<p><b>Designing for Children</b> Room: Sheffield Chair(s): Luís Carriço, <i>University of Lisbon, Portugal.</i></p>	<p><b>Multimodal Interaction</b> Room: Garden Salon One Chair(s): Florian Metze, <i>Carnegie Mellon University, United States.</i></p>
<p><b>Usability Evaluation of Graphic Design for Ilmu's Interface</b> Tengku Siti Meriam Tengku Wook, <i>National University of Malaysia, Malaysia</i>; Siti Salwa Salim, <i>University of Malaya, Malaysia.</i></p> <p><b>Arab Children's Reading Preference for Different Online Fonts</b> Asmaa Alsumait, <i>Kuwait University, Kuwait</i>; Asma Al-Osaimi, <i>Hadl'aa AlFedaghi, Regional Center for Development of Educational S/W, Kuwait.</i></p> <p><b>Improving Children's Writing Ability</b> Joana Pereira, Luís Carriço, Carlos Duarte, <i>University of Lisbon, Portugal.</i></p> <p><b>Investigating Children Preferences of a User Interface Design</b> Jamaliah Taslim, Wan Adilah Wan Adnan, Noor Azyanti Abu Bakar, <i>Universiti Teknologi MARA, Malaysia.</i></p> <p><b>A Pen-Based Teaching System for Children and Its Usability Evaluation</b> Danli Wang, Tingting Ying, <i>Chinese Academy of Sciences, P.R. China</i>; Jinquan Xiong, <i>Jiangxi Institution of Education, P.R. China</i>; Hongan Wang, Guozhong Dai, <i>Chinese Academy of Sciences, P.R. China.</i></p> <p><b>Relationship Learning Software - Design and Assessment</b> Kyla McMullen, Gregory Wakefield, <i>University of Michigan, United States.</i></p>	<p><b>Modeling and Using Saliency in Multimodal Interaction Systems</b> Ali Choumane, <i>IRISA, France</i>; Jacques Siroux, <i>ENSSAT / IRISA, France.</i></p> <p><b>Towards a Multidimensional Approach for the Evaluation of Multimodal Application User Interfaces</b> José E. R. de Queiroz, Joseana Fechine, Ana E. V. Barbosa, Danilo Ferreira, <i>Federal University of Campina Grande, Brazil.</i></p> <p><b>Modeling Multimodal Interaction for Performance Evaluation</b> Emile Verdurand, Gilles Coppin, <i>Telecom Bretagne, France</i>; Franck Poirier, <i>Université de Bretagne-Sud, France</i>; Olivier Grisvard, <i>Telecom Bretagne / THALES Aerospace, France.</i></p> <p><b>Building a Practical Multimodal Interface with a Multimodal Fusion Module</b> Yong Sun, Yu(David) Shi, Fang Chen, <i>National ICT Australia, Australia</i>; Vera Chung, <i>The University of Sydney, Australia.</i></p> <p><b>Exploring Multimodal Interaction in Collaborative Settings</b> Luís Duarte, Marco Sá, Luís Carriço, <i>University of Lisbon, Portugal.</i></p> <p><b>Multimodal Shopping Lists</b> Jhilmil Jain, Riddhiman Ghosh, Mohamed Dekhil, <i>Hewlett-Packard Labs, United States.</i></p>

<p><b>EPCE</b> <b>Teamwork, Collaboration and Productivity</b> Room: Sunset Chair(s): Don Harris, <i>Cranfield University, United Kingdom.</i></p>
<p><b>Organizing Smart Networks and Humans Into Augmented Teams</b> Martijn Neef, Martin Van Rijn, Danielle Keus, Jan-Willem Marck, <i>TNO Defence, Security and Safety, Netherlands.</i></p> <p><b>The Influence of Shared-Representations on Shared Mental Models in Virtual Teams</b> Rose Saikayait, Sarah Sharples, <i>The University of Nottingham, United Kingdom.</i></p> <p><b>Operational Decision Making in Aluminium Smelters</b> Yashuang Gao, Mark Taylor, John Chen, Michael Hautus, <i>The University of Auckland, New Zealand.</i></p> <p><b>Development of an Evaluation Method for Office Work Productivity</b> Kazune Miyagi, Hiroshi Shimoda, Hirotake Ishii, Kenji Enomoto, <i>Kyoto University, Japan</i>; Mikio Iwakawa, Masaaki Terano, <i>Panasonic Electric Works Co., Ltd., Japan.</i></p> <p><b>The Influence of Gender and Age on the Visual Codes Working Memory and the Display Duration – a Case Study of Fencers</b> Chih-Lin Chang, <i>Hsiu Ping Institute of Technology, Taiwan</i>; Kai-Way Li, <i>Chung-Hua University, Taiwan</i>; Yung-Tsan Jou, <i>Chung Yuan Christian University, Taiwan</i>; Hsu-Chang Pan, <i>Hsiu Ping Institute of Technology, Taiwan</i>; Tai-Yen Hsu, <i>National Taichung University, Taiwan.</i></p>

Engineering Psychology and Cognitive Ergonomics

<p><b>UAHCI</b> <b>Inclusive Design for Universal Access</b> Room: Pacific Salon One Chair(s): Simeon Keates, <i>IT University of Copenhagen, Denmark.</i></p>
<p><b>Inclusive Design for Ordinary Users in Extraordinary Circumstances</b> Simeon Keates, <i>IT University of Copenhagen, Denmark.</i></p> <p><b>An Acceptability Predictor for Website</b> Ray Adams, Tony White, Efe Ceylan, <i>Middlesex University, United Kingdom.</i></p> <p><b>Accessing User Information for Use in Design</b> Chris McGinley, Hua Dong, <i>Brunel University, United Kingdom.</i></p> <p><b>Living Labs as a Methodological Approach to Universal Access in Senior Design</b> Julie Christiane Thiesen Winthereik, Lone Malmborg, Tanja Andersen, <i>IT University of Copenhagen, Denmark.</i></p> <p><b>A Framework for Remote User Evaluation of Accessibility and Usability of Websites</b> Christopher Power, Helen Petrie, Richard Mitchell, <i>University of York, United Kingdom.</i></p> <p><b>E-inclusiveness and Digital Television in Europe - A Holistic Model</b> Peter Looms, <i>IT University of Copenhagen / Danish Broadcasting Corp., Denmark.</i></p>

Universal Access in Human-Computer Interaction

Friday 08:00 - 10:00

**UAHCI**

**Participatory Approaches in Design for All (DfA)**

*Room: Pacific Salon Two*  
 Chair(s): Constantine Stephanidis, Margherita Antona, *Foundation for Research & Technology - Hellas (FORTH), Greece.*

**Unexploited Resources in Interaction Design for Universal Access: People with Impairments as a Resource for Interaction Designers**

Hans Persson, Kjell Ohlsson, Sigrid Petersén, Anette Jonsäll, *Institute for Humane Technology (IHT), Sweden.*

**User Evaluation of Age-Centred Web Design Guidelines**

Panayiotis Zaphiris, *Cyprus University of Technology, Cyprus*; Ulrike Pfeil, Dorian Xhixho, *City University London, United Kingdom.*

**Design of an Assistance System for Elderly Based on Analyses of Needs and Acceptance**

Stefan Lutherdt, Carsten Stiller, *Ilmenau University of Technology, Germany*; Katrin Lienert, Sabine Spittel, *AWO Alten-, Jugend- und Sozialhilfe gGmbH, Germany*; Fred Roß, Christoph Ament, Hartmut Witte, *Ilmenau University of Technology, Germany.*

**ICT Services for Every Citizen: The Challenge of Gaps in User Knowledge**

Kristin Fuglerud, *Norwegian Computing Center, Norway.*

**Applying Human-Centered Design to Rehabilitation Device**

Lan-Ling Huang, Dengchuan Cai, *National Yunlin University of Science & Technology, Taiwan.*

**User-Centred Design and Literacy Tools for the Deaf**

Tania Di Mascio, *University of L'Aquila, Italy*; Rosella Gennari, *Free University of Bozen-Bolzano, Italy.*

**Functional Accessibility Testing**

*Room: Pacific Salon Three*  
 Chair(s): Jon Gunderson, *University of Illinois at Urbana-Champaign, United States.*

**WCAG 2.0 Test Samples Repository**

Shadi Abou-Zahra, *W3C Web Accessibility Initiative (WAI), France*; Michael Cooper, *W3C Web Accessibility Initiative (WAI), Canada.*

**Quantification of Accessibility: Guidance for More Objective Access Guidelines**

Gregg Vanderheiden, *University of Wisconsin-Madison, United States.*

**Functional Accessibility Testing Using Best Practices**

Jon Gunderson, *University of Illinois at Urbana-Champaign, United States.*

**The Evolution of a Web Accessibility Testing Protocol**

Tom Jewett, Wayne Dick, *California State University, Long Beach, United States.*

**Assistive Tools to Reach European Accessibility Web Standards**

Sonia Colas, Nicolas Monmarché, Mohamed Slimane, *Université François-Rabelais Tours, France.*

**Considerations of Efficiency and Mental Stress of Search Tasks on Websites by Blind Persons**

Junichi Iizuka, Akira Okamoto, *Tsukuba University of Technology, Japan*; Yasuo Horiuchi, *Chiba University, Japan*; Akira Ichikawa, *Waseda University, Japan.*

**Is it Possible to Predict the Manual Web Accessibility Result Using the Automatic Result?**

Carlos Casado Martínez, *Universitat Oberta de Catalunya (UOC), Spain*; Loïc Martínez-Normand, *Technical University of Madrid (UPM), Spain*; Morten Goodwin Olsen, *Tingtun AS Lillesand, Norway.*

**Smart Homes and Smart Appliances**

*Room: Royal Palm Salon One*  
 Chair(s): Harald Weber, *Institut für Technologie und Arbeit (ITA), Germany.*

**A Design of Air-Condition Remote Control for Visually Impaired People**

Cherng-Yee Leung, Yen-Ting Yao, *Tatung University, Taiwan*; Su-Chen Chuang, *National Taichung University, Taiwan.*

**Attitudinal and Intentional Acceptance of Domestic Robots by Younger and Older Adults**

Neta Ezer, Arthur Fisk, Wendy Rogers, *Georgia Institute of Technology, United States.*

**Implementation of a User Interface Model for Systems Control in Buildings**

Szu-Cheng Chien, Ardeshir Mahdavi, *Vienna University of Technology, Austria.*

**A New Approach for Accessible Interaction within Smart Homes through Virtual Reality**

Viveca Jiménez Mixco, Rafael De las Heras, Juan-Luis Villalar, Maria Teresa Arredondo, *Technical University of Madrid (UPM), Spain.*

**Activity Recognition for Everyday Life on Mobile Phones**

Gerald Bieber, Jörg Voskamp, Bodo Urban, *Fraunhofer, Germany.*

**A Framework for Service Convergence via Device Cooperation**

Seungchul Shin, *Samsung Electronics Co., Ltd, Korea*; Doyoon Kim, *LG Electronics, Korea*; Sungyoung Yoon, *Yonsei University, Korea.*

**VMR**

**Whole Body Interaction**

*Room: Sunrise*  
 Chair(s): David England, *Liverpool John Moores University, United Kingdom.*

**Estimation of User Interest from Face Approaches Captured by Webcam**

Kumiko Fujisawa, Kenro Aihara, *National Institute of Informatics, Japan.*

**Towards an Advanced Framework for Whole Body Interaction**

David England, Martin Randles, Paul Fergus, Taleb Bendiab, *Liverpool John Moores University, United Kingdom.*

**Methods for Quantifying Emotion-Related Gait Kinematics**

Beth Crane, Melissa Gross, Ed Rothman, *University of Michigan, United States.*

**The 'H' in HCI: Enhancing Perception of Interaction through the Performative**

Simon Biggs, *Edinburgh College of Art, United Kingdom*; Mariza Dima, Henrik Ekeus, *The University of Edinburgh, United Kingdom*; Sue Hawksley, *Edinburgh College of Art, United Kingdom*; Wendy Timmons, Mark Wright, *The University of Edinburgh, United Kingdom.*

Virtual and Mixed Reality

## OCSC

### Credibility, Accountability, User Reputation and Trust

*Room: Royal Palm Salon Six*  
Chair(s): Annie Lau, *University of New South Wales, Australia.*

### Evaluation of User Reputation on YouTube

Yo-Sub Han, Laehyun Kim, *Korea Institute of Science and Technology (KIST), Korea*; Jeong-Won Cha, *Changwon National University, Korea.*

### Credibility On-line: Quality Metrics for Evaluation

Francisco Cipolla-Ficarra, *Alaipo & Ainci, Italy*; Ernesto Vivas, *Universidad Nacional de San Martín, Argentina*; Joaquim Romo, *Alaipo & Ainci, Spain.*

### User Reputation Evaluation Using Co-occurrence Feature and Collective Intelligence

Jeong-Won Cha, Hyun-woo Lee, *Changwon National University, Korea*; Yo-Sub Han, Laehyun Kim, *Korea Institute of Science and Technology (KIST), Korea.*

### Analysis of Information Disclosure on a Social Networking Site

Katherine Peterson, Katie Siek, *University of Colorado at Boulder, United States.*

## AC

### Adaptive Instruction

*Room: Royal Palm Salon Five*  
Chair(s): Joseph Cohn, *DARPA/DSO, United States*; Michael Lowe, *Navy, United States.*

### Can Neurophysiologic Synchronies Provide a Platform for Adapting Team Performance?

Ron Stevens, Trysha Galloway, *UCLA, United States*; Chris Berka, *Advanced Brain Monitoring, Inc., United States*; Marcia Sprang, *Placentia-Yorba Linda Unified School District, United States.*

### Adaptive Learning via Social Cognitive Theory and Digital Cultural Ecosystems

Joseph Juhnke, Adam Kallish, *Tanagram Partners, United States.*

### Realizing Adaptive Instruction (Ad-In): The Convergence of Learning, Instruction, and Assessment

Edward Dieterle, John Murray, *SRI International, United States.*

### Adapting Instruction

Wallace Wulfeck, *Space & Naval Warfare Systems Center, Pacific (SSC PAC), United States.*

### Characterizing Cognitive Adaptability via Robust Automated Knowledge Capture

Rob Abbott, Chris Forsythe, *Sandia National Laboratories, United States.*

### Capturing and Building Expertise in Virtual Worlds

Jared Freeman, Webb Stacy, Jean MacMillan, Georgiy Levchuk, *Aptima, Inc., United States.*

## DHM

### Methods for Motion Reconstruction and Personalization of Human Models

*Room: Royal Palm Salon Three*  
Chair(s): Sergio Ausejo, *CEIT, Spain*; Xuguang Wang, *INRETS, France.*

### Problems Encountered in Seated Arm Reach Motion Reconstruction: Need for a More Realistic Spine and Upper Limb Kinematic Model

Xuguang Wang, *INRETS, France.*  
**Virtual Human Hand: Grasping and Simulation**  
Esteban Peña-Pitarch, *Universitat Politècnica de Catalunya, Spain*; Jingzhou (James) Yang, *Texas Tech University, United States*; Karim Abdel-Malek, *University of Iowa, United States.*

### Simulation-based Discomfort Prediction of the Lower Limb Handicapped with Prosthesis in the Climbing Tasks

Yan Fu, Shi-qi Li, Mingqiang Yin, Yueqing Bian, *Huazhong University of Science & Technology, P.R. China.*

### Harmonic Gait Under Primitive DOF for Biped Robot

Shigeki Sugiyama, *University of Gifu, Japan.*

### Generation of Percentile Values for Human Joint Torque Characteristics

Florian Engstler, Heiner Bubbs, *Technical University of Munich, Germany.*

### Joint Coupling for Human Shoulder Complex

Jingzhou (James) Yang, *Texas Tech University, United States*; Xuemei Feng, *Wuhan University of Technology, P.R. China*; Joo Kim, *United States*; Yujiang Xiang, *University of Iowa, United States*; Sudhakar Rajulu, *NASA Johnson Space Center, United States.*

### Development of a Driver Model in Powered Wheelchair Operation

Takuma Ito, *The University of Tokyo, Japan*; Takenobu Inoue, *NRCDC, Japan*; Motoki Shino, Minoru Kamata, *The University of Tokyo, Japan.*

### 3D Body Scanning Applications and Limitations

*Room: Royal Palm Salon Four*  
Chair(s): Ravindra Goonetilleke, *Hong Kong University of Science & Technology, Hong Kong.*

### Block Division for 3D Head Shape Clustering

Jianwei Niu, *University of Science and Technology Beijing, P.R. China*; Zhizhong Li, Song Xu, *Tsinghua University, P.R. China.*

### Impact of Force Feedback on Computer Aided Ergonomic Analyses.

H. Onan Demirel, Vincent Duffy, *Purdue University, United States.*

### The Pluses and Minuses of Obtaining Measurements from Digital Scans

Ravindra Goonetilleke, Channa Witana, *Hong Kong University of Science & Technology, Hong Kong*; Jianhui Zhao, *Wuhan University, P.R. China*; Shuping Xiong, *Shanghai Jiao Tong University, P.R. China.*

### Complexity of Sizing for Space Suit Applications

Elizabeth Benson, *MEI Technologies, United States*; Sudhakar Rajulu, *NASA Johnson Space Center, United States.*

### A Novel Approach to CT Scans' Interpretation Via Incorporation into a VR Human Model

Sophia Sakellariou, *NHS Grampian, United Kingdom*; Vassilis Charissis, *University of Glasgow, United Kingdom*; Ben Ward, *The University of Edinburgh, United Kingdom*; David Chanock, *Ayr Hospital, United Kingdom*; Paul Anderson, *The Glasgow School of Art / University of Glasgow, United Kingdom.*

### An Advanced Modality of Visualization and Interaction with Virtual Models of the Human Body

Lucio De Paolis, Marco Pulimeno, Giovanni Aloisio, *Salento University, Italy.*

**HCD**

Human Centered Design

**Integrating Human Needs in Development**

Room: Royal Palm Salon Two  
Chair(s): Torkil Clemmensen, Copenhagen Business School, Denmark.

**User-Centered Design meets Feature-Driven Development. An Integrating Approach for Developing the Web Application myPIM**

Torsten Krohn, *itemis AG, Germany*;  
Martin Kindsmüller, Michael Herczeg, *University of Lübeck, Germany*.

**Integrating Human-Computer Interaction Artifacts Into System Development**

Megan Moundalexis, Janet Deery, Kendal Roberts, *Johns Hopkins University, United States*.

**Personas Layering: A Cost Effective Model for Service Design in Medium-Long Term Telco Research Projects**

Alessandro Marcengo, Elena Guercio, Amon Rapp, *Telecomitalia, Italy*.

**From Usability to Playability: Introduction to Player-Centred Video Game Development Process**

Jose Luis González Sánchez, Natalia Padilla Zea, Francisco Gutierrez Vela, *University of Granada, Spain*.

**A Method for Consistent Design of User Interaction with Multifunction Devices**

Dong San Kim, Wan Chul Yoon, *Korea Advanced Institute of Science & Technology (KAIST), Korea*.

**Changes of HCI Methods towards the Development Process of Wearable Computing Solutions**

Ingrid Rügge, Carmen Ruthenbeck, Bernd Scholz-Reiter, *BIBA GmbH - University of Bremen, Germany*.

**Bridging Software Evolution's Gap: the Multilayer Concept**

Bruno Merlin, *IRIT, France*;  
Christophe Hurter, *Centre d'Études de la Navigation Aérienne, France*;  
Mathieu Raynal, *Université Paul Sabatier, France*.

**HIMI**

Human Interface and the Management of Information

**Advanced Interfaces for Valuable Communication and Collaboration Support - II**

Room: Towne  
Chair(s): Yoshio Nakatani, *Ritsumeikan University, Japan*;  
Shogo Nishida, *Osaka University, Japan*.

**Structuring and Accessing Information Spaces**

Room: Sunrise  
Chair(s): Victoria Bellotti, *Palo Alto Research Center (PARC), United States*.

**Clinical Usefulness of Human-Computer Interface for Training Targeted Facial Expression - Application to Patients with Cleft Lip and/or Palate**

Kyoko Ito, Ai Takami, Shunpei Hanibuchi, Shogo Nishida, Masakazu Yagi, Setsuko Uematsu, Naoko Sigenaga, Kenji Takada, *Osaka University, Japan*.

**An Empirical Analysis of Personal Digital Document Structures**

Sarah Henderson, Ananth Srinivasan, *The University of Auckland, New Zealand*.

**Input Text Repairing for Multilingual Chat System**

Kenichi Yoshida, Fumio Hattori, *Ritsumeikan University, Japan*.

**Enhancing Document Clustering Through Heuristics and Summary-based Pre-processing**

Sri Harsha Allamraju, Robert Chun, *San Jose State University, United States*.

**Applications of Visible Light Path Laser Projector**

Nobuchika Sakata, Shu Okamoto, Shogo Nishida, *Osaka University, Japan*.

**Intelligent Photo Management System Enhancing Browsing Experience**

Yuki Orii, Takayuki Nozawa, Toshiyuki Kondo, *Tokyo University of Agriculture and Technology, Japan*.

**Search Mathematical Formulas by Mathematical Formulas**

Yoshinori Hijikata, Hideki Hashimoto, Shogo Nishida, *Osaka University, Japan*.

**A Tool for Analyzing Categorical Data Visually with Granular Representation**

Kousuke Shiraishi, Kazuo Misue, Jiro Tanaka, *University of Tsukuba, Japan*.

**Organization Diagnosis Tools based on Social Network Analysis**

Takanori Ugai, Kouji Aoyama, *Fujitsu Laboratories Ltd., Japan*.

**Adaptive Visual Clustering for Mixed-Initiative Information Structuring**

Hakan Duman, Alex Healing, Robert Ghanea-Hercock, *British Telecom, United Kingdom*.

**Metadata-Based Reminder Classification in Reminiscence Engineering**

Masashi Ishibashi, Yoshio Nakatani, *Ritsumeikan University, Japan*.

**Using Graphical Models for an Intelligent Mixed-Initiative Dialog Management System**

Stefan Schwärzler, Günther Ruske, Frank Wallhoff, Gerhard Rigoll, *Technical University of Munich, Germany*.

**Fashion Support from Clothes with Characteristics**

Yuri Yonezawa, Yoshio Nakatani, *Ritsumeikan University, Japan*.

**An Interactive-Content Technique Based Approach to Generating Personalized Commercial for Privacy Protection**

Wookhee Min, Yun-Gyung Cheong, *Samsung Electronics Co., Ltd, Korea*.

# Parallel Sessions

## HCI

Human-Computer Interaction

### Information Systems and Knowledge Management in Industry

Room: Sunset

Chair(s): Kazuo Furuta, *The University of Tokyo, Japan.*

### A Proposal of Awareness Services for the Construction of Quality Community Knowledge Supported by the Knowledge Management System KnowCat

Ruth Cobos Perez, *University Autonoma of Madrid, Spain*; Iván Dario Claros Gómez, *Universitat of Cauca, Colombia*; Jaime Moreno-Llorena, *University Autonoma of Madrid, Spain.*

### A Management System for Visual Communication Design at Film Studio

Hong-Sheng Chen, *Ling Tung University, Taiwan.*

### Usability Analyses of CRM Systems in Call Centers: The Data Mining Approach

Ádam Horváth, *László Laufer, Budapest University of Technology and Economics, Hungary*; András Kangyal, *Guanxi Media, Hungary.*

### Object-oriented Interactive Processes in Decentralized Production Systems

Thomas Schlegel, *University of Stuttgart, Germany.*

### A Fuzzy Multiple Criteria Decision Making Model for Selecting the Distribution Center Location in China: a Taiwanese Manufacturer's Perspective

Chien-Chang Chou, *National Kaohsiung Marine University, Taiwan*; Pei-Chann Chang, *Yuan-Ze University, Taiwan.*

### Supporting Scenario-based Product Design and Its Adapters: An Informal Framework for Scenario Creation and Use

Irene Anggreeni, *Mascha Van der Voort, University of Twente, Netherlands.*

### An Exploration of HCI Methods and Approaches in 2009

Room: Hampton

Chair(s): Jhilmil Jain, *Hewlett-Packard Labs, United States*; Catherine Courage, *salesforce.com, United States.*

### Studying Reactive, Risky, Complex, Long-Spanning, and Collaborative Work: The Case of IT Service Delivery

Eser Kandogan, *Eben Haber, John Bailey, Paul Maglio, IBM Almaden Research Center, United States.*

### Value of Using Multimodal Data in HCI Methodologies

Jhilmil Jain, *Hewlett-Packard Labs, United States.*

### Leveraging a User Research Framework to Guide Research Investments: Windows Vista Case Study

Gayna Williams, *Microsoft Corporation, United States.*

### Estimating Productivity: Composite Operators for Keystroke Level Modeling

Jeff Sauro, *Oracle Corporation, United States.*

### Usability for Poll Workers: A Voting System Usability Test Protocol

Dana Chisnell, *UsabilityWorks, United States*; Karen Bachmann, *Seascope Consulting, United States*; Sharon Laskowski, *Svetlana Lowry, National Institute of Standards and Technology (NIST), United States.*

### Building on the Usability Study: Two Explorations on How to Better Understand an Interface

Anshu Agarwal, *Madhu Prabaker, salesforce.com, United States.*

### Website Designer as an Evaluator: A Formative Evaluation Method for Website Interface Development

Chao-Yang Yang, *Chang Gung University, Taiwan.*

### Touch and Gesture Interfaces: Design and User Experience Challenges and Success Stories

Room: Sheffield

Chair(s): Gavin Lew, *User Centric, Inc., United States.*

### "I Love My iPhone ... But There are Certain Things that 'Niggle' Me."

Anna Haywood, *Gemma Boguslawski, Serco, United Kingdom.*

### Influence of Real-World Ten-Pin Bowling Experience on Performance During First-Time Nintendo Wii Bowling Practice

Kirsten Peters, *User Centric, Inc., United States.*

### Potential Limitations of Multi-touch Gesture Vocabulary: Differentiation, Adoption, Fatigue

Wendy Yee, *User Centric, Inc., United States.*

### Orientation Responsive Touch Interaction

Jinwook Kim, *Jong-gil Ahn, Heedong Ko, Korea Institute of Science and Technology (KIST), Korea.*

### VTouch: A Vision-Base Dual Finger Touched Inputs for Large Displays

Ching-Han Chen, *Cun-Xian Nian, National Central University, Taiwan.*

### TACTUS: A Hardware and Software Testbed for Research in Multi-Touch Interaction

Paul Varcholik, *Joeseoph LaViola, Denise Nicholson, University of Central Florida, United States.*

### VersaPatch: A Low Cost 2.5D Capacitive Touch Sensor

Ray Bittner, *Mike Sinclair, Microsoft Research, United States.*

### Physiological Signal Monitoring in Human-Computer Interaction

Room: Garden Salon One

Chair(s): Armando Barreto, *Florida International University, United States.*

### Development of Symbiotic Brain-Machine Interfaces using a Neurophysiology Cyberworkstation

Justin Sanchez, *Renato Figueiredo, Jose Fortes, Jose Principe, University of Florida, United States.*

### Decoding Attentional Orientation from EEG Spectra

Ramesh Srinivasan, *Sam Thorpe, Siyi Deng, Tom Lappas, Michael D'Zmura, University of California, Irvine, United States.*

### Toward EEG Sensing of Imagined Speech

Michael D'Zmura, *Siyi Deng, Tom Lappas, Sam Thorpe, Ramesh Srinivasan, University of California, Irvine, United States.*

### An Affect-Sensitive Social Interaction Paradigm Utilizing Virtual Reality Environments for Autism Intervention

Karla Welch, *Uttama Lahiri, Changchun Liu, Rebecca Weller, Nilanjan Sarkar, Zachary Warren, Vanderbilt University, United States.*

### Monitoring and Processing of the Pupil Diameter Signal for Affective Assessment of a Computer User

Ying Gao, *Armando Barreto, Malek Adjouadi, Florida International University, United States.*

### A Method to Monitor Operator Overloading

Dvijesh Shastri, *Ioannis Pavlidis, Avinash Wesley, University of Houston, United States.*

### Bio-sensing for Emotional Characterization without Word Labels

Tessa Verhoeef, *University of Amsterdam, Netherlands*; Christine Lisetti, *Armando Barreto, Francisco Ortega, Florida International University, United States*; Tijn Van der Zant, *Fokke Cnossen, University of Groningen, Netherlands.*

Friday 10:30 - 12:30

**HCI**

**Interacting with Everyday Objects**

Room: Windsor

Chair(s): Christophe Kolski, *University of Valenciennes and Hainaut-Cambrésis, France.*

**Generic Framework for Transforming Everyday Objects into Interactive Surfaces**

Elena Mugellini, Omar Abou Khaled, Stephane Pierroz, Stefano Carrino, Houda Chabbi, *Univ. of Applied Sciences of W. Switzerland, Fribourg, Switzerland.*

**Object Scanning Using a Sensor Frame**

Soon Mook Jung, Tae Houn Song, Gihoon Go, Keyho Kwon, Jae Wook Jeon, *Sungkyunkwan University, Korea.*

**New Human-Computer Interactions Using Tangible Objects: Application on a Digital Tabletop with RFID Technology**

Sébastien Kubicki, Sophie Lepreux, Yoann Lebrun, Philippe Dos Santos, Christophe Kolski, Jean Caelen, *University of Valenciennes and Hainaut-Cambrésis, France.*

**A Basic Study of Sensory Characteristics Toward Interaction with a Box-Shaped Interface Device**

Noriko Suzuki, Tosirou Kamiya, Shunsuke Yoshida, Sumio Yano, *National Institute of Info & Com. Technology (NICT), Japan.*

**Development of an Expert System as a User Interface for an RFID Application**

Deok Nam, *Wilberforce University, United States.*

**Multi-pointing Method using a Desk Lamp and Single Camera for Effective Human-Computer Interaction**

Tae Houn Song, Thien Cong Pham, Soon Mook Jung, Ji Hwan Park, Keyho Kwon, Jae Wook Jeon, *Sungkyunkwan University, Korea.*

**Interaction Technique for a Pen-Based Interface Using Finger Motions**

Yu Suzuki, Kazuo Misue, Jiro Tanaka, *University of Tsukuba, Japan.*

**EPCE**

**Development and Application of Cognitive Models in Vehicle Guidance**

Room: Crescent

Chair(s): Axel Schulte, *Bundeswehr University Munich, Germany.*

**Direct Perception Displays for Military Radar-based Air Surveillance**

Oliver Witt, Morten Grandt, Heinz Küttelwesch, *FGAN e.V., Germany.*

**Conflicts in Human Operator - Unmanned Vehicles Interactions**

Frédéric Dehais, *Institut Supérieur de l'Aéronautique et de l'Espace, France;* Stephane Mercier, Catherine Tessier, *ONERA, France.*

**Supervision of Autonomous Vehicles: Mutual Modelling and Interaction Management**

Gilles Coppin, François Legras, Sylvie Saget, *Telecom Bretagne, France.*

**Human-UAV Co-operation Based on Artificial Cognition**

Claudia Meitinger, Axel Schulte, *Bundeswehr University Munich, Germany.*

**Behavior Model Based Recognition of Critical Pilot Workload as Trigger for Cognitive Operator Assistance**

Diana Donath, Axel Schulte, *Bundeswehr University Munich, Germany.*

**Understanding the Opinion Forming Processes of Experts and Customers During Evaluations of Automotive Sounds**

Louise Humphreys, Sebastiano Giudice, Paul Jennings, Rebecca Cain, *University of Warwick, United Kingdom;* Garry Dunne, *Jaguar Land Rover, United Kingdom;* Mark Allman-Ward, *Sound Evaluations Ltd., United Kingdom.*

**Tactical Reconnaissance Using Groups of Partly Autonomous UGVs**

Peter Svenmarck, Dennis Andersson, Björn Lindahl, Johan Hedström, Patrik Lif, *Swedish Defence Research Agency (FOI), Sweden.*

**UAHCI**

**FUITEL09: Future Interfaces in Technology Enhanced Learning and Training**

Room: Pacific Salon One

Chair(s): Andreas Holzinger, *Medical University Graz, Austria;* Alexander Nischelwitzer, *Austria;* Harold Thimbleby, *Swansea University, United Kingdom.*

**Digital Design Mobile Virtual Laboratory Implementation: A Pragmatic Approach**

Vlado Glavinic, *University of Zagreb, Croatia;* Mihael Kukec, *College of Applied Sciences Varazdin, Croatia;* Sandi Ljubic, *University of Rijeka, Croatia.*

**Intuitive E-Teaching by Using Combined HCI Devices: Experiences with Wiimote Applications**

Andreas Holzinger, *Medical University Graz, Austria;* Selver Softic, Christian Stickel, Martin Ebner, *Graz University of Technology, Austria;* Matjaz Debevc, *University of Maribor, Slovenia.*

**Emotion Detection: Application of the Valence Arousal Space for Rapid Biological Usability Testing to Enhance Universal Access**

Christian Stickel, Martin Ebner, *Graz University of Technology, Austria;* Silke Steinbach-Nordmann, *Fraunhofer, Germany;* Gig Searle, Andreas Holzinger, *Medical University Graz, Austria.*

**Towards Universal Access to Home Monitoring for Assisted Living Environment**

Rezwan Islam, *Marshfield Clinic, United States;* Iqbal Ahamed, Sharif Hasan, Mohammad Tanviruzzaman, *Marquette University, United States.*

**Mixing Content and Endless Collaboration - MashUps: Towards Future Personal Learning Environments**

Andreas Auinger, *Upper Austria University of Applied Sciences, Austria;* Martin Ebner, *Graz University of Technology, Austria;* Dietmar Nedbal, *Upper Austria University of Applied Sciences, Austria;* Andreas Holzinger, *Medical University Graz, Austria.*

**Interactive Game Based Learning: Advantages and Disadvantages**

Margit Pohl, Markus Rester, Peter Judmaier, *Vienna University of Technology, Austria.*

**Teaching and Learning HCI**

Harold Thimbleby, *Swansea University, United Kingdom.*

**Sign Language Technologies**

Room: Royal Palm Salon One

Chair(s): Eleni Efthimiou, Christian Vogler, *Institute for Language and Speech Processing (ILSP), Greece.*

**A Similarity Measure for Vision-Based Sign Recognition**

Haijing Wang, Alexandra Stefan, Vassilis Athitsos, *University of Texas at Arlington, United States.*

**Sign Language Recognition: Working With Limited Corpora**

Helen Cooper, Richard Bowden, *University of Surrey, United Kingdom.*

**Improving Spatial Reference in American Sign Language Animation through Data Collection from Native ASL Signers**

Matt Huenerfauth, *City University of New York, Queens College, United States.*

**Partially Observable Markov Decision Process (POMDP) Technologies for Sign Language based Human-Computer Interaction**

Sylvie C.W. Ong, David Hsu, Wee Sun Lee, Hanna Kurniawati, *National University of Singapore, Singapore.*

**Sign Language Online with Signlink Studio 2.0**

Deborah Fels, Martin Gerdzhev, Ellen Hibbard, Abby Goodrum, *Ryerson University, Canada;* Jan Richards, *University of Toronto, Canada;* Jim Hardman, *Canadian Hearing Society, Canada;* Norma Thompson, *Ryerson University, Canada.*

**Sign Language Recognition, Generation and Modelling: A Research Effort with Applications in Deaf Communication**

Eleni Efthimiou, Stavroula-Evita Fotinea, Christian Vogler, *Institute for Language and Speech Processing (ILSP), Greece;* Thomas Hanke, *Universität Hamburg, Germany;* John Glauert, *University of East Anglia, United Kingdom;* Richard Bowden, *University of Surrey, United Kingdom;* Annelies Braffort, *CNRS-LIMS, France;* Christophe Collet, *Université Paul Sabatier, France;* Petros Maragos, *National Technical University of Athens, Greece;* Jérémie Segouat, *Websourd, France.*

Engineering Psychology and Cognitive Ergonomics

Universal Access in Human-Computer Interaction

# Parallel Sessions

## Distributed Intelligence and the Web

Room: Pacific Salon Two

Chair(s): Pier Luigi Emiliani, *National Research Council (CNR), Italy.*

## User Interface Adaptation of Web-based Services on the Semantic Web

Nikolaos Partarakis, Constantina Doulgeraki, Asterios Leonidis, Margherita Antona, Constantine Stephanidis, *Foundation for Research & Technology - Hellas (FORTH), Greece.*

## Dynamic Adaptation of Web 2.0 Applications by Combining Extended Device Profiles

Carlos Velasco, Yehya Mohamad, Jaroslav Pullmann, *Fraunhofer, Germany.*

## Using Distributed Processing to Create More Powerful, Flexible and User Matched Accessibility Services

Gregg Vanderheiden, *University of Wisconsin-Madison, United States.*

## Why Here and Now

Antonio Rizzo, *University of Siena, Italy*; Elisa Rubegni, *University of Lugano, Switzerland*; Maurizio Caporali, *University of Siena, Italy.*

## User Empowerment in Standardization

Mathijs Soede, Nienke Blijham, Manon Verdonshot, *VILANS, Netherlands.*

## Web 3D Challenges on the Socialization and Integration of People with Activity Limitations

Yiannis Laouris, *Cyprus Neuroscience & Technology Institute, Cyprus.*

## "Art-sonomy": Social Bookmarking of Real Artworks via Mobile Applications with Visual Tags

Stefano Levialdi Ghiron, Carlo Maria Medaglia, Amedeo Perrone, *«Sapienza» University of Rome, Italy.*

## Intelligence on the Web and e-Inclusion

Laura Burzagli, Francesco Gabbanini, *National Council of Research (CNR), Italy.*

## Accessibility Issues and Studies

Room: Pacific Salon Three

Chair(s): Ioannis Basdekis, *Foundation for Research & Technology - Hellas (FORTH), Greece.*

## Accessible User Interfaces in a Mobile Logistics System

Harald Jansson, *Norkart Geoservice, Norway*; Robert Bjaerum, *Tellu AS, Norway*; Riitta Hellman, *Karde AS, Norway*; Sverre Morka, *Tellu AS, Norway.*

## Evaluating Groupware Accessibility

John Schoeberlein, Yuanqiong (Kathy) Wang, *Towson University, United States.*

## Conformity Assessment in the Public Procurement of Accessible ICT

Stephan Corvers, *Corvers Procurement Services BV, Netherlands*; Loïc Martinez-Normand, *Technical University of Madrid (UPM), Spain*; Clas Thoren, *Swedish Administrative Development Agency, Sweden*; Enrique Varela, *Fundación ONCE and freelance consultant, Spain*; Eric Velleman, *Bartiméus Accessibility Foundation, Netherlands*; Klaus-Peter Wegge, *Siemens Accessibility Competence Center, Germany.*

## The Usability of Web Accessibility Guidelines: An Approach for Evaluation

Maria Kapsi, Evangelos Vlachogiannis, Jenny Darzentas, Thomas Spyrou, *University of the Aegean, Greece.*

## Overview of a Brazilian Governmental Portal from Web Accessibility's Point of View

Timoteo Tangarife, *ELETROBRÁS, Brazil*; Claudia MontAlvao, *Catholic University of Rio de Janeiro (PUC-Rio), Brazil.*

## Groupware Accessibility for Persons with Disabilities

John Schoeberlein, Yuanqiong (Kathy) Wang, *Towson University, United States.*

## Adaptive User Interfaces: Benefit or Impediment for Lower-literacy Users?

Ivar Solheim, *Norwegian Computing Center, Norway.*

## VMR

## Constructing Mixed Reality Environment

Room: Garden Salon Two

Chair(s): Hirokazu Kato, *Nara Institute of Science and Technology, Japan.*

## A Feasible Tracking Method of Augmented Reality for Supporting Fieldwork of Nuclear Power Plant

Weida Yan, Hirotake Ishii, Hiroshi Shimoda, *Kyoto University, Japan*; Masanori Izumi, *Japan Atomic Energy Agency, Japan.*

## A Novel Approach to On-site Camera Calibration and Tracking for MR Pre-visualization Procedure

Wataru Toishita, Yutaka Momoda, Ryuhei Tenmoku, Fumihisa Shibata, Hideyuki Tamura, *Ritsumeikan University, Japan*; Takafumi Taketomi, Tomokazu Sato, Naokazu Yokoya, *Nara Institute of Science and Technology, Japan.*

## Complemental Use of Multiple Cameras for Stable Tracking of Multiple Markers

Yuki Arai, Hideo Saito, *Keio University, Japan.*

## Balancing Design Freedom and Constraints in Wall Posters Masquerading as AR Tracking Markers

Ryuhei Tenmoku, Akito Nishigami, Fumihisa Shibata, *Ritsumeikan University, Japan*; Asako Kimura, *Japan Science and Technology Agency, Japan*; Hideyuki Tamura, *Ritsumeikan University, Japan.*

## AR City Representation System based on Map Recognition using Topological Information

Hideaki Uchiyama, Hideo Saito, *Keio University, Japan*; Myriam Servieres, Guillaume Moreau, *Ecole Centrale de Nantes-CERMA IRSTV, France.*

## In-Situ 3D Indoor Modeler with a Camera and Self-Contained Sensors

Tomoya Ishikawa, Kalaivani Thangamani, Masakatsu Kourogi, *National Institute of Advanced Industrial Sc. & Tech., Japan*; Andrew Gee, Walterio Mayol-Cuevas, *University of Bristol, United Kingdom*; Keechul Jung, *Soongsil University, Korea*; Takeshi Kurata, *National Institute of Advanced Industrial Sc. & Tech., Japan.*

## Interactive Fluid Simulation using Augmented Reality Interface

Makoto Fujisawa, Hirokazu Kato, *Nara Institute of Science and Technology, Japan.*

## IDGD

## Computing for Sustainable Socio-Economic Development

Room: Royal Palm Salon Six

Chair(s): Kentaro Toyama, *Microsoft Research, India.*

## txteagle: Mobile Crowdsourcing

Nathan Eagle, *Massachusetts Institute of Technology (MIT), United States.*

## Affordable Wireless Connectivity. Linking Poor Latin American Communities. Binding their Schools by Sharing ICT Training for "Maestros" of Primary Schools.

Oswaldo Rodriguez, *Universidad Nacional de La Plata, Argentina.*

## Representation and Reflexivity in ICT for Development (Telecentre) Research

Savita Bailur, *London School of Economics and Political Science, United Kingdom.*

## The Application of ICTs and Digital Divide in Rural China

Peng Chen, *Tsinghua University, P.R. China*; JiePing Wang, *Qinghua University, P.R. China*; Zuoxian Si, *Tsinghua University, P.R. China*; Jie Wang, Ying Liu, *Nokia Research Center, Beijing, P.R. China.*

## Ubiquitous Society – Cultural Factors driving Mobile Innovations and Adoption in Japan

Henning Breuer, *Bovacon / Deutsche Telekom Labs / Waseda University, Germany.*

## The Future of Enterprise IS with the Mobile Workforce: An International Field Study

Lynn Rampoldi-Hnilo, Brent White, Michele Snyder, Chad Sampanes, *Oracle Corporation, United States.*

## Looking for the Image of Modernization: The Story of Made in Taiwan (MIT)

Ju-Joan Wong, *Chang Gung University, Taiwan.*

Virtual and Mixed Reality

Internationalization, Design and Global Development

Friday 10:30 - 12:30

AC

**Augmented Cognition Applications Applied to Deception, Intent and Cognitive Load**

Room: Royal Palm Salon Five  
 Chair(s): Martha Crosby, University of Hawaii at Manoa, United States.

**Eye Movements and Pupil Size Reveal Deception in Computer Administered Questionnaires**

Andrea Webb, Douglas Hacker, Dahvyn Osher, Anne Cook, Dan Woltz, University of Utah, United States; Sean Kristjansson, Washington University in St. Louis, United States; John Kircher, University of Utah, United States.

**Detecting Intentional Errors Using the Pressures Applied to a Computer Mouse**

Curtis Ikehara, Martha Crosby, University of Hawaii at Manoa, United States.

**Identifying the Nature of Knowledge Using the Pressures Applied to a Computer Mouse**

Martha Crosby, Curtis Ikehara, University of Hawaii at Manoa, United States; Wendy Ark, IBM Almaden Research Center, United States.

**Use of Deception to Improve Client Honey-pot Detection of Drive-by-Download Attacks**

Barbara Endicott-Popovsky, Julia Narvaez, University of Washington, United States; Christian Seifert, Victoria University of Wellington, New Zealand; Deborah Frincke, Lori Ross O'Neil, Pacific Northwest National Laboratory, United States; Chiraag Aval, University of Washington, United States.

**Visual Navigation Patterns and Cognitive Load**

Laurel King, University of Hawaii at Manoa, United States.

**Implications of User Anxiety in the Evaluation of Deception in Web Sites**

Brent Auernheimer, California State University, Fresno, United States; Marie Iding, Martha Crosby, University of Hawaii at Manoa, United States.

**User's Motion for Shape Perception using CyARM**

Ryo Mizuno, Kiyohide Ito, Tetsuo Ono, Future University-Hakodate, Japan; Junichi Akita, Kanazawa University, Japan; Takanori Komatsu, Shinshu University, Japan; Makoto Okamoto, Future University-Hakodate, Japan.

DHM

**Modeling Human Behavior for Smart Environments**

Room: Royal Palm Salon Four  
 Chair(s): Peter Forbrig, Thomas Kirste, University of Rostock, Germany; Kris Luyten, University of Hasselt, Belgium.

**The Five Commandments of Activity-aware Ubiquitous Computing Applications**

Nasim Mahmud, Jo Vermeulen, Kris Luyten, Karin Coninx, University of Hasselt, Belgium.

**Ambient Compass: One Approach to Model Spatial Relations**

Petr Aksenov, Geert Vanderhulst, Kris Luyten, Karin Coninx, University of Hasselt, Belgium.

**Behavior-sensitive User Interfaces for Smart Environments**

Veit Schwartze, Sebastian Feuerstack, Sahin Albayrak, Berlin University of Technology, Germany.

**Modeling Human Actors in an Intelligent Automated Warehouse**

Davy Preuveneers, Yolande Berbers, Katholieke Universiteit Leuven, Belgium.

**Towards an Holistic Understanding of Tasks, Objects and Location in Collaborative Environments**

Maik Wurdel, University of Rostock, Germany.

**A Probabilistic Approach for Modeling Human Behavior in Smart Environments**

Christoph Burghardt, Thomas Kirste, University of Rostock, Germany.

HCD

**HCD and Innovation**

Room: Royal Palm Salon Three  
 Chair(s): Kazuhiko Yamazaki, Chiba Institute of Technology, Japan.

**HCD Case Study for the Information Security Training System**

Akira Kondo, Hitachi Intermedix Co., Ltd., Japan; Makoto Yoshii, I.S.T. Co., Ltd., Japan.

**Approach to Human Centered Design Innovation by Utilized Paper Prototyping**

Kazuhiko Yamazaki, Chiba Institute of Technology, Japan.

**Engaging and Adaptive: Going Beyond Ease of Use**

Kevin Clark, IBM Corporation, United States.

**Organized Reframing Process with Vide Ethnography: A Case Study of Students' Design Project for New Interface Concept from Research to Visualization**

Katsuhiko Kushi, Kyoto Institute of Technology, Japan.

**Social Robot Design**

Seita Koike, Masayuki Sugawara, Yuki Kutsukake, Sayaka Yamanouchi, Kie Sato, Tokyo City University, Japan; Yoshihiro Fujita, NEC Corporation, Japan; Junichi Osada, NEC Design & Promotion, Ltd., Japan.

**Common Understanding of Graphic Image Enhance «Emotional Design»**

Hisashi Shima, Lenovo Japan Ltd., Japan.

**Cognitive Engineering for Direct Human-Robot Cooperation in Self-Optimizing Assembly Cells**

Marcel Mayer, Barbara Odenthal, Marco Faber, Jan Neuhöfer, Wolfgang Kabuß, Bernhard Kausch, Christopher Schlick, RWTH Aachen University, Germany.

**Human Centered Learning and Education**

Room: Royal Palm Salon Two  
 Chair(s): Matti Vartiainen, Helsinki University of Technology, Finland.

**Fundamental Studies on Effective e-Learning Using Physiology Indices**

Miki Shibukawa, Mariko Funada, Hakuoh University, Japan; Yoshihide Igarashi, Gunma University, Japan; Satoki Ninomija, Aoyama Gakuin University, Japan.

**User Centered Design of a Learning Object Repository**

Nuria Ferran Ferrer, Ana-Elena Guerrero-Roldán, Enric Mor, Julià Minguiellón, Universitat Oberta de Catalunya (UOC), Spain.

**Affectively Intelligent User Interfaces for Enhanced E-Learning Applications**

Fatma Nasoz, Mehmet Bayburt, University of Nevada, Las Vegas, United States.

**Combining Fast-paced Usability and Scientific Testing to Improve the Lunar Quest Physics Game**

Holly Blasko-Drabik, James Bohnsack, Clint Bowers, University of Central Florida, United States.

**Looking for the 3D Picture: the Spatio-Temporal Realm of Student Controllers**

Monica Tavanti, Matthew Cooper, Linköping University, Sweden.

Ergonomics and Health Aspects of Work with Computers

## EHAWC

### Health, Comfort and Stress at Work

Room: Towne

Chair(s): Gyouhyung Kyung, HYUNDAI-KIA Motors, Korea.

**Examining the Effects of Workstation Design Satisfaction, Computer Usage, Supervisory and Co-worker Support on Perceived Physical Discomfort and Psychosocial Factors**  
Michelle Robertson, Emily Huang, Liberty Mutual Research Institute for Safety, United States; Nancy Larson, 3M Corporation, United States.

**Relationship Between Emotional State and Pupil Diameter Variability Under Various Types of Workload Stress**  
Kiyomi Sakamoto, Shoichi Aoyama, Shigeo Asahara, Panasonic Corporation, Japan; Haruki Mizushina, Hirohiko Kaneko, Tokyo Institute of Technology, Japan.

**The Relationship Between Working Conditions and Musculoskeletal / Ergonomic Disorders in a Manufacturing Facility – A Longitudinal Research Study**  
Dennis Jones, Northern Illinois University, United States.

**Development of Portable Robotic Operation Terminals to Achieve Increased Safety and Usability and a Study on the Effectiveness of Wireless Terminals**  
Hidetoshi Fukui, Satoshi Yonejima, Masatake Yamano, Masao Dohi, Tomonori Nishiki, Mariko Yamada, Toshihiro Fujita, IDEC Corporation, Japan.

**Participatory Ergonomics as a Method of Quality Improvement in Maintenance**  
Małgorzata Jasiulewicz-Kaczmarek, Poznan University of Technology, Poland.

**What is Prospective Ergonomics? A Reflection and a Position on the Future of Ergonomics**  
Jean-Marc Robert, École Polytechnique de Montréal, Canada; Eric Brangier, Paul Verlaine University - Metz, France.

**Improvement of the Design Quality of 3D-Input Devices Using Motion Analyses and Biomechanical Comparisons**  
Tobias Nowack, Stefan Lutherdt, Manuel Möller, Peter Kurtz, Hartmut Witte, Ilmenau University of Technology, Germany.

Human Interface and the Management of Information

## HIMI

### Designing the Services/Contents in Post Ubiquitous Society

Room: Garden Salon Two

Chair(s): Sakae Yamamoto, Tokyo University of Science, Japan; Hirohiko Mori, Musashi Institute of Technology, Japan.

**Transcending Human-Centered Design by Service Sciences**  
Hiroyuki Miki, OKI Electric Industry Co., Ltd., Japan; Naotsune Hosono, OKI Consulting Solutions (OCS), Japan; Sakae Yamamoto, Tokyo University of Science, Japan.

**Implications for Developing Information System on Nursing Administration - Case Study on Nurse Scheduling System –**  
Mitsuhiko Karashima, Tokai University, Japan; Naotake Hirasawa, Otaru University of Commerce, Japan.

**A Study on Color Conversion for Color Deficient People to Identify Color**  
Makoto Oka, Musashi Institute of Technology, Japan; Naoki Ozawa, Keio University, Japan; Hirohiko Mori, Musashi Institute of Technology, Japan; Akito Sakurai, Keio University, Japan.

**Manipulation with Fingers in a 3-D Physical Space**  
Yuki Kanai, Makoto Oka, Hirohiko Mori, Musashi Institute of Technology, Japan.

**Urgent Collaboration Service for Inclusive Use**  
Naotsune Hosono, OKI Consulting Solutions (OCS), Japan; Hiroyuki Miki, OKI Electric Industry Co., Ltd., Japan; Michio Suzuki, Architectural Association of Japanese DEAF (AAJD), Japan; Yutaka Tomita, Keio University, Japan.

**A Development of Information System for Disaster Victims with Autonomous Wireless Network**  
Yuichi Takahashi, Tokyo University of Science, Japan; Daiji Kobayashi, Chitose Institute of Science and Technology, Japan; Sakae Yamamoto, Tokyo University of Science, Japan.

**Designing Transportation Services Based on HCD**  
Kiko Yamada-Kawai, Naotake Hirasawa, Shinya Ogata, Shou Ohtsu, Otaru University of Commerce, Japan.

### How to Get UE Results Implemented?

Room: Crescent

Chair(s): Xiaowei Yuan, Beijing ISAR User Interface Design Co. Ltd., P.R. China.

**Improving the User Experience of our own UX Ideas**  
Joel Eden, Infragistics, United States.

**The 7 Basic Functions of a Digital Library - Analysis of Focus Groups about the Usefulness of a Thematic Digital Library on the History of European Integration**  
Eric Brangier, Jerome Dinet, Paul Verlaine University - Metz, France; Laurent Eilrich, Centre Virtuel de la Connaissance sur l'Europe, Luxembourg.

**The Roles of Profession and Gender in Some PIM Tasks**  
Guangfeng Song, Pennsylvania State University, United States; Chen Ling, University of Oklahoma, United States.

**Data Pattern for Allocating User Experience Meta-Data to User Experience Research Data**  
Li Li, Beijing ISAR User Interface Design Co. Ltd., P.R. China; Hong Ji, China Telecom Group Shanghai Co., Ltd., P.R. China; Xuejiao Chen, Xiaowei Yuan, Beijing ISAR User Interface Design Co. Ltd., P.R. China.

**A Human Factors Model for Enterprise Resources Planning System Implementation**  
Chiuhsiang Joe Lin, Chung Yuan Christian University, Taiwan; Chih-Wei Yang, Institute of Nuclear Energy Research, Taiwan; Shi-Bin Lin, Shiau-Feng Lin, Chung Yuan Christian University, Taiwan.

**A Model for Measurement and Analysis of the Workflow Processes**  
Pavel Ocenasek, Miroslav Sveda, Brno University of Technology, Czech Republic.

Human-Computer Interaction

## HCI

### Interaction in Smart Environments

Room: Hampton

Chair(s): Dieter Spath, Fraunhofer, Germany.

**Challenges for User Centered Smart Environments**  
Fabian Hermann, Roland Blach, Doris Janssen, Thorsten Klein, Andreas Schuller, Dieter Spath, Fraunhofer, Germany.

**Acceptance of Future Technologies Using Personal Data: A Focus Group with Young Internet Users**  
Fabian Hermann, Doris Janssen, Daniel Schipke, Andreas Schuller, Fraunhofer, Germany.

**Reliable Evaluation of Multimodal Dialogue Systems**  
Florian Metzke, Carnegie Mellon University, United States; Ina Wechsung, Stefan Schaffer, Julia Seebode, Sebastian Möller, TU Berlin, Deutsche Telekom Laboratories, Germany.

**An Interoperable Concept for Controlling Smart Homes - The ASK-IT Paradigm**  
Evangelos Bekiaris, Kostas Kalogirou, Alexandros Mourouzis, Maria Panou, Centre for Research and Technology Hellas (CERTH), Greece.

**Comparison of Different Talking Heads in Non-Interactive Settings**  
Benjamin Weiss, Christine Kühnel, Ina Wechsung, Sebastian Möller, TU Berlin, Deutsche Telekom Laboratories, Germany; Sascha Fagel, Berlin University of Technology, Germany.

**Performance Assessment of Swarm Robots**  
Ercan Oztemel, Marmara University, Turkey; Cemalettin Kubat, Ozer Uygun, Tuba Canvar, Tulay Korkusuz, Sakarya University, Turkey; Vinesh Raja, University of Warwick, United Kingdom; Anthony Soroka, Cardiff University, United Kingdom.

**Using Acoustic Landscapes for the Evaluation of Multimodal Mobile Applications**  
Wolfgang Beinbauer, Cornelia Hipp, Fraunhofer, Germany.

**Understanding the Older User of Ambient Technologies**  
Andrew Sixsmith, Simon Fraser University, Canada.

Friday 13:30 - 15:30

# Parallel Sessions

## HCI

### Usability Evaluation Methods and Techniques

Room: Sheffield

Chair(s): Carlos Duarte, *University of Lisbon, Portugal.*

### Webjig: An Automated User Data Collection System for Website Usability Evaluation

Mikio Kiura, Masao Ohira, Ken-ichi Matsumoto, *Nara Institute of Science and Technology, Japan.*

### Evaluating Mobile Usability: The Role of Fidelity in Full-Scale Laboratory Simulations with Mobile ICT for Hospitals

Yngve Dahl, *Telenor Research & Innovation, Norway*; Ole Alsos, Dag Svanæs, *Norwegian University of Science and Technology, Norway.*

### Usability Evaluation of Multimodal Interfaces: Is the Whole the Sum of its Parts?

Ina Wechsung, Klaus-Peter Engelbrecht, Stefan Schaffer, Julia Seebode, *TU Berlin, Deutsche Telekom Laboratories, Germany*; Florian Metzke, *Carnegie Mellon University, United States*; Sebastian Möller, *TU Berlin, Deutsche Telekom Laboratories, Germany.*

### Multi-Level Validation of the ISOMetrics Questionnaire Based on Qualitative and Quantitative Data Obtained from a Conventional Usability Test

Jan-Paul Leuteritz, Harald Widroither, *Fraunhofer, Germany*; Michael Klueh, *Hansgrohe AG, Germany.*

### Web-Based System Development for Usability Evaluation of Ubiquitous Computing Device

Jongkyu Choi, Hanjoon Kim, Beomsuk Jin, Yong Gu Ji, *Yonsei University, Korea.*

### Usability Evaluation by Monitoring Physiological and Other Data Simultaneously with a Time-Resolution of Only a Few Seconds

Karoly Hercegfı, Márton Pászti, Sarolta Tóvölgyi, Lajos Izsó, *Budapest University of Technology and Economics, Hungary.*

### Analysis of Breakdowns in Menu-Based Interaction Based on Information Scent Model

Yukio Horiguchi, Hiroaki Nakanishi, Tetsuo Sawaragi, Yuji Kuroda, *Kyoto University, Japan.*

### Web Design

Room: Garden Salon One

Chair(s): Jan-Torsten Milde, *Fulda University of Applied Sciences, Germany.*

### A System to Construct an Interest Model of User Based on Information in Browsed Web Page by User

Kosuke Kawazu, Masakazu Murao, *Keio University, Japan*; Takeru Ohta, Masayoshi Mase, *Keywalker, Inc., Japan*; Takashi Maeno, *Keio University, Japan.*

### Enabling Interactive Access to Web Tables

Xin Yang, Wenchang Xu, Yuanchun Shi, *Tsinghua University, P.R. China.*

### A Web-Based, Interactive Annotation Editor for the eCampus Development Environment for SCORM Compliant E-Learning Modules

Benedikt Deicke, Jan-Torsten Milde, Hans-Martin Pohl, *Fulda University of Applied Sciences, Germany.*

### A Prototype to Validate ErgoColn: a Web Site Ergonomic Inspection Technique (financially supported by FAPESP, Brazil, www.fapesp.br)

Marcelo Morandini, *University of Sao Paulo (USP), Brazil*; Walter Cybis, *École Polytechnique de Montréal, Canada*; Dominique Scapin, *INRIA, France.*

### Client-Side Visualization of Internet Forums for Information Retrieval

Guangfeng Song, *Pennsylvania State University, United States.*

### Integration of Creativity into Website Design

Liang Zeng, Robert Proctor, *Purdue University, United States*; Gavriel Salvendy, *Purdue University / Tsinghua University, United States.*

### Novel Approaches to User Interface Development

Room: Windsor

Chair(s): Christian Maertin, *Augsburg University of Applied Sciences, Germany.*

### PaMGIS: A Framework for Pattern-Based Modeling and Generation of Interactive Systems

Juergen Engel, Christian Maertin, *Augsburg University of Applied Sciences, Germany.*

### Continuous User Interfaces for Seamless Task Migration

Pardha Pyla, Manas Tungare, *Virginia Tech, United States*; Jerome Holman, *Microsoft Corporation, United States*; Manuel Pérez-Quiñones, *Virginia Tech, United States.*

### Collage: A Declarative Programming Model for Compositional Development of Web Applications

Bruce Lucas, Rahul Akolkar, Charles Wiecha, *IBM T.J. Watson Research Center, United States.*

### OntoDesk: Ontology-Based Persistent System-Wide Undo on the Desktop

David Nemeskey, Buntarou Shizuki, Jiro Tanaka, *University of Tsukuba, Japan.*

### Motion Stroke - A Tablet-Based Interface for Motion Design Tool Using Drawing

Haruki Kouda, Ichiroh Kanaya, Kosuke Sato, *Osaka University, Japan.*

### Pattern Recognition Strategies for Interactive Sketch Composition

Sébastien Macé, Eric Anquetil, *IRISA, France.*

### Data Mining of Image Segments Data with Reduced Neurofuzzy System

Deok Nam, Edward Asikele, *Wilberforce University, United States.*

## EPCE

### Information Complexity of Systems and Displays

Room: Sunset

Chair(s): Chen Ling, *University of Oklahoma, United States.*

### Effect of Aircraft Datablock Complexity and Exposure Time on Performance of Change Detection Task

Chen Ling, Lesheng Hua, *University of Oklahoma, United States.*

### Analyzing Control-Display Movement Compatibility: a Neuroimaging Study

S.M. Hadi Hosseini, Maryam Rostami, Makoto Takahashi, *Tohoku University, Japan*; Naoki Miura, *Kochi University of Technology, Japan*; Motoaki Sugiura, Ryuta Kawashima, *Institute of Developmental Aging and Cancer, Japan.*

### Mental Models in Process Visualization - Could they Indicate the Effectiveness of an Operator's Training?

Karin Schweizer, *University of Mannheim, Germany*; Denise Gramß, Susi Mühlhausen, *Technical University of Brunswick, Germany*; Birgit Vogel-Heuser, *University of Kassel, Germany.*

### Spatial Tasks on a Large, High-Resolution Tiled Display: Females Mentally Rotate Large Objects Faster than Men.

Bernt Ivar Olsen, *University of Tromsø, Norway*; Bruno Laeng, *University of Oslo / University of Bergen, Norway*; Kari-Ann Kristiansen, *University of Tromsø, Norway*; Gunnar Hartvigsen, *University of Tromsø, Norway.*

### The Effect of Object Features on Multiple Object Tracking and Identification

Tianwei Liu, Wenfeng Chen, Yuming Xuan, Xiaolan Fu, *Chinese Academy of Sciences, P.R. China.*

### Harnessing the Power of Multiple Tools to Predict and Mitigate Mental Overload

Charneta Samms, *U.S. Army Research Laboratory, United States*; David Jones, Kelly Hale, *Design Interactive, Inc., United States*; Diane Mitchell, *U.S. Army Research Laboratory, United States.*

### Neurocognitive Workload Assessment Using the Virtual Reality Cognitive Performance Assessment Test

Thomas Parsons, Louise Cosand, Christopher Courtney, Arvind Iyer, Albert "Skip" Rizzo, *University of Southern California, United States.*

Engineering Psychology and Cognitive Ergonomics

Friday 13:30 - 15:30

**UAHCI**

**Design of Ambient Assisted Living Environments**

*Room: Pacific Salon One*

Chair(s): Harald Weber, *Institut für Technologie und Arbeit (ITA), Germany.*

**Towards a Framework for the Development of Adaptive Multimodal User Interfaces for Ambient Assisted Living Environments**

Marco Blumendorf, Sahin Albayrak, *Berlin University of Technology, Germany.*

**A Hybrid Approach for Recognizing ADLs and Care Activities using Inertial Sensors and RFID**

Albert Hein, Thomas Kirste, *University of Rostock, Germany.*

**Ambient Intelligence and Knowledge Processing in Distributed Autonomous AAL-Components**

Ralph Welge, Helmut Faasch, Eckhard Bollow, *Universität Lüneburg, Germany.*

**An Approach to and Evaluations of Assisted Living Systems using Ambient Intelligence for Emergency Monitoring and Prevention**

Thomas Kleinberger, Andreas Jedlitschka, Holger Storf, Silke Steinbach-Nordmann, *Fraunhofer, Germany*; Stephan Prueckner, *Westpfalz-Klinikum GmbH, Germany.*

**Configuration and Dynamic Adaptation of AAL Environments to Personal Requirements and Medical Conditions**

Reiner Wichert, *Fraunhofer, Germany.*

**A Modelling Framework for Ambient Assisted Living Validation**

Juan-Carlos Naranjo, Carlos Fernandez, Maria-Pilar Sala, *Universidad Politécnica de Valencia, Spain*; Michael Hellenschmidt, *Fraunhofer, Germany*; Franco Mercalli, *Centro di Cultura Scientifica Alessandro Volta, Italy.*

**Aging and Technology: Considering Experience in the Equation**

*Room: Pacific Salon Two*

Chair(s): Vicki Hanson, *Dundee University, United Kingdom.*

**Access Tool? Accelerating Treadmill? Technology and the Aging Population**

Soon Keong Anthony Chong, Clayton Lewis, Lise Menn, *University of Colorado at Boulder, United States.*

**Generations in the Workplace: An Exploratory Study with Administrative Assistants**

Lisa Vizer, *UMBC, United States*; Vicki Hanson, *Dundee University, United Kingdom.*

**Influences of Age and Experience on Web-Based Problem Solving Strategies**

Peter Fairweather, *IBM T.J. Watson Research Center, United States.*

**Older People and ICT: Towards Understanding Real-life Usability and Experiences Created in Everyday Interactions with Interactive Technologies**

Sergio Sayago, Josep Blat, *Universitat Pompeu Fabra, Spain.*

**Adaptative User Interfaces to Promote Independent Ageing**

Cecilia Vera-Muñoz, María de las Mercedes Fernández-Rodríguez, Patricia Abril-Jimenez, Maria Fernanda Cabrera-Umpierrez, Maria Teresa Arredondo, *Technical University of Madrid (UPM), Spain*; Sergio Guillen, *Universidad Politécnica de Valencia, Spain.*

**An Application for Active Elderly Follow-Up Based on DVB-T Platforms**

Maria Jesus Falagan, Juan-Luis Villalar, Maria Teresa Arredondo, *Technical University of Madrid (UPM), Spain.*

**Effects of Multimodal Feedback on the Usability of Mobile Diet Diary for Older Adults**

Miroslav Bojic, Olivier Blanson Henkemans, *Delft University of Technology, Netherlands*; Mark Neerincx, *TNO Human Factors / Delft University of Technology, Netherlands*; Charles Van der Mast, *Delft University of Technology, Netherlands*; Jasper Lindenberg, *TNO Defense, Security and Safety, Netherlands.*

**Designing and Developing Intelligent Interaction Environments**

*Room: Pacific Salon Three*

Chair(s): Yannis Georgalis, *Foundation for Research & Technology - Hellas (FORTH), Greece.*

**A Web-Based 3D System for Home Design**

Soon Keong Anthony Chong, Ji-Hyun Lee, Jieun Park, *Korea Advanced Institute of Science & Technology (KAIST), Korea.*

**Key Properties in the Development of Smart Spaces**

Sergey Balandin, Heikki Waris, *Nokia, Finland.*

**ActionSpaces: Device Independent Places of Thought, Memory and Evolution**

Rudolf Melcher, *University of Klagenfurt, Austria*; Martin Hitz, *Klagenfurt University, Austria*; Gerhard Leitner, *University of Klagenfurt, Austria.*

**Middleware for Ambient Intelligence Environments: Reviewing Requirements and Communication Technologies**

Yannis Georgalis, Dimitris Grammenos, Constantine Stephanidis, *Foundation for Research & Technology - Hellas (FORTH), Greece.*

**Colorimetric and Photometric Compensation for Optical See-through Displays**

Christian Weiland, Anne Braun, *Fraunhofer, Germany*; Wolfgang Heiden, *University of Applied Sciences Bonn-Rhein-Sieg, Germany.*

**3D Virtual Environments for the Rehabilitation of the Blind**

Julio Villane, Jaime Sanchez, *University of Chile, Chile.*

**Sympathetic Devices: Communication Technologies for Inclusion Across Housing Options**

Claudia Winegarden, Brian Jones, *Georgia Institute of Technology, United States.*

**VMR**

**Stereoscopic HMD and LCD Technology as a Human Interface**

*Room: Sunrise*

Chair(s): Masaru Miyao, *Nagoya University, Japan*; Sina Fateh, *NEUROPTICAL Labs, Inc., United States.*

**On a Qualitative Method to Evaluate Motion Sickness Induced by Stereoscopic Images on Liquid Crystal Displays**

Hiroki Takada, *Gifu University of Medical Science, Japan*; Kazuhiro Fujikake, *Institute for Science of Labour, Japan*; Masaru Miyao, *Nagoya University, Japan.*

**Comparison of Measurement of Accommodation Between LCD and CRT at the Stereoscopic Vision Gaze**

Masako Omori, *Kobe Women's University, Japan*; Satoshi Hasegawa, *Nagoya Bunri University, Japan*; Tomoyuki Watanabe, *Aichi Gakuin University, Japan*; Kazuhiro Fujikake, *Institute for Science of Labour, Japan*; Masaru Miyao, *Nagoya University, Japan.*

**Effect of a Stereoscopic Movie on the Correlation Between Head Acceleration and Body Sway**

Hiroki Takada, Tetsuya Yamamoto, *Gifu University of Medical Science, Japan*; Masaru Miyao, *Nagoya University, Japan*; Tatehiko Aoyama, *Gifu University of Medical Science, Japan*; Masashi Furuta, *Aichi University of Education, Japan*; Tomoki Shiozawa, *Aoyama Gakuin University, Japan.*

**Lens Accommodation to the Stereoscopic Vision on HMD**

Satoshi Hasegawa, *Nagoya Bunri University, Japan*; Masako Omori, *Kobe Women's University, Japan*; Tomoyuki Watanabe, *Aichi Gakuin University, Japan*; Kazuhiro Fujikake, *Institute for Science of Labour, Japan*; Masaru Miyao, *Nagoya University, Japan.*

**Rebalancing the Visual System of People with Amblyopia «Lazy Eye» by Using HMD and Image Enhancement**

Sina Fateh, *NEUROPTICAL Labs, Inc., United States*; Claude Speeg, *University of Strasbourg, France.*

**Evaluation of Body Sway and the Relevant Dynamics While Viewing a Three-dimensional Movie on a Head-mounted Display by Using Stabilograms**

Kazuhiro Fujikake, *Institute for Science of Labour, Japan*; Masaru Miyao, *Nagoya University, Japan*; Tomoyuki Watanabe, *Aichi Gakuin University, Japan*; Satoshi Hasegawa, *Nagoya Bunri University, Japan*; Masako Omori, *Kobe Women's University, Japan*; Hiroki Takada, *Gifu University of Medical Science, Japan.*

**Effect of an Eyesight Recovering Stereoscopic Movie System on Visual Acuity and Asthenopia**

Akihiro Sugiura, Tetsuya Yamamoto, Hiroki Takada, *Gifu University of Medical Science, Japan*; Masaru Miyao, *Nagoya University, Japan.*

# Parallel Sessions

Internationalization, Design and Global Development

## IDGD

### Addressing a Global Market

Room: Royal Palm Salon Six

Chair(s): Stephen Prior, Middlesex University, United Kingdom.

### The Effect of E-learning on Business Organizations: a UAE Case Study

Osama Alshara, Higher Colleges of Technology, United Arab Emirates; Mohamad Alsharo, Jordan University of Science and Technology, Jordan.

### Perceptions on Interaction Design in Malaysia

Idyawati Hussein, Esmadi Abu Seman, Universiti Malaysia Sabah, Malaysia; Murni Mahmud, International Islamic University Malaysia (IIUM), Malaysia.

### Cyber Society and Cooperative Cyber Defense

Peeter Lorents, Rain Ottis, Cooperative Cyber Defence Centre of Excellence, Estonia; Raul Rikk, General Staff of Estonian Defence Forces, Estonia.

### Testing of a Novel Web Browser Interface for the Chinese Market

Siu-Tsen Shen, National Formosa University, Taiwan; Stephen Prior, Middlesex University, United Kingdom; Kuen-Meau Chen, National United University, Taiwan.

Online Communities and Social Computing

## OCSC

### Social Behavior in On-line Communities - II

Room: Royal Palm Salon Five

Chair(s): Jill Jameson, University of Greenwich, United Kingdom.

### Propagation Modeling and Analysis of Incidental Topics in Blogosphere

Li Zhao, Ruixi Yuan, Xiaohong Guan, Mingyang Li, Tsinghua University, P.R. China.

### Metacommunication Patterns in Online Communities

Arto Lanamaki, Tero Päivärinta, University of Agder, Norway.

### A Study on the Interface for Viewing the Information Menu of a Town from Intersections Using a Digital Compass

Misa Tsuchihashi, Katsuhiko Ogawa, Keio University, Japan.

### Social Features in Online Communities for Healthcare Consumers – A Review

Annie Lau, Trevor Kwok, University of New South Wales, Australia.

### Who Are the Web Composers?

Evandro Miletto, Marcelo Pimenta, Aurelio Hoppe, Luciano Flores, UFRGS, Brazil.

### Dialogues of Locations: BlueSpot

András Kangyal, Guanxi Media, Hungary; László Laufer, Budapest University of Technology and Economics, Hungary.

### Improving Personal Tagging Consistency through Visualization of Tag Relevancy

Qin Gao, Yusen Dai, Kai Fu, Tsinghua University, P.R. China.

Augmented Cognition

## AC

### Neuroplastic Rehabilitation

Room: Royal Palm Salon Three

Chair(s): Joseph Cohn, DARPA/DSO, United States.

### Augmented Cognition Design Approaches for Treating Mild Traumatic Brain Injuries

Kelly Hale, Kay Stanney, David Jones, Design Interactive, Inc., United States.

### CI Therapy: A Method for Harnessing Neuroplastic Changes to Improve Rehabilitation after Damage to the Brain

Lynne Gauthier, Edward Taub, University of Alabama at Birmingham, United States.

### Development of Sensitive, Specific, and Deployable Methods for Detecting and Discriminating mTBI and PTSD

Robin Johnson, Djordje Popovic, Advanced Brain Monitoring, Inc., United States; Debbie Perlick, Mount Sinai School of Medicine, United States; Dennis Dyck, Washington State University, United States; Chris Berka, Advanced Brain Monitoring, Inc., United States.

### Augmented Cognition as Rehabilitation: Facilitating Neuroplasticity?

Michael Feuerstein, Gina Luff, Mark Peugeot, Miki Moskowitz, Briana Todd, USUHS, United States.

### Long Term Repair of Learning Disability through Short-term Reduction of CNS Inhibition

H. Craig Heller, Damien Colas, Normal Ruby, Fabian Fernandez, Bayarasaikhan Chuluun, Martina Blank, Craig Garner, Stanford University, United States.

### Augmented Cognition within Neuroergonomics

Room: Royal Palm Salon Four

Chair(s): Keryl Cosenzo, U.S. Army Research Laboratory, United States; Denise Nicholson, University of Central Florida, United States.

### Assessing Cognitive State with Multiple Physiological Measures: A Modular Approach

Lee Sciarini, Denise Nicholson, University of Central Florida, United States.

### Impact of Automation and Task Load on Unmanned System Operator's Eye Movement Patterns

Cali Fidopiastis, Julie Drexler, Daniel Barber, University of Central Florida, United States; Keryl Cosenzo, Michael Barnes, Jessie Chen, U.S. Army Research Laboratory, United States; Denise Nicholson, University of Central Florida, United States.

### The Effectiveness of Feedback Control in a HCI System Using Biological Features of Human Beings

Mariko Funada, Miki Shibukawa, Hakuoh University, Japan; Yoshihide Igarashi, Gunma University, Japan; Takashi Shimizu, Hakuoh University, Japan; Tadashi Funada, Rikkyo University, Japan; Satoki Ninomija, Aoyama Gakuin University, Japan.

### Embodying Meaning in Bio-Cognitive Aid Design

Daniel Garrison, Virginia Tech, United States; Victoria Garrison, Underwood-Memorial Hospital, United States.

### Considerations for Designing Response Quantification Procedures in Non-Traditional Psychophysiological Applications

Arvind Iyer, Louise Cosand, Christopher Courtney, Albert "Skip" Rizzo, Thomas Parsons, University of Southern California, United States.

Friday 13:30 - 15:30

**DHM**

**Human Modeling: New Trends**

*Room: Royal Palm Salon Two*  
Chair(s): Zhizhong Li, *Tsinghua University, P.R. China.*

**A Comparative Study for Selecting Initial Cluster Centers in 3D Anthropometric Data Clustering**

Jianwei Niu, *University of Science and Technology Beijing, P.R. China*; Zhizhong Li, *Tsinghua University, P.R. China*; Gavriel Salvendy, *Purdue University / Tsinghua University, United States.*

**Multi-Scale Human Modeling with Comparison Across Populations**

Fei Song, Zhizhong Li, Ting Li, *Tsinghua University, P.R. China.*

**A 3D Method for Fit Assessment of a Sizing System**

Jiang Wu, Zhizhong Li, *Tsinghua University, P.R. China*; Jianwei Niu, *University of Science and Technology Beijing, P.R. China.*

**Human Head 3D Dimensions Measurement for the Design of Helmets**

Fenfei Guo, *Beijing University of Aeronautics and Astronautics, P.R. China*; Lijing Wang, *Beihang University, P.R. China*; Dayong Dong, *Beijing University of Aeronautics and Astronautics, P.R. China.*

**Human Head Modeling and Personal Head Protective Equipment: A Literature Review**

Jingzhou (James) Yang, *Jichang Dai, Texas Tech University, United States*; Ziqing Zhuang, *National Institute for Occupational Safety and Health, United States.*

**Determining Cockpit Dimensions and Associative Dimensions between Components in Cockpit of Ultralight Plane for Taiwanese**

Dengchuan Cai, Lan-Ling Huang, Tesheng Liu, Manlai You, *National Yunlin University of Science & Technology, Taiwan.*

**HCD**

**Persona and Scenario-based Design in Asia**

*Room: Royal Palm Salon One*  
Chair(s): Kentaro Go, *University of Yamanashi, Japan.*

**Possibility of Participatory Design**

Makoto Okamoto, *Future University-Hakodate, Japan.*

**What Properties Make Scenarios Useful in Design for Usability?**

Kentaro Go, *University of Yamanashi, Japan.*

**Full Description Persona vs. Trait List Persona in the Persona-based SHEM Approach**

Masaaki Kurosu, *The Open University of Japan, Japan.*

**Facilitating Idea Generation using Personas**

Der-Jang Yu, *National Chaio Tung University, Taiwan*; Wen-Chi Lin, *ScenarioLab, Taiwan.*

**Structured Scenario-based Design Method**

Koji Yanagida, *Kurashiki University of Science and The Arts, Japan*; Yoshihiro Ueda, *Fujitsu Design, Ltd., Japan*; Kentaro Go, *University of Yamanashi, Japan*; Katsumi Takahashi, *Holon Create Inc., Japan*; Seiji Hayakawa, *Ricoh Company, Ltd., Japan*; Kazuhiko Yamazaki, *Chiba Institute of Technology, Japan.*

**Practice of Promoting HCD Education by a Consumer-Electronics Manufacturer**

Jun Ito, Akiyoshi Ikegami, Tomoshi Hirayama, *Sony Corporation, Japan.*

**Developing a Scenario Database for Product Innovation**

Shang Hwa Hsu, Jen Wei Chang, *National Chiao Tung University, Taiwan.*

**HIMI**

**Learning Environments**

*Room: Towne*  
Chair(s): George Margetis, *Foundation for Research & Technology - Hellas (FORTH), Greece.*

**An Empirical Investigation on the Effectiveness of Virtual Learning Environment in Supporting Collaborative Learning: A System Design Perspective**

Na Liu, Yingqin Zhong, John Lim, *National University of Singapore, Singapore.*

**The Design and Development of an Adaptive Web-based Learning System**

Chian Wang, *National Changhua University of Education, Taiwan.*

**Personalization for Specific Users: Designing Decision Support Systems to Support Stimulating Learning Environments**

Laura Maruster, Niels Faber, Rob Van Haren, *University of Groningen, Netherlands.*

**Promoting a Central Learning Management System by Encouraging its Use for Other Purposes than Teaching**

Franz Reichl, Andreas Hruska, *Vienna University of Technology, Austria.*

**Framework for Supporting Decision Making in Learning Management Systems Selection**

Yuki TERAWAKI, *The University of Tokyo, Japan.*

**Development of an Annotation-based Classroom Activities Support Environment using Digital Appliance, Mobile Device and PC**

Yoshiaki Hada, Masanori Shinohara, *National Institute of Multimedia Education, Japan.*

**Designing a Peer Reviewing Tool on Lecture Video with Handwritten Annotation**

Hironori Egi, Shotaro Hourii, Yukari Kato, Tatsuya Terada, Wataru Tsukahara, Masaki Nakagawa, *Tokyo University of Agriculture and Technology, Japan.*

**Information Management in Industrial and Military Applications**

*Room: Sunset*  
Chair(s): David Jacobson, *Dublin City University, Ireland.*

**Human-System Interface (HSI) Challenges in Nuclear Power Plant Control Rooms**

Jo-Ling Chang, Huafei Liao, *Bechtel Power, United States*; Liang Zeng, *Purdue University, United States.*

**Practical Use of Task Models for Building and Modeling Operations Chart in the Industrial Production**

Tomasz Mistrzyk, *OFFIS e.V., Germany*; Alexander Redenius, *Salzgitter Mannesmann Forschung, GmbH, Germany.*

**Computer-Aided Collaborative Work into War Rooms : A New Approach of Collaboration**

Jeremy Ringard, Samuel Degrande, *Computer Science Laboratory of Lille (LIFL), France*; Stephane Louis Dit Picard, *Orange Labs, France*; Christophe Chaillou, *Computer Science Laboratory of Lille (LIFL), France.*

**HILAS: Human Interaction in the Lifecycle of Aviation Systems – Collaboration, Innovation and Learning**

David Jacobson, *Dublin City University, Ireland*; Nick McDonald, *Trinity College Dublin, Ireland*; Bernard Musyck, *Frederick University, Cyprus.*

**Distribution of Human-Machine Interfaces in System-of-Systems Engineering**

Sandro Leuchter, Dirk Mühlenberg, *Fraunhofer, Germany.*

**Unique Reporting Form: Flight Crew Auditing of Everyday Performance in an Airline Safety Management System**

Maria Chiara Leva, Alison Kay, Joan Cahill, *Trinity College Dublin, Ireland*; Gabriel Losa, *Iberia Airlines, Spain*; Sharon Keating, Diogo Serradas, *Aircraft Management Technologies, Ireland*; Nick McDonald, *Trinity College Dublin, Ireland.*

**Tactical Access to Complex Technology through Interactive Communication (TACTIC)**

Alexei Samoylov, Christopher Franklin, Susan Harkness Regli, Polly Tremoulet, Kathleen Stibler, Peter Gerken, *Lockheed Martin, United States.*

Vertical text: Digital Human Modeling

Vertical text: Human Centered Design

Vertical text: Human Interface and the Management of Information

Vertical text: Friday 16:00 - 18:00

# Parallel Sessions

## HCI

Human-Computer Interaction

<p><b>Ambient Interfaces</b>  <i>Room: Hampton</i>            Chair(s): Kiyoshi Kiyokawa, <i>Osaka University, Japan.</i></p>	<p><b>Collaborative Development and new Devices for Human Computer Interaction</b>  <i>Room: Sheffield</i>            Chair(s): Hans-Jörg Bullinger, <i>Fraunhofer, Germany.</i></p>	<p><b>Relationality Design</b>  <i>Room: Garden Salon One</i>            Chair(s): Katsunori Shimohara, <i>Doshisha University, Japan.</i></p>	<p><b>Interaction Design</b>  <i>Room: Garden Salon Two</i>            Chair(s): Birgit Bomsdorf, <i>Fulda University of Applied Sciences, Germany.</i></p>
<p><b>Constructive Adaptive User Interfaces Based on Brain Waves</b>            Masayuki Numao, Takayuki Nishikawa, Toshihiro Sugimoto, Satoshi Kurihara, Roberto Legaspi, <i>Osaka University, Japan.</i></p> <p><b>User Profiling for Web Search Based on Biological Fluctuation</b>            Yuki Arase, Takahiro Hara, Shojiro Nishio, <i>Osaka University, Japan.</i></p> <p><b>A Context-Aware AR Navigation System Using Wearable Sensors</b>            Daisuke Takada, <i>Osaka University, Japan</i>; Takefumi Ogawa, <i>The University of Tokyo, Japan</i>; Kiyoshi Kiyokawa, Haruo Takemura, <i>Osaka University, Japan.</i></p> <p><b>Context-Aware Cognitive Agent Architecture for Ambient User Interfaces</b>            Youngho Lee, Choonsung Shin, Woontack Woo, <i>Gwangju Institute of Science and Technology (GIST), Korea.</i></p> <p><b>The Anticipation of Human Behavior Using «Parasitic Humanoid»</b>            Hiroyuki Iizuka, Hideyuki Ando, Taro Maeda, <i>Osaka University, Japan.</i></p> <p><b>Multi-Modal Interface in Multi-Display Environment for Multi-Users</b>            Yoshifumi Kitamura, Satoshi Sakurai, Tokuo Yamaguchi, Ryo Fukazawa, Yuichi Itoh, Fumio Kishino, <i>Osaka University, Japan.</i></p> <p><b>Towards Ambient Augmented Reality with Tangible Interfaces</b>            Mark Billinghurst, <i>University of Canterbury, New Zealand</i>; Raphael Grasset, Hartmut Seichter, Andreas Duenser, <i>Human Interface Technology Laboratory (HIT Lab NZ), New Zealand.</i></p>	<p><b>Ultra Compact Laser Based Projectors and Imagers</b>            Harald Schenk, Thilo Sandner, Christian Drabe, Michael Scholles, Klaus Frommhagen, Christian Gerwig, Hubert Lakner, <i>Fraunhofer, Germany.</i></p> <p><b>Touchless Interaction - Novel Chances and Challenges</b>            René De la Barré, Paul Chojecki, Ulrich Leiner, Lothar Mühlbach, Detlef Ruschin, <i>Fraunhofer, Germany.</i></p> <p><b>Open Collaborative Development: Trends, Tools, and Tactics</b>            Kathrin Möslein, Angelika Cosima Bullinger, Jens Söldner, <i>Friedrich-Alexander-University Erlangen-Nuremberg, Germany.</i></p> <p><b>Robotic Home Assistant Care-O-bot® 3 - Product Vision and Innovation Platform</b>            Birgit Graf, Christopher Parlitz, Martin Hägele, <i>Fraunhofer, Germany.</i></p> <p><b>Visualization of Software and Systems as Support Mechanism for Integrated Software Project Control</b>            Peter Liggesmeyer, <i>Fraunhofer / TU Kaiserslautern, Germany</i>; Jens Heidrich, Jürgen Münch, <i>Fraunhofer, Germany</i>; Robert Kalcklösch, <i>TU Kaiserslautern, Germany</i>; Henning Barthel, <i>Fraunhofer, Germany</i>; Dirk Zeckzer, <i>TU Kaiserslautern, Germany.</i></p> <p><b>New Interaction Concepts by Using the Wii Remote</b>            Michael Schreiber, Margeritta Von Wilamowitz-Moellendorff, Ralph Bruder, <i>Darmstadt University of Technology, Germany.</i></p> <p><b>Collaborative Development and New Devices for Human Computer Interaction</b>            Hans-Jörg Bullinger, Gunnar Brink, <i>Fraunhofer, Germany.</i></p>	<p><b>Relationality Design Toward Enriched Communications</b>            Yukiko Nakano, Masao Morizane, Ivan Tanev, Katsunori Shimohara, <i>Doshisha University, Japan.</i></p> <p><b>Non-verbal Communication System Using Pictograms</b>            Makiko Okita, Yuki Nakaura, <i>Hokkaido University of Education, Japan</i>; Hidetsugu Suto, <i>Muroran Institute of Technology, Japan.</i></p> <p><b>Influences of Telops on Television Audiences' Interpretation</b>            Hidetsugu Suto, <i>Muroran Institute of Technology, Japan</i>; Hiroshi Kawakami, Osamu Katai, <i>Kyoto University, Japan.</i></p> <p><b>Insight into Kansei Color Combinations in Interactive User Interface Design</b>            KGD Tharangie, Shuichi Matsuzaki, Ashu Marasinghe, Koichi Yamada, <i>Nagaoka University of Technology, Japan.</i></p> <p><b>Development of Estimation System for Concentrate Situation Using Acceleration Sensor</b>            Masashi Okubo, Aya Fujimura, <i>Doshisha University, Japan.</i></p> <p><b>Effect of Body Movement on Music Expressivity in Jazz Performances</b>            Mamiko Sakata, Sayaka Wakamiya, <i>Doshisha University, Japan</i>; Naoki Odaka, <i>Kobe University, Japan</i>; Kozaburo Hachimura, <i>Ritsumeikan University, Japan.</i></p> <p><b>Hypertext Model to Represent Similarity Details Applied to Musical Instrument Performance</b>            Tetsuya Maeshiro, <i>University of Tsukuba, Japan</i>; Midori Maeshiro, <i>Federal University of Rio de Janeiro, Brazil</i>; Katsunori Shimohara, <i>Doshisha University, Japan</i>; Shin-ichi Nakayama, <i>University of Tsukuba, Japan.</i></p>	<p><b>RUCID: Rapid Usable Consistent Interaction Design - Patterns-Based Mobile Phone UI Design Library, Process &amp; Tool</b>            Avinash Raj, <i>CIBC, Canada</i>; Vihari Komaragiri, <i>Google, Inc., India.</i></p> <p><b>A New Approach to Design an Interactive System for Molecular Analysis</b>            Mouna Essabbah, Samir Otmane, <i>University of Evry, France</i>; Joan Herisson, <i>Genopole, France</i>; Malik Mallem, <i>University of Evry, France.</i></p> <p><b>Hierarchical Structure: A Step for Jointly Designing Interactive Software Dialog and Task Model</b>            Sybille Caffiau, <i>LISI-ENSMA, France</i>; Patrick Girard, <i>University of Poitiers, France</i>; Laurent Guittet, <i>LISI-ENSMA, France</i>; Dominique Scapin, <i>INRIA, France.</i></p> <p><b>A Position Paper on 'Living Laboratories': Rethinking Ecological Designs and Experimentation in Human-Computer Interaction</b>            Ed Chi, <i>Palo Alto Research Center (PARC), United States.</i></p> <p><b>Reflections on the Interdisciplinary Collaborative Design of Mapping the Universe</b>            Chaomei Chen, Jian Zhang, Michael Vogeley, <i>Drexel University, United States.</i></p>

Friday 16:00 - 18:00

<p><b>Design Methods and Tools</b>  <i>Room: Windsor</i>                  Chair(s): Bertrand David, <i>Ecole Centrale de Lyon, France.</i></p>
<p><b>Augmented Collaborative Card-based Creative Activity with Digital Pens</b>                  Motoki Miura, Taro Sugihara, Susumu Kunifuji, <i>Japan Advanced Institute of Science &amp; Technology, Japan.</i></p> <p><b>An Integration of Task and Use Case Meta-models</b>                  Rémi Bastide, <i>Université de Toulouse, France.</i></p> <p><b>CAD and Communicability: A System that Improves the Human-Computer Interaction</b>                  Francisco Cipolla-Ficarra, <i>Alaipo &amp; Ainci, Italy</i>; Rocio Rodríguez, <i>Universidad Nacional de La Matanza, Argentina.</i></p> <p><b>UI/SK: Supporting Model-Driven and Sketch-Driven Paperless Prototyping</b>                  Vinicius Segura, Simone Barbosa, <i>Catholic University of Rio de Janeiro (PUC-Rio), Brazil.</i></p> <p><b>Beyond the User Interface: Towards User-Centred Design of Online Services</b>                  Marcin Sikorski, <i>Polish-Japanese Institute of Information Technology, Poland.</i></p> <p><b>Evaluating Usability-Supporting Architecture Patterns: Reactions From Usability Professionals</b>                  Edgardo Luzcando, Davide Bolchini, Anthony Faiola, <i>Indiana University - Purdue University Indianapolis, United States.</i></p>

<p><b>UAHCI</b></p> <p><b>Cognitive Science meets Computer Science</b>  <i>Room: Pacific Salon One</i>                  Chair(s): Ray Adams, Nigel Foreman, <i>Middlesex University, United Kingdom.</i></p>
<p><b>A Modern Integration of Cognitive and Computer Sciences</b>                  G. Susanne Bahr, Matthew Bell, Jason Metz, Sarah Sowle, Elizabeth Beasley, <i>Florida Institute of Technology (FIT), United States.</i></p> <p><b>Cognition, Age, and Web Browsing</b>                  Vicki Hanson, <i>Dundee University, United Kingdom.</i></p> <p><b>Modeling and Simulation of Human Interaction based on Mutual Beliefs</b>                  Taro Kanno, Atsushi Watanabe, Kazuo Furuta, <i>The University of Tokyo, Japan.</i></p> <p><b>The Influence of Cognitive and Personality Characteristics on User Navigation: An Empirical Study</b>                  Nikola Marangunic, Andrina Granic, <i>University of Split, Croatia.</i></p> <p><b>Setting Up a Cross-Disciplinary Design Space for E-learning Application Development</b>                  Christian Stary, <i>University of Linz, Austria.</i></p> <p><b>Cognitive Impairments, HCI and Daily Living</b>                  Simeon Keates, <i>IT University of Copenhagen, Denmark</i>; James Kozlowski, <i>IBM T.J. Watson Research Center, United States</i>; Philip Varker, <i>IBM Human Ability &amp; Accessibility Center, United States.</i></p> <p><b>Intelligent Mobile Interaction: A Learning System for Mentally Disabled People (IMLIS)</b>                  Heidi Schelhowe, Saeed Zare, <i>TZI - University of Bremen, Germany.</i></p>

<p><b>Designing for Mobile Computing</b>  <i>Room: Pacific Salon Two</i>                  Chair(s): Stephen Kimani, «Sapienza» <i>University of Rome, Italy.</i></p>
<p><b>Location-Triggered Code Execution - Dismissing Displays and Keypads for Mobile Interaction</b>                  Wolfgang Narzt, Heinrich Schmitzberger, <i>University of Linz, Austria.</i></p> <p><b>The WORKPAD User Interface and Methodology: Developing Smart and Effective Mobile Applications for Emergency Operators</b>                  Shah Rukh Humayoun, Tiziana Catarci, Massimiliano De Leoni, Andrea Marrella, Massimo Mecella, «Sapienza» <i>University of Rome, Italy</i>; Manfred Bortenschlager, Renate Steinmann, <i>Salzburg Research, Austria.</i></p> <p><b>Kinetic User Interface: Interaction through Motion for Pervasive Computing Systems</b>                  Pascal Bruegger, Beat Hirsbrunner, <i>University of Fribourg, Switzerland.</i></p> <p><b>Robust Pose Estimation for Outdoor Mixed Reality with Sensor Fusion</b>                  ZhiYing Zhou, Jayashree Karlekar, Daniel Hii, Miriam Schneider, Weiquan Lu, Stephen Wittkopf, <i>National University of Singapore, Singapore.</i></p> <p><b>Mobile Interaction: Automatically Adapting Audio Output to Users and Contexts on Communication and Media Control Scenarios</b>                  Tiago Reis, Luís Carriço, Carlos Duarte, <i>University of Lisbon, Portugal.</i></p> <p><b>Users Can do Better with PDAs than Paper: A Usability Study of PDA-Based vs Paper-Based Nursing Documentation Systems</b>                  Nestor Rodriguez, Jose Borges, Gilberto Crespo, Carlos Perez, Carlos Martinez, Celia Colon-Rivera, Aixa Ardin, <i>University of Puerto Rico - Mayaguez, Puerto Rico.</i></p>

<p><b>Natural Interaction in Smart Environments</b>  <i>Room: Pacific Salon Three</i>                  Chair(s): Constantine Stephanidis, Dimitris Grammenos, <i>Foundation for Research &amp; Technology - Hellas (FORTH), Greece.</i></p>
<p><b>Augmenting Sticky Notes as an I/O Interface</b>                  Pranav Mistry, Pattie Maes, <i>Massachusetts Institute of Technology (MIT), United States.</i></p> <p><b>Speech Input from Older Users in Smart Environments: Challenges and Perspectives</b>                  Ravi Chander Vipperla, Maria Wolters, Kallirroi Georgila, Steve Renals, <i>The University of Edinburgh, United Kingdom.</i></p> <p><b>Indoor Domain Model for Dialogue Systems</b>                  Porfirio Filipe, <i>Instituto Superior de Engenharia de Lisboa, Portugal</i>; Nuno Mamede, <i>Instituto de Engenharia de Sistemas e Computadores, Portugal.</i></p> <p><b>BC(eye) – Combining Eye-Gaze Input with Brain-Computer Interaction</b>                  Roman Vilimek, <i>Siemens AG, Germany</i>; Thorsten Zander, <i>Berlin University of Technology, Germany.</i></p> <p><b>Natural Language Interface for Smart Homes</b>                  Maria de las Mercedes Fernández-Rodríguez, Juan Bautista Montalvá Colomer, Maria Fernanda Cabrera-Umpierrez, Maria Teresa Arredondo, <i>Technical University of Madrid (UPM), Spain.</i></p> <p><b>Technology Support for Analyzing User Interactions to Create User-Centred Interactions</b>                  Dirk Burkhardt, Kawa Nazemi, Nadeem Bhatti, Christoph Hornung, <i>Fraunhofer, Germany.</i></p> <p><b>Transmission of Acoustic Information of Percussion Instruments through Tactile Sensation Using Air-Jet Stimulation for Hearing Impaired Person</b>                  Tomokazu Furuya, Yuki Yanagisawa, Takahiro Tamesue, Kazunori Itoh, <i>Shinshu University, Japan.</i></p>

Universal Access in Human-Computer Interaction

Friday 16:00 - 18:00

# Parallel Sessions

## UAHCI

### Multimodality and Interaction in Universal Access

Room: Royal Palm Salon One

Chair(s): Kristiina Jokinen, University of Helsinki, Finland.

### Towards a Modeling Language for Designing Auditory Interfaces

Mexhid Ferati, Davide Bolchini, Steve Mannheimer, Indiana University - Purdue University Indianapolis, United States.

### Educational Sound Symbols for the Visually Impaired

Steve Mannheimer, Mexhid Ferati, Davide Bolchini, Mathew Palakal, Indiana University - Purdue University Indianapolis, United States.

### A Multimodal Board Game System Interface using Finger Input for Visually Impaired Computer Users

Yusuke Hamaguchi, Daisuke Nagasaka, Takahiro Tamesue, Kazunori Itoh, Shinshu University, Japan; Michio Shimizu, Nagano-ken College, Japan; Masahiko Sugimoto, Takushoku University, Japan; Masami Hashimoto, Mizue Kayama, Shinshu University, Japan.

### When you Can't Read it, Listen to it! An Audio-Visual Interface for Book Reading

Carlos Duarte, Luis Carriço, University of Lisbon, Portugal.

### Movement and Recovery Analysis of a Mouse-Replacement Interface for Users with Severe Disabilities

Caitlin Connor, Emily Yu, John Magee, Esra Cansizoglu, Samuel Epstein, Margrit Betke, Boston University, United States.

### Scanning-Based Human-Computer Interaction Using Intentional Muscle Contractions

Torsten Felzer, Rainer Nordmann, Stephan Rinderknecht, Darmstadt University of Technology, Germany.

### Interactive System to Assist Rehabilitation of Children

Shuto Murai, Kenta Sugai, Michiko Ohkura, Shibaura Institute of Technology, Japan; Mizuma Masazumi, Amimoto Satuki, Shouwa University Rehabilitation Hospital, Japan.

## VMR

### Novel Virtual and Mixed Reality Environments

Room: Crescent

Chair(s): Masako Omori, Kobe Women's University, Japan.

### Robust Hybrid Tracking with Life-size Avatar in Mixed Reality Environment

Cong Thien Qui Tran, Shang Ping Lee, Russell Pensyl, Daniel Jernigan, Nanyang Technological University, Singapore.

### Acquiring A Physical World And Serving Its Mirror World Simultaneously

Seungpyo Hong, Jong-gil Ahn, Heedong Ko, Jinwook Kim, Korea Institute of Science and Technology (KIST), Korea.

### Multiuser Collaborative Exploration of Immersive Photorealistic Virtual Environments in Public Spaces

Scott Robertson, Brian Jones, Tiffany O'Quinn, Peter Presti, Jeff Wilson, Maribeth Gandy, Georgia Institute of Technology, United States.

### The Design of a Virtual Trailblazing Tool

Daniel Iaboni, Carolyn MacGregor, University of Waterloo, Canada.

### Development of 3d Avatars for Professional Education

Miglena Dontschewa, Andreas Kuenz, Sabahat Kovanci, Vorarlberg University of Applied Sciences, Austria.

### Spatial Navigation in a Virtual Multilevel Building: The Role of Exocentric View in Acquiring Survey Knowledge

Zhiqiang Luo, Nanyang Technological University, Singapore; Henry Been-Lirn Duh, National University of Singapore, Singapore; I-Ming Chen, Nanyang Technological University, Singapore; Wenshu Luo, National Institute of Education, Singapore.

Virtual and Mixed Reality

## OCSC

### Communication and Collaboration Enhancement Systems toward Human Symbiosis

Room: Sunrise

Chair(s): Michiya Yamamoto, Okayama Prefectural University, Japan.

### Attribution of Identity in Autonomous Action of Remotely Operated Robot

Yugo Takeuchi, Hikaru Nakagami, Shizuoka University, Japan.

### Supporting Acceptable Dialogue Start based on User Uninterruptibility Estimation for Avatar-Mediated Multi-Tasking Online Communication

Takahiro Tanaka, Kyohei Matsumura, Kinya Fujita, Tokyo University of Agriculture and Technology, Japan.

### Web Interface for Designing and Sharing Sound Space

Seiya Matsuda, Shingo Ikeda, Tomohito Yamamoto, Kanazawa Institute of Technology, Japan.

### Ghatcha: GHOST Avatar on a Telework CHAIR

Yutaka Ishii, Kobe University, Japan; Kouzi Osaki, Tomio Watanabe, Okayama Prefectural University, Japan.

### Personalized and Deformed Avatars for Realizing Avatar-Mediated Real Person-to-Person Communication

Masayuki Heike, Kinya Fujita, Takahiro Tanaka, Tokyo University of Agriculture and Technology, Japan.

### A Discussion System for Knowledge Sharing and Collaborative Analysis of Incidents in Nuclear Power Plants

Saizo Aoyagi, Kyoto University, Japan; Hidenori Fujino, Safety Research Institute, West Japan Railway Company, Japan; Hirotake Ishii, Hiroshi Shimoda, Kyoto University, Japan; Hiroshi Sakuda, Institute of Nuclear Safety System, Inc., Japan; Hidekazu Yoshikawa, Symbio Community Forum, Japan; Toshio Sugiman, Kyoto University, Japan.

Online Communities and Social Computing

## AC

### Neurophysiological Measures and Sensing Technologies

Room: Royal Palm Salon Five

Chair(s): Roy Stripling, Office of Naval Research, United States.

### Neurophysiological Measures of Brain Activity: Going from the Scalp to the Brain

Phan Luu, Catherine Poulsen, Electrical Geodesics, Inc., United States; Don Tucker, Electrical Geodesics, Inc. / University of Oregon, United States.

### Applying Real Time Physiological Measures of Cognitive Load to Improve Training

Joseph Coyne, Naval Research Laboratory, United States; Carryl Baldwin, George Mason University, United States; Anna Cole, Strategic Analysis Incorporated, United States; Ciara Sibley, Daniel Roberts, George Mason University, United States.

### Translating Learning Theories into Physiological Hypotheses

Jennifer Vogel-Walcutt, Denise Nicholson, Clint Bowers, University of Central Florida, United States.

### The Quality of Training Effectiveness Assessment (QTEA) Tool Applied to the Naval Aviation Training Context

Tom Schnell, University of Iowa, United States; Rich Cornwall, Alion Science and Technology, United States; Melissa Walwanis, Naval Air Warfare Center, Training Systems Division, United States; Jeff Grubb, Naval Aerospace Medical Institute, United States.

### Neuro-NIRS: Analysis of Neural Activities using NIRS

Hiroshi Tamura, Tamura Institute for Human Interface, Japan; Miki Fuchigami, Akira Okada, Osaka City University, Japan.

Augmented Cognition

Friday 16:00 - 18:00

**AugCog for Training and Education: Adaptive Instructional Strategies and Mitigation Techniques**  
 Room: Royal Palm Salon Six  
 Chair(s): Amy Bolton, Office of Naval Research, United States.

**Perceptually-informed Virtual Environment (Perceive)**  
 Anna Skinner, Jack Vice, Corinna Lathan, AnthroTronix, Inc., United States; Cali Fidopiastis, University of Central Florida, United States; Chris Berka, Advanced Brain Monitoring, Inc., United States; Marc Sebrechts, The Catholic University of America, United States.

**«What Was he thinking?»: Using EEG Data to Facilitate the Interpretation of Performance Patterns**  
 Gwendolyn Campbell, Christine Belz, Naval Air Warfare Center, Training Systems Division, United States; Phan Luu, Electrical Geodesics, Inc., United States.

**Characterizing the Psychophysiological Profile of Expert and Novice Marksmen**  
 Nicholas Pojman, Adrienne Behneman, Natalie Kintz, Robin Johnson, Advanced Brain Monitoring, Inc., United States; Gregory Chung, Sam Nagashima, Paul Espinosa, UCLA, United States; Chris Berka, Advanced Brain Monitoring, Inc., United States.

**Enhancing Text-Based Analysis Using Neurophysiological Measures**  
 Adrienne Behneman, Natalie Kintz, Robin Johnson, Chris Berka, Advanced Brain Monitoring, Inc., United States; Kelly Hale, Sven Fuchs, Par Axelsson, Angela Baskin, Design Interactive, Inc., United States.

**A Phased Approach to Introducing Augmented Technologies and Mitigations into a Flight Safety Training Device**  
 Jeff Grubb, Naval Aerospace Medical Institute, United States; Melissa Walwanis, Naval Air Warfare Center, Training Systems Division, United States; Tom Schnell, University of Iowa, United States; Mike Prevost, Naval Air Systems Command, United States.

**Benefit from an Active Exploration on the Transfer of Spatial Knowledge: Impact of Graphic Richness**  
 Grégory Wallet, Hélène Sauzéon, Prashant Arvind Pala, Bernard N'Kaoua, Université Victor Segalen Bordeaux 2, France.

**Affective Computer-Generated Stimulus Exposure: Psychophysiological Support for Increased Elicitation of Negative Emotions in High and Low Fear Subjects**  
 Christopher Courtney, Michael Dawson, University of Southern California, United States; Anne Schell, Occidental College, United States; Thomas Parsons, University of Southern California, United States.

**DHM**  
**Shape Representation and Analysis**  
 Room: Royal Palm Salon Four  
 Chair(s): Afzal Godil, National Institute of Standards and Technology (NIST), United States.

**Using 3D Head and Respirator Shapes to Analyze Respirator Fit**  
 Kathryn Butler, National Institute of Standards and Technology (NIST), United States.

**Facial Shape Analysis and Sizing System**  
 Afzal Godil, National Institute of Standards and Technology (NIST), United States.

**Facial Shape Variation of U.S. Respirator Users**  
 Ziqing Zhuang, National Institute for Occupational Safety and Health, United States; Dennis Slice, Florida State University, United States; Stacey Benson, EG&G Technical Services Inc., United States; Douglas Landsittel, Dennis Viscusi, National Institute for Occupational Safety and Health, United States.

**Static and Dynamic Human Shape Modeling**  
 Zhiqing Cheng, Infoscitex Corporation, United States; Kathleen Robinette, Air Force Research Laboratory, United States.

**Auto-calibration of Laser 3D and Color Digitization System**  
 Xiaojie Li, Baozhen Ge, Dan Zhao, Qing-Guo Tian, Tianjin University, P.R. China; David Young, Hong Kong University of Science & Technology, Hong Kong.

**Database-driven Grasp Synthesis and Ergonomic Assessment for Handheld Product Design**  
 Keisuke Kawaguchi, Yui Endo, Satoshi Kanai, Hokkaido University, Japan.

**Comparisons of 3D Shape Clustering with Different Face Area Definitions**  
 Jianwei Niu, University of Science and Technology Beijing, P.R. China; Zhizhong Li, Song Xu, Tsinghua University, P.R. China.

**HCD**  
**Usability Testing**  
 Room: Royal Palm Salon Two  
 Chair(s): Nigel Bevan, Professional Usability Services, United Kingdom.

**Using Google Analytics to Evaluate the Usability of E-commerce Sites**  
 Layla Hasan, Anne Morris, Steve Proberts, Loughborough University, United Kingdom.

**Defining expected Behavior for Usability Testing**  
 Stefan Propp, Peter Forbrig, University of Rostock, Germany.

**Investigation of Web Usability based on the Dialogue Principles**  
 Masahiro Watanabe, Shunichi Yonemura, Yoko Asano, Nippon Telegraph and Telephone Corporation, Japan.

**Towards Fine-Grained Usability Testing: New Methodological Directions with Conversation Analysis**  
 Marko Nieminen, Helsinki University of Technology, Finland; Sari Karjalainen, University of Helsinki, Finland; Sirpa Riithiaho, Petri Mannonen, Helsinki University of Technology, Finland.

**Considering User Knowledge in the Evaluation of Training System Usability**  
 Clint Bowers, Jan Canon-Bowers, University of Central Florida, United States; Talib Hussein, BBN, United States.

**Eye Tracking Method to Compare the Usability of University Web Sites: A Case Study**  
 Oya Cinar, Baskent University, Turkey.

**Usability Evaluation of Mp3/CD Players: A Multi-Criteria Decision Making Approach**  
 Ergun Eraslan, Baskent University, Turkey.

**Human Needs in Novel Interaction Environments**  
 Room: Royal Palm Salon Three  
 Chair(s): Giuseppe Andreoni, Politecnico di Milano, Italy.

**Designing a Lighting with Pleasure**  
 Tyan-Yu Wu, Chang Gung University, Taiwan; Wen-chih Chang, National Taiwan University of Science & Technology, Taiwan; Yuan-Hao Hsu, Chang Gung University, Taiwan.

**Perceived Usefulness and Perceived Ease-of-Use of Ambient Intelligence Applications in Office Environments**  
 Carsten Röcker, RWTH Aachen University, Germany.

**Proactive Ergonomics in Refrigerator Concept Development**  
 Maximiliano Romero, Fiammetta Costa, Giuseppe Andreoni, Marco Mazzola, Politecnico di Milano, Italy; Juan Vargas, Luigi Conenna, Indesit, Italy.

**Working in Multi-locational Office – How Do Collaborative Working Environments Support?**  
 Matti Vartiainen, Helsinki University of Technology, Finland.

**Human Centered Design of Mobile Machines by a Virtual Environment**  
 Hassan Yousefi, Amir Mohssen Soleimani, Heikki Handroos, Lappeenranta University of Technology, Finland.

**User Research and User Centered Design; Designing, Developing, and Commercializing Widget Service on Mobile Handset**  
 Sung Moo Hong, Korea Telecom Freetel (KTF), Korea.

**A Study of Design that Understands the Influences on the Changes of Information Processing Ability of Users**  
 Ji Hyun Park, The University of Texas at Austin, United States.

Digital Human Modeling

Human Centered Design

Friday 16:00 - 18:00

**Note:** The number of the poster board is indicated on the left.

**001. Enhanced Haptic Interaction in Medical Applications by Means of Color Based Deformability Map**

Andrea Abate, Antonio Rosario Di Martino, Stefano Ricciardi, *University of Salerno, Italy.*

**002. Online Communities and Usability: an Evaluation of Orkut**

Alessandra Aguiar, Claudia MontAlvao, *Catholic University of Rio de Janeiro (PUC-Rio), Brazil.*

**003. CogGauge: A Cognitive Assessment Tool**

Ali Ahmad, Kelly Hale, Adams Greenwood-Ericksen, Angela Baskin, *Design Interactive, Inc., United States.*

**004. Effect of Arabic Font Types Used in Wimp Interfaces on Performance and Satisfaction.**

Ahamed Altaboli, Hala Shirmaddo, Khaled El-Hashmi, Mohammad Mahmud, Omelsaad Abdrlasol, *University of Garyounis, Libya.*

**005. Tangible Interaction for Wedding Reception: Conversion from Invitation Letter into Gratitude Message**

Tomohiro Amemiya, *Nippon Telegraph and Telephone Corporation, Japan;* Yuka Amemiya, *freelance, Japan.*

**006. e-Workbench: A Model of Knowledge-Oriented Interaction for e-Collaboration**

Obinna Anya, Hissam Tawfik, Atulya Nagar, *Liverpool Hope University, United Kingdom;* Saad Amin, *British University in Dubai, United Arab Emirates.*

**007. Global Ethnography for intercultural products: Dishwashers experience.**

Caroline Assis, Maximiliano Romero, Fiammetta Costa, Giuseppe Andreoni, *Politecnico di Milano, Italy.*

**008. Tailoring a Common Interface Framework to Meet Domain Specific Requirements: A Use Case Based on a Naval Instructor Operator Stations**

Beth Atkinson, Melissa Walwanis, *Naval Air Warfare Center, Training Systems Division, United States.*

**009. Application of Machine Learning Algorithms for Email Management**

Taiwo Ayodele, Shikun Zhou, Rinat Khusainov, *University of Portsmouth, United Kingdom.*

**010. GeoFuse: Context-Aware Spatiotemporal Social Network Visualization**

Nadya Belov, Jeff Patti, Angela Pawlowski, *Lockheed Martin, United States.*

**011. Potential Applications of Affective Computing in the Surveillance Work of CCTV Operators**

Anastassia Blechko, Iain Darker, Alastair Gale, *Loughborough University, United Kingdom.*

**012. Psychological Conclusions from Onboard Observations Concerning Ship Bridge Design and Design of Human-Machine Interfaces**

Ulrike Brüggemann, Kerstin Klemp, Stefan Strohschneider, *University of Jena, Germany.*

**013. Evaluating the Usability of Desktop of the OLPC Sugar.**

Carlos Cardenas, Lucia Elisa Loyola Cordova, Elizabeth Benites Rojas, *National University of Engineering, Peru.*

**014. Interface Children in Distributed Applications**

Carlos Cardenas, Lucia Elisa Loyola Cordova, Ketty Julca Valdez, *National University of Engineering, Peru.*

**015. Beneficial Effects of Spatial Sharing of Visual Attention on Player's Performance in A Video Game**

Loïc Caroux, Nicolas Vibert, Ludovic Le Bigot, *University of Poitiers, France.*

**016. Usability Evaluation of a Telepresence System: Vision Project**

Diana Castilla, *University Jaume I of Castellón, Spain;* Cristina Botella, Ignacio Miralles, Juana Bretón-López, *University Jaume I of Castelló, Spain;* Mercedes Jorquera, *Centro Clínico PREVI, Spain;* Mariano Alcañiz, *Universidad Politécnica de Valencia, Spain;* Azucena García\_Palacios, *University Jaume I of Castelló, Spain.*

**017. Analysis and Testing of Metaphors for the Definition of a Gestural Language Based on Real Users Interaction: Vision Project**

Diana Castilla, *University Jaume I of Castellón, Spain;* Ignacio Miralles, *University Jaume I of Castelló, Spain;* Mercedes Jorquera, *Centro Clínico PREVI, Spain;* Cristina Botella, *University Jaume I of Castelló, Spain;* Rosa Baños, *University of Valencia, Spain;* Javier Montesa, *Universidad Politécnica de Valencia, Spain;* Christian Ferran, *Telefónica I+D, Spain.*

**018. Relocation adaptation and rebuilding self-identification on the part of the elderly**

Hui-Dun Chang, Ju-Joan Wong, *Chang Gung University, Taiwan.*

**019. An SVM-based Predictive Schema of School Performance from Big Five Personality Traits and Biographical Data**

Jui Hung Chang, *National Cheng Kung University, Taiwan;* JuiHsi Fu, *National Chung Cheng University, Taiwan;* Hong Leok Ho, Yueh-Min Huang, *National Cheng Kung University, Taiwan;* Sing-Ling Lee, *National Chung Cheng University, Taiwan;* Wei-Guang Teng, *National Cheng Kung University, Taiwan.*

**020. A Study on the Preference of Plastic Superficial Texture of a Product – Computer Mouse for an Example**

Wen-chih Chang, Yan-chih Hsu, *National Taiwan University of Science & Technology, Taiwan.*

**021. An Investigation on the Users' Metacognitive Strategy and Wayfinding Facilitator Design in an Interactive Virtual Environment**

Chien-Hsiung Chen, Chia-Ying Tsai, Ying-Shan Chen, *National Taiwan University of Science & Technology, Taiwan.*

**022. Mobile User Interface Design That Meets Most Users' Needs—a Pilot Study**

Chunwei Chen, *Ling Tung University, Taiwan;* Chien Cheng Chang, *Hua Fan University, Taiwan.*

**023. Effects of Different Types of Naturalistic Conversation on Driving Performance Using Simulated Driving**

Hung Jui Chen, *Ching Yun University, Taiwan;* Chiuhsiang Joe Lin, *Chung Yuan Christian University, Taiwan;* Wan Yi Lin, *Ching Yun University, Taiwan.*

**024. Effects of Color Combination and Luminance Contrast on Reading Comprehension and Visual Fatigue**

Mei-Hsiang Chen, *Chung Shan Medical University, Taiwan.*

**025. An Event-Based Interface to Support Personal Lifelog Search**

Yi Chen, Gareth Jones, *Dublin City University, Ireland.*

**026. Graphic Designers' Computerized Retrieving Behavior in the Ideation Process**

Pei-Jung Cheng, Jen Yen, *National Yunlin University of Science & Technology, Taiwan.*

**027. Two Sides of One: Performance and Performativity of Collaborative Action of Computer and Human**

Hyunkyung Cho, Joonsung Yoon, *Soongsil University, Korea.*

**028. Playing the Soul: Development of Interactive Holographical Orgel**

Jae Joon Cho, Ok-Hue Cho, Won-Hyung Lee, *Chung-Ang University, Korea.*

**029. Bio Feedback Interactive Work for the Expression of Human Cytochemism**

Ok-Hue Cho, Jae Joon Cho, Kil-Sang Yoo, Won-Hyung Lee, *Chung-Ang University, Korea.*

**030. Usability Research on MP3 Smart Clothing: Where is the Best for MP3 Controller?**

Woon Jung Cho, Soo Hyun Kim, Kimin Eom, Sunju Park, Kwang-Hee Han, *Yonsei University, Korea.*

**031. Emotion Perception from Moving Objects: The Effect of Direction, Speed, and Acceleration Pattern**

Woon Jung Cho, Kwang-Hee Han, *Yonsei University, Korea.*

**032. Adaptive Immediate Feedback Technique for the Interactive Aural Skills Online Training**

Chi Chu, *China University of Technology, Taiwan;* Yu Ting Hwang, *Shih Chien University, Taiwan.*

**033. Trust-inducing Information Presentation for Online Auctions**

Hsi-Liang Chu, *Minghsin University of Science and Technology, Taiwan;* Yi-Shin Deng, *National Chiao Tung University, Taiwan.*

**034. Automatic point cloud generation using optical flow techniques for navigated Endoscopy in neurosurgery**

Matteo Ciucci, Lüder Kahrs, Jörg Raczkowski, Heinz Wörn, *University of Karlsruhe, Germany.*

**035. Internet Dimension as a Consistent Part of Business Internationalization Strategy**

Adriana Corfu, Carlos Costa, *University of Aveiro, Portugal;* Puiu Nistoreanu, *Academy of Economic Studies, Romania.*

**036. Integrating Elders into Virtual Social Networks through Ambient Displays**

Raymundo Cornejo, *CICESE Research Center, Mexico;* Mónica Tentori, *Autonomous University of Baja California (UABC), Mexico;* Jesus Favela, *CICESE Research Center, Mexico.*

**037. Visual Querying with Iconic Sketches for Face Image Retrieval**

Gamhewage De Silva, Kiyoharu Aizawa, *The University of Tokyo, Japan.*

**038. A Multimodal Augmented Reality System for Alignment Research**

Angelika Dierker, Till Bovermann, Marc Hanheide, Thomas Hermann, Gerhard Sagerer, *Bielefeld University, Germany.*

**039. A Gaze-Controlled Interface to Virtual Reality Applications for Motor- and Speech-Impaired Users**

Wei Ding, *University of Massachusetts Boston, United States;* Ping Chen, *University of Houston-Downtown, United States;* Hisham Al-Mubaid, *University of Houston-Clear Lake, United States;* Marc Pomplun, *University of Massachusetts Boston, United States.*

**040. Examining Text Analysis Method using Key Graph and Formal Concept Analysis**

Toshihisa Doi, Mashatoshi Rin, Sayoko Tominaga, Toshiki Yamaoka, *Wakayama University, Japan.*

**041. Computer Networks Supervision Interface using GIS**

Rami El Sawda, *University of Caen, France;* Mona Farhat, *Univrsity of Rouen, France;* Samer El Sawda, *innovline, France.*

**042. A New Approach to Design Augmented Reality Interface for Tele-Teaching of Industrial Robots**

Said Ennakr, Laredj Benchikh, Samir Otmame, Malik Mallem, *University of Evry, France.*

**043. Effects of Users' Locus of Control on Attitudes Toward Web-sites**

Kimin Eom, Juha Hyun, Kwang-Hee Han, *Yonsei University, Korea.*

**044. Development of a Climbing Robot Platform to Provide Temporary Surveillance in Urban Environments**

Mehmet Ali Erbil, Stephen Prior, Siddharth Odedra, Mehmet Karamanoglu, *Middlesex University, United Kingdom;* Siu-Tsen Shen, *National Formosa University, Taiwan.*

**045. The Efficacy of the Butler's Tool "Book of Life" To Induce Positive Moods in Elderly**

Ernestina Etchemendy, *CIBER of Physiopathology of Obesity & Nutrition, Spain;* Diana Castilla, *University Jaume I of Castellón, Spain;* Rosa Baños, *University of Valencia, Spain;* Cristina Botella, Azucena García-Palacios, Soledad Quero, *University Jaume I of Castelló, Spain.*

**046. Can Viewing 3D Images Improve Binocular Vision?**

Sina Fateh, *NEUROPTICAL Labs, Inc., United States;* Tetsuya Ichikawa, Hirofumi Tahara, Komuro Takahiro, Toru Fujii, *Olympus Visual Communications Corporation, Japan;* Masaru Miyao, *Nagoya University, Japan;* Claude Speeg, *University of Strasbourg, France.*

**047. The Role of Instrumental and Analytic Research in Human Computer Interface**

Yu-Ming Fei, Chiuhsiang Joe Lin, Yung-Tsan Jou, Min-Chih Hsieh, Hung-Jui Chen, *Chung Yuan Christian University, Taiwan.*

**048. Design of a Video Browsing System to Monitor Elders with Dementia in a Nursing Home**

Raul Fernandez, *CICESE Research Center, Mexico;* Mónica Tentori, *Autonomous University of Baja California (UABC), Mexico;* Jesus Favela, *CICESE Research Center, Mexico.*

**049. Conceptual and Empirical Perspectives of Schema Theory for Intuitive Interaction Evaluation and Design**

Sandrine Fischer, Makoto Itoh, Toshiyuki Inagaki, *University of Tsukuba, Japan.*

**050. Speech Balloon Captioning System for Meetings based on Automatic Speech Recognition**

Ayako Fujii, Hiroaki Nanjo, Takehiko Yoshimi, *Ryukoku University, Japan.*

**051. Evaluation of Color Sensitivity of the Elderly in HSV Color System**

Tetsuya Fujita, Yoshio Nakashima, Mamoru Takamatsu, *University of Toyama, Japan.*

**052. Physiological effects of horseback-riding simulator for the elderly determined using near-infrared spectroscopy**

Ayumu Fukao, *Ritsumeikan University, Japan;* Nakano Toshio, Bungo Imai, Akihiro Michimori, *Panasonic Electric Works Co., Ltd., Japan;* Hiroshi Hagiwara, *Ritsumeikan University, Japan.*

**053. Design and Implementation of a Learning Support System for Folk Dance Utilizing a Remote Control Device**

Tadasuke Furuya, Pawel Pohl, Yuki Kaneko, Hiroko Miyamura, Takafumi Saito, *Tokyo University of Agriculture and Technology, Japan.*

**054. Reducing Medical Errors in Breast Cancer Screening**

Alastair Gale, Hazel Scott, *Loughborough University, United Kingdom.*

**055. Toward Learning from a Voluntary Medial Incident Reporting System**

Yang Gong, *University of Missouri, United States.*

**056. Gestonic: Sonification of Hand Gestures for Real-time Timbre Control**

Visda Goudarzi, *Stanford University, United States.*

**057. Text Entry Method for Reduced Keypads using One Key Stroke and One Column Stroke per Character**

Sumanta Guha, *Asian Institute of Technology, Thailand.*

**058. A Quantitative Approach for Human Factors Studies in Information Searching Tasks in Nuclear Power Plants**

Jun Su Ha, Poong Hyun Seong, *Korea Advanced Institute of Science & Technology (KAIST), Korea.*

**059. The Decision Support Method for Process Safety Evaluation**

Adam Hamrol, Agnieszka Kujawska, Maria Pilacinska, Michal Rogalewicz, *Poznan University of Technology, Poland.*

**060. A Study of the Relationship between Mobile Services and Contexts**

Sujung Han, Geonhyeok Go, Changyoung Lim, *Korea Advanced Institute of Science & Technology (KAIST), Korea.*

- 061. Line of Sight Analysis when Using Internet Search Engines**  
Kei-ichiro Hatusuda, Takako Nonaka, Tomohiro Hase, *Ryukoku University, Japan.*
- 062. Development of Tactile Transmission System for Realization of Tele-operated Palpation**  
Yusuke Hidaka, Yuta Shiokawa, Takashi Maeno, *Keio University, Japan.*
- 063. Elderly People's Operational Image Using New Electrical Appliances**  
Ichiro Hirata, *Hyogo Prefectural Institute of Technology, Japan*; Shohei Yoshida, Toshiki Yamaoka, *Wakayama University, Japan.*
- 064. Developing Saccadic Eye Movement Analysis for Measuring Fatigue in Real Life Situations**  
Kati Hirvonen, *Finnish Institute of Occupational Health, Finland*; Kristian Gould, *Scandpower AS, Norway*; Sampsa Puttonen, Jussi Korpela, Kristian Lukander, Kiti Müller, *Finnish Institute of Occupational Health, Finland.*
- 065. Instant Messaging and Communication Overload in Mobile Command & Control**  
Geoffrey Ho, Keith Niall, *Defence R&D Canada - Toronto, Canada.*
- 066. A Shared-Vision System for User Support in the Field of Micro Manufacturing**  
Bo Hoege, Sam Schlatow, Matthias Roetting, *Berlin University of Technology, Germany.*
- 067. A Study of Preferences for Design of Taiwan's National Digital Archives Program Webpages**  
Chun Cheng Hsu, *National Chiao Tung University, Taiwan*; Chia-Ying Tsai, *National Taiwan University of Science & Technology, Taiwan.*
- 068. Taiwanese and Japanese Students' Image and Preference Perceptions toward Product Form of Portable Pencil Sharpeners**  
Shih Yen Huang, Chien Cheng Chang, *Hua Fan University, Taiwan.*
- 069. Digitizing the Human Mind to Process Text Input and Spatial Controls in a Brain-Computer Interface**  
Jee Yeon Hwang, *Georgia Institute of Technology, United States.*
- 070. Motion-based Interaction for Mirror World in Mobile Devices**  
Jein Hwang, Ig-Jae Kim, Donghoon Kang, Sang Chul Ahn, Hyoung-gon Kim, *Korea Institute of Science and Technology (KIST), Korea.*
- 071. Communication Support for Hearing-Impaired People in a Hospital by Using Interactive Sign Language Animation System**  
Shuhe Inoue, Noriaki Kuwahara, Kazunari Morimoto, *Kyoto Institute of Technology, Japan.*
- 072. Feature Extraction for Gait Recognition Using Plate-Type Pressure Sensors**  
Yumiko Inoue, Mieko Ohsuga, Wataru Hashimoto, Fumitaka Nakaizumi, *Osaka Institute of Technology, Japan.*
- 073. Calibrating Coordinates of Floor Projection with a Reflex in Eye-Hand Coordination**  
Makio Ishihara, *Fukuoka Institute of Technology, Japan*; Yukio Ishihara, *NICHIBEI DENSHI CO., LTD., Japan.*
- 074. The Exercise System of Aerobics for Blind by Using Motion Capture**  
Ritsuko Izuhara, Ryouhei Nakamura, Yoshiyuki Miyajima, Kazuki Murasaki, Hiroshi Nagase, *Kanazawa Institute of Technology, Japan.*
- 075. A Study on UI Design of Navigation based MMORPG (Massively Multiplayer Online Roll Playing Game)**  
Sinah Jo, Wooyoung Choi, Sanja Postic, Hyunjeong Kim, *Kyungshung University, Korea.*
- 076. WATOJI Training System Using Augmented Reality**  
Sayaka Kamon, Yuki Uranishi, *Nara Institute of Science and Technology, Japan*; Hiroshi Sasaki, *Kobe University, Japan*; Yoshitsugu Manabe, Kunihiro Chihara, *Nara Institute of Science and Technology, Japan.*
- 077. Relationship Between Arousal Level and Postural Sway during the Eyes-closed Condition**  
Tomoyuki Kanakura, Tatsumi Inamoto, Hiroshi Hagiwara, *Ritsumeikan University, Japan.*
- 078. Intuitively Controlled Hand-held Mobile Robot for Precision Craniotomy Surgery**  
Gavin Kane, Georg Eggers, Robert Boesecke, *University of Heidelberg, Germany*; Jörg Raczekowsky, Heinz Wörn, *University of Karlsruhe, Germany*; Rüdiger Marmulla, Joachim Mühling, *University of Heidelberg, Germany.*
- 079. Indexing of Insertion Velocity and Force for Acupuncture Training System**  
Ren Kanehira, *FUJITA Health University, Japan*; Weiping Yang, *Aichi Shukutoku University, Japan*; Hirohisa Narita, *FUJITA Health University, Japan*; Atsushi Shoda, Hideo Fujimoto, *Nagoya Institute of technology, Japan.*
- 080. ConfUse: A Social Networking Application for Conference Attendees**  
George Kapnas, Stavroula Ntoa, George Margetis, Constantine Stephanidis, *Foundation for Research & Technology - Hellas (FORTH), Greece.*
- 081. Pointing Task Performance by Remote Pointing Device with Gyro Sensor for Elderly Users Manipulation**  
Macky Kato, Yoshie Shimodaira, *Nagano Prefectural College, Japan*; Takeshi Sato, *Jissen Women's University, Japan.*
- 082. Satisfaction Dimensions of LCD TVs in Comparison with the CRT TVs**  
Sultan Kaygin Sel, *Vestel Electronics Co., Turkey.*
- 083. The Effect of Dose Decision Support System Design on the Users' Compliance and Reduction of Prescription Errors**  
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# General Information

## Conference Location

The Conference is hosted at the Town and Country Resort & Convention Center, San Diego's largest privately owned Convention Center, with 250,000 square feet of flexible meeting space, located in the heart of San Diego in Mission Valley. Its convenient, central location is only 6 miles from San Diego Lindbergh Field airport and only ten minutes from city's sites, popular attractions (e.g., the World-Famous San Diego Zoo, San Diego Wild Animal Park, SeaWorld Adventure Park, LEGOLAND California, etc.) and beautiful bays and beaches providing easy access to all of them. For easy travel around San Diego, hop aboard the San Diego Trolley.

## Gala Dinner

The Gala Dinner will take place right after the Opening Plenary Session, on Tuesday, 21 July 2009.

All Conference participants and accompanying persons, who carry an HCI International 2009 badge and their Gala Dinner and Drink Tickets, will be permitted entrance.

Extra Gala Dinner Tickets will be available from the Conference Secretariat by Tuesday, 21 July, 17:00 hrs.

Important note: You must be 21 years old to drink alcohol. Please be ready to provide you ID upon request.



## Coffee Breaks

Day / Time	Sunday, 19 July	Monday, 20 July	Tuesday, 21 July	Wednesday, 22 July	Thursday, 23 July	Friday, 24 July
10:00 - 10:30			Charlie's Patio	Grand Exhibit Hall	Grand Exhibit Hall	Grand Exhibit Hall
10:30 - 11:00	Charlie's Patio	Charlie's Patio				
15:00 - 15:30			Charlie's Patio			
15:30 - 16:00	Charlie's Patio	Charlie's Patio		Grand Exhibit Hall	Grand Exhibit Hall	Grand Exhibit Hall

## Lunch

Participants are kindly asked to make their own arrangements for lunch, during the following lunch breaks:

Sunday, 19 July	12:30 - 14:00		Wednesday, 22 July	12:30 - 13:30
Monday, 20 July	12:40 - 14:00		Thursday, 23 July	12:30 - 13:30
Tuesday, 21 July	12:00 - 13:30		Friday, 24 July	12:30 - 13:30

## Internet Park

PCs with Internet connectivity are provided in the Internet Park located at **Atlas Foyer**.

Participants carrying their own portable equipment can use the available slots provided to connect their equipment.

The Internet Park is open during the following hours:

### Internet Park Timetable

Sunday, 19 July	09:00	18:00
Monday, 20 July		
Tuesday, 21 July	09:00	17:00
Wednesday, 22 July		
Thursday, 23 July	09:00	18:00
Friday, 24 July		

## Speakers' preparation room

The speakers' preparation room, **Galleria ONE** is equipped with a laptop computer and a projector for PowerPoint presentations.

### Speakers' preparation room

Sunday, 19 July		
Monday, 20 July	09:00	18:00
Tuesday, 21 July	09:00	17:00
Wednesday, 22 July		
Thursday, 23 July	09:00	18:00
Friday, 24 July		

## Information for Presenters

### Paper Presentations

Papers are allocated approximately 15 minutes for presentation, with an additional 2-3 minutes for questions and answers following each talk. Session Chairs introduce the speakers and moderate the discussion.

Each presentation room is equipped with a laptop computer and a projector for PowerPoint presentations. The available software may also allow for other types of presentations, such as embedded videos.

Hardware specifications of laptops:

- Intel Pentium 2.6 GHz
- 512 MB memory
- DVD/CD read/write

Software available on laptops (all in English language):

- MS - Windows XP Professional
- MS - Office 2003
- Windows Media Player
- Adobe Reader

Laptops have a USB port accepting USB memory devices.

Presenters who wish to run specialized software need to bring their own laptop. Prior to their session, they should inform the Session Chair and test that their computer works with the projector in the room.

MAC computers are also acceptable. MAC users must bring their own adapter to connect to the VGA cable.

Internet connection is available in the presentation rooms.

### Poster Presentation

Poster set-up will take place between 12:00 - 17:00 on Tuesday, 21 July 2009.

Poster removal will take place between 18:30 - 22:00 on Friday, 24 July 2009.

The posters will be mounted on poster boards (one poster per board) with push pins which will be available on site.

The size of the poster boards is:

- Width: 48 inches (1,22 meters)
- Length: 96 inches (2,43 meters)
- Height: 78 inches (1,98 meters)

while the usable area size is:

- Length: 94 inches (2,38 meters)
- Height: 46 inches (1,17 meters)

Presenters can mount multiple single sheets of paper, larger posters, pictures, or any printed materials on the boards.

The poster area is located within the **Grand Exhibit Hall**. The Exhibition area is open from 09:00 hrs to 18:30 hrs, from Wednesday 22 July to Friday 24 July 2009.

Authors of posters are kindly asked to make themselves available during these days of the Conference to present their work and answer questions about their poster to Conference participants.

It is up to the presenters to arrange the date(s) and time(s) they will be available. They may wish to indicate on the poster board when they will be available to provide brief presentations and answer questions about their poster to Conference participants.

### Exhibitors

Exhibits may not be dismantled or removed until the close of the Exhibition. All exhibitor materials must be removed from the exhibit facility by 24 July at 22:00 hrs. Exhibitors should arrange with their carrier to pick-up their outbound freight directly from the facility:

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To ensure all exhibitor materials are removed from the exhibit facility by the Exhibitor Move-Out deadline, all all carriers should check-in by 24 July at 20:00 hrs.

### Message Boards

Three message boards will be allocated near the Conference Secretariat, **Golden Pacific Foyer**:

- one for announcements of the Conference Organizers,
- one for use by the Conference participants, and
- one for job announcements,

### Display Boards and Tables

Display boards and tables for Conference participants who wish to share or distribute promotional material, are available near the Conference Secretariat, **Golden Pacific Foyer**.

### Smoking Policy

HCI International 2009 is a smoke-free Conference. There are easily accessible outdoor areas at the Convention Center where smoking is permitted.

### Mobile Phone Courtesy

HCI International 2009 requests that all mobile phones, pagers and other equipment with audible alarms be turned off in all sessions as a courtesy to the presenters and to the other attendees.

### Business Center

The Town and Country's Business Center, is located in the **South Atlas Foyer**, open 7 days a week from 8:00 until 17:00, providing a wide range of services.

## HCI International News

HCI International News is a newsletter about Human - Computer Interaction topics, the HCI International Conference series, and more.

The HCI International News is distributed through a mailing list and is also available on-line at:  
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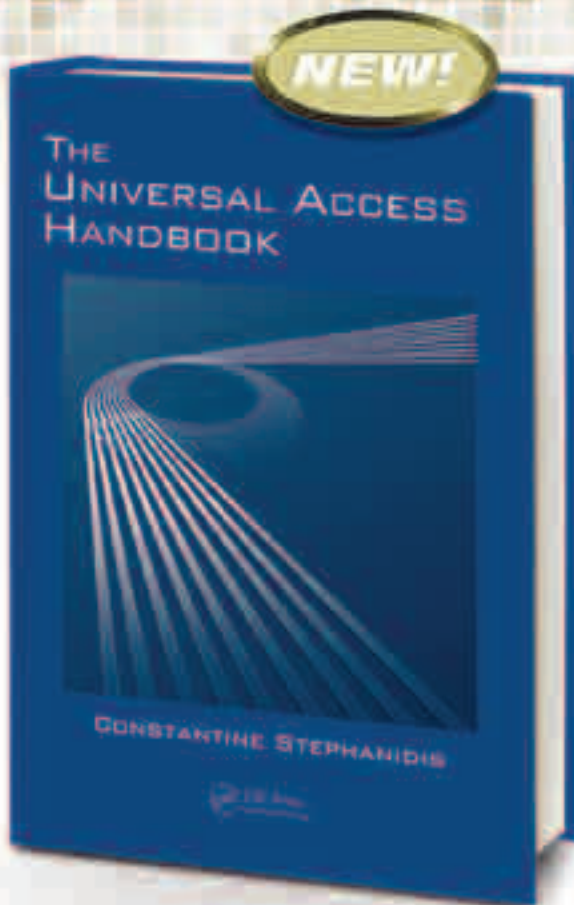


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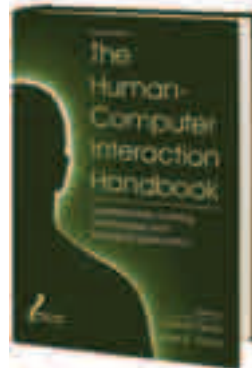
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