

**Final Program**

# 2001 HCI International

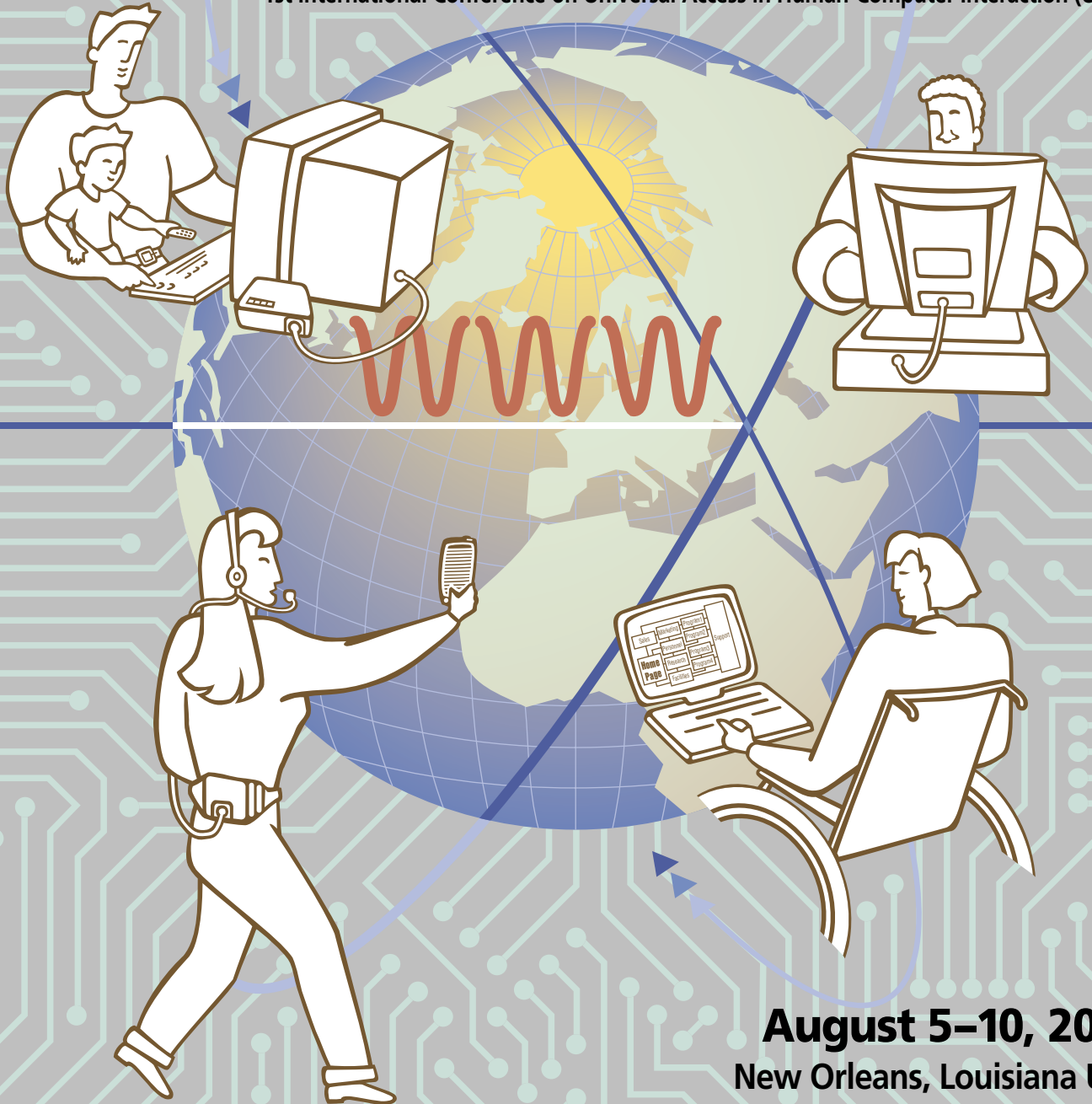
**9th International Conference on Human-Computer Interaction**

jointly with

Symposium on Human Interface (Japan) 2001

4th International Conference on Engineering Psychology and Cognitive Ergonomics (EP&CE)

1st International Conference on Universal Access in Human-Computer Interaction (UAHCI)



**August 5–10, 2001**  
**New Orleans, Louisiana USA**

**Under the auspices of a distinguished international board of 115 members from 21 countries**

In cooperation with Chinese Academy of Sciences • Human Factors and Ergonomics Society • Institute of Industrial Engineers  
International Ergonomics Association • Japan Ergonomics Society • Japan Management Association

# Tutorials

**All Day** **Half-Day**

**SUNDAY**

8:30 am–5 pm

- 1 Cross-Cultural User-Interface Design**  
Aaron Marcus, Aaron Marcus and Associates, Inc., Emilie W. Gould, Rensselaer Polytechnical Institute, Donald L. Day, InContext Enterprises  
**Orleans Room**
- 2 Cognitive Engineering in Software Design**  
Celestine A. Ntuen, North Carolina A&T State University  
**Wildcatter Room**
- 3 Successful Web Design**  
John Keller, Micro Analysis & Design  
**Creole Room**

AFTERNOON • 1:30–5 pm

- 4 Design and Usability Evaluation of Customer Relationship Management in Commercial Web Site and E-Business**  
Marc Resnick, Florida International University and Usability Solutions  
**Gold Room**

**MONDAY**

8:30 am–5 pm

- 5 User-Interface Design for Work, Home and On the Way**  
Aaron Marcus and Uri Kochavi, Aaron Marcus and Associates, Inc.  
**Wildcatter Room**
- 6 Design of Cross-Disability Accessible Mass Market Electronic Proeducts**  
Gregg Vanderheiden, University of Wisconsin-Madison  
**Gold Room**
- 7 E-Learning: Plan, Design, Delivery and Implementation**  
Lisa Neal, EDS  
**Rex Room**
- 8 Using Computer Modeling to Evaluate the User Computer Interface**  
Ron Laughery, Micro Analysis and Design  
**Creole Room**

AFTERNOON • 1:30–5 pm

- 9 Tailoring Speech Recognition to Application Needs**  
Thomas Wetter, University of Heidelberg  
**Orleans Room**

**TUESDAY**

8:30 am–5 pm

- 10 Understanding User Interface Design as Knowledge Management**  
Chris Stary, University of Linz  
**Orleans Room**
- 11 Psychophysical Methods for User Interface Design and Evaluation**  
Hong Z. Tan and Zygmunt Pizlo, Purdue University  
**Gold Room**
- 12 Virtual Reality: Design, Implementation, Usability and Applications**  
Kay M. Stanney, University of Central Florida  
**Wildcatter Room**
- 13 Engineering Universal Access: Unified User Interfaces**  
Constantine Stephanidis, Anthony Savidis and Demosthenes Akoumianakis, ICS-FORTH  
**Creole Room**

MORNING • 8:30 am–12 pm

- 14 Multimedia and the Web: Standards and Guidelines**  
Jürgen Zigler, Fraunhofer IAO  
**Rex Room**

AFTERNOON • 1:30–5 pm

- 15 Usability Design of Information and Computer Security**  
E. Eugene Schultz, University of California-Berkeley and Robert Proctor, Purdue University  
**Rex Room**
- 16 The Shrinking Web Interface**  
Nick Similonic and Lynne Thompson, Unisys Corporation  
**Bayou 1**

# Opening Session &

TUESDAY • 5:15–6:30 pm • International Ballroom

Chair: *Aaron Marcus*, Aaron Marcus & Associates, Inc., USA

# Keynote Address

Chair: *Masaaki Kurosu*, Shizuoka University, Japan



## Intuitive Human-Technology Interaction: Towards a User-Friendly Information Society

### Professor Hans-Joerg Bullinger

Head of the Fraunhofer Institute for Industrial Engineering (IAO) in Stuttgart and of the Institute for Human Factors and Technology Management (IAT), University of Stuttgart, Germany

The main work of the Institutes is information management (management of companies, information systems, work design) and production management (planning of production, R&D-management and human resource management). The two Institutes employ more than 240 full-time professionals and more than 400 students. Hans-Joerg Bullinger is the author of over 1000 publications dealing with planning, development, evaluation, implementation and management of advanced computerized technologies in the workplace.

## Registration

Registration hours at the Conference will be at the following times:

<b>Saturday, August 4</b>	<b>4–7 pm</b>
<b>Sunday, August 5</b>	<b>7 am–5:30 pm</b>
<b>Monday, August 6</b>	<b>7 am–5:30 pm</b>
<b>Tuesday, August 7</b>	<b>7 am–5:30 pm</b>
<b>Wednesday, August 8</b>	<b>7 am–5:30 pm</b>
<b>Thursday, August 8</b>	<b>7 am–5:30 pm</b>
<b>Friday, August 9</b>	<b>7 am–3 pm</b>

The Conference registration fee includes participation in all open technical sessions (not including tutorials), refreshment breaks, 4-volume conference proceedings, and one ticket for the reception/dinner cruise on the Creole Queen riverboat.

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

## Contents

### Conference at a Glance

Tuesday & Wednesday	2
Thursday & Friday	4

### Parallel Technical Sessions

Wednesday	6
Thursday	18
Friday	30

### Posters & Exhibition

### General Information

Invitation-only Meetings	
HCI International 2003	
Social Functions	

### Chairs & Program Boards

### Floorplans

## Exhibition & Posters

The Exhibition Hall—located in the Imperial Room—will be open Wednesday and Thursday, 9 am–5 pm, and Friday, 9 am–3 pm. All Posters will be displayed Wednesday through Friday (see pages 39–43). Refreshment breaks will also take place in the Imperial Room.

# Conference

TUESDAY

Registration • 7 am–5:30 pm

WEDNESDAY

Registration • 7 am–5:30 pm

**MORNING • 8–10 am**

**MORNING • 10:30 am–12 pm**

Web Design and User Interfaces: Principles, Cases, and Common Pitfalls • Gold Room

Internationalization/Localization 1 • Rex Room

Effective Input and Output for Mobile Devices • University Room

Applications of Real-time Human-in-the-loop Simulation to Research, Development and Training • Orleans Room

Quality of Working Life (QWL) and Information Technology (IT) • Explorer's Room

3-dimensional User Interfaces • Bayou 4

Human, Computer and Environment • Emerald Room

Collective Intelligence via Robotic Communication • Wildcatter Room

Web Site Designers 1 • Bayou 3

Virtual Systems • Loyola Room

**UAHCI** Universal Design • Bayou 1

**UAHCI** Assistive Technologies 1 • Mayor's Chamber

**UAHCI** Education and Training 1 • Creole Room

**UAHCI** Linguistic and Cultural Differences • Tulane Room

**EP&CE** Contributions of Basic Research in Cognitive Psychology to Human Factors and Human-computer Interaction • Bayou 2

Work with Visual Display Unit (VDU): Health Consequences • Wildcatter Room

Task Modelling and HCI Generation • Creole Room

Wearable Computing • University Room

Work Process Knowledge and Learning Organizations • Orleans Room

Post Wimp HCI • Bayou 4

Diversity and Cultural Issues of Information Technology • Rex Room

Rethinking the Home at Converging and Embedded Technologies • Mayor's Chamber

Cross-cultural User Interface Design: What, So What, Now What? • Gold Room

Content Preparation Requirements and Knowledge Elicitation • Bayou 2

**UAHCI** Adaptation • Emerald Room

**UAHCI** Assistive Technologies 2 • Bayou 3

**UAHCI** Public Services • Explorer's Room

**UAHCI** Rehabilitation • Tulane Room

**UAHCI** Non-visual Interaction 1 • Loyola Room

**EP&CE** Looking at the Human Aspects of Technology Transfer from the Aviation Industry to Other Applications • Bayou 1

**Optional Excursion:** Traditions of Mardi Gras • depart at 9 am, return at 11:30 am

# at a Glance

## EVENING • 5:15–6:30 pm

### Opening Session & Keynote Address •

International Ballroom

### Intuitive Human-Technology Interaction: Towards a User-Friendly Information Society

#### Professor Hans-Joerg Bullinger

Head of the Fraunhofer Institute for Industrial Engineering (IAO) in Stuttgart and of the Institute for Human Factors and Technology Management (IAT), University of Stuttgart, Germany

## EVENING • 6:45–10:15 pm

### Conference Reception & Dinner Cruise: Rollin' on the River

Buses will depart for the boat between 6:45–7:15 pm and are scheduled to return to the hotel around 10:15 pm. Buses leave from the Baronne Street entrance of the hotel.

Please bring your ticket(s) to board the riverboat. Most regretfully, without the ticket(s), you will not be able to participate.

TUESDAY

## Posters & Exhibition • 9 am–5:30 pm • Imperial Room

### AFTERNOON • 1:30–3 pm

Internationalization and Localization 2 • Rex Room

Ergonomic Intervention Concepts: Success Factors • Gold Room

The Social and Affective Elements of Human-computer Interaction • Orleans Room

Capturing Information from the User Environment • Bayou 4

Design Using Virtual Reality • University Room

Computer Usability: Physiological, Psychological and Ergonomic Approach • Creole Room

Labor Perspectives on Ergonomics and Occupational Stress • Mayor's Chamber

Macroergonomics 1 • Explorer's Room

Input Devices • Wildcatter Room

Plant Supervisory Systems • Tulane Room

Application of Content Preparation to the Web • Bayou 2

**UAHCI** Access to the Physical Environment • Emerald Room

**UAHCI** Socially Sustainable HCI-design • Bayou 1

**EP&CE** Cognitive Man-machine Cooperation • Bayou 3

### AFTERNOON • 3:30–5:30 pm

Internationalization and Localization 3 • Rex Room

Applied HCI Research • Orleans Room

Enabled by Design • Gold Room

Perception and Performance in Virtual Environments • Bayou 3

HCI in Information Retrieval • Bayou 4

Augmented Reality • Emerald Room

Human Factors Issues Associated with Virtual Environments 1 • Explorer's Room

Information Representation in Virtual and Augmented Realities • Mayor's Chamber

Interaction Technology for Affective Computing 1 • Bayou 2

Training and Help Systems • Loyola Room

**UAHCI** Access to Information 1 • Bayou 1

**UAHCI** Health Telematics • Bayou 1

**UAHCI** Education and Training 2 • Creole Room

**UAHCI** Legal, Ethical and Social Issues • Wildcatter Room

**EP&CE** Applied Eye Tracking Technology in Cognitive Ergonomics • Tulane Room

WEDNESDAY

**Optional Excursion:** Circling the Crescent City • depart at 5:45 pm; return at 9:45 pm

# Conference

THURSDAY

## Registration • 7 am–5:30 pm

### MORNING • 8–10 am

**Virtual Reality and Novel Interface** • Tulane Room  
**User Interface Development** • Bayou 3  
**Anytime, Anywhere: Mobile Baby-face Design for PDAs and Cellphone** • Gold Room  
**Methodology of Ergonomic Assessment of Computer Workplaces** • Wildcatter Room  
**Management of Information and Knowledge in Agile Manufacturing** • Orleans Room  
**Usability Localization in Japan** • Emerald Room  
**Office Ergonomics: How Do We Know if It Works?** • Mayor's Chamber  
**Human Factors Issues Associated with Virtual Environments 2** • Explorer's Room  
**Usability** • Rex Room  
**Speech User Interfaces** • Bayou 4

**UAHCI** **Interaction Technologies 1** • Bayou 2  
**Speech Recognition Interfaces: Design, Evaluation, and Algorithms** • University Room  
**Human Factors and Universal Access** • Bayou 1

**EP&CE** **Activity Theory** • Creole Room

### MORNING • 10:30 am–12 pm

**Advanced Interface Designs for Human Support** • Explorer's Room  
**Interaction with Agents Systems** • Bayou 3  
**Integrated Design in Practice** • Gold Room  
**Towards Safe HCI for Complex Systems** • Wildcatter Room  
**Knowledge Management in Knowledge Intensive Organizations** • Orleans Room  
**Computer-enhanced Learning in Higher Education** • Emerald Room  
**Human Factors of Affective and Pleasure Based Design** • Bayou 2  
**Web Use in Education and Training** • University Room  
**Company Management System** • Tulane Room  
**Organizational Learning Using the Intranet 1** • Bayou 4  
**HCI Medley 1** • Creole Room

**UAHCI** **Web Access 1** • Bayou 1  
**Visual Languages for Universal Communication** • Mayor's Chamber  
**User Diversity and User Participation 1** • Rex Room

**Optional Excursion:** Southern Country Plantations • depart at 9 am; return at 4:30 pm

FRIDAY

## Registration • 7 am–3 pm

### MORNING • 8–10 am

**Knowledge Systems and Agents** • Tulane Room  
**Web Usability Practices in Asia** • Bayou 3  
**Interaction in Mixed Reality Environments** • Bayou 4  
**Computer Supported Learning** • Gold Room  
**Auditory Virtual Environments: Implementation, Validation, and Applications** • Rex Room  
**Web Site Designers 3** • Emerald Room  
**Sociotechnical Systems Design and Development** • Wildcatter Room  
**HCI Medley 2** • Mayor's Chamber  
**Human Centered Design** • Explorer's Room  
**Visual Interface Aspects** • Creole Room  
**Interface Issues** • University Room  
**Learning and Education for Children** • Orleans Room

**UAHCI** **Intelligent Interfaces for Universal Access: Challenges and Promise 1** • Bayou 1  
**Community, Culture and Society** • Bayou 2

### MORNING • 10:30 am–12 pm

**Pen-based Interfaces and Applications** • Wildcatter Room  
**Human-computer Interaction for Adaptive Learning Systems** • Emerald Room  
**Virtual Reality Interface Methodologies for HCI** • Bayou 3  
**Macroergonomics 3** • Gold Room  
**Human-computer Interaction in Health Care** • Bayou 2  
**Coordination Quality of Human and Automation** • Creole Room  
**Job Stress, Electromyography, and Musculoskeletal Problems in Computer Work** • Orleans Room  
**Existing Tools and Tools Needed for the Anthropometry of the Future (Panel Session)** • Mayor's Chamber  
**Gesture Interface** • Bayou 4

**UAHCI** **Nonvisual Mathematical Interactive Systems and Applications** • Tulane Room  
**Intelligent Interfaces for Universal Access: Challenges and Promise 2** • Bayou 1  
**Guidelines and Standards** • University Room  
**Architectures and Tools** • Rex Room  
**Software Support for Universal Design** • Explorer's Room

# at a Glance

## Posters & Exhibition • 9 am–5:30 pm • Imperial Room

### AFTERNOON • 1:30–3 pm

**Human Aspects of Web Design** • University Room  
**Multimodality for Universal Access** • Mayor's Chamber  
**Applications** • Tulane Room  
**Physical World for Virtual World** • Wildcatter Room  
**HCI Considerations in E-commerce Enabling Technologies** • Creole Room  
**Enterprise Resource Planning** • Orleans Room  
**Evaluation Methodologies for Human-machine Interaction** • Gold Room  
**Organizational Learning Using the Intranet 2** • Bayou 4

**Web Access 2** • Bayou 1

**Open User Groups and Task-centered Design** • Bayou 2

**Access to Information 2** • Explorer's Room

**Japanese Activity in Universal Access** • Emerald Room

**Intelligent Human-computer Interfaces** • Bayou 3

**Performance Recovery Nuclear Reactor** • Rex Room

UAHCI

EP&CE

### AFTERNOON • 3:30–5:30 pm

**Intelligent Educational Systems** • Explorer's Room  
**Ergonomic Issues and Advanced Technology in HCI** • Emerald Room  
**Kansei Engineering and Its Applications** • Gold Room  
**The Human Element in Operations Management** • Wildcatter Room  
**Adaptive and Adaptable Interfaces** • Mayor's Chamber  
**Interaction Technology for Affective Computing 2** • Bayou 3  
**Perspectives on HCI in Health Informatics: Insuring Quality in Healthcare Decision-making** • Tulane Room

**Speech/Voice Interface** • University Room

**Web Site Designers** • Bayou 4

**User Diversity and User Participation 2** • Rex Room

**Interaction Technologies 2** • Bayou 2

**Enabled By Design in the World of Ubiquitous Computers** • Orleans Room

**Continuity in HCI** • Creole Room

**Human Modeling and Cognitive Simulation** • Bayou 1

UAHCI

EP&CE

THURSDAY

## Posters & Exhibition • 9 am–3 pm • Imperial Room

### AFTERNOON • 1:30–3 pm

**Non-traditional Interfaces** • Emerald Room  
**Tools for Web Site Metrology** • Explorer's Room  
**Nonverbal Communication** • Gold Room  
**Next Big Things that Weren't: Lessons for Human Factors Experts** • Orleans Room  
**Multi-media** • Bayou 3  
**News on Agent-based Information Retrieval** • University Room  
**Software Interface** • Rex Room  
**Macroergonomics 2** • Bayou 4

**Interaction Technologies 3** • Bayou 1

**Transport Telematics** • Creole Room

**Design Methods for Universal Access in HCI and Their Applications** • Wildcatter Room

**Non-visual Interaction 2** • Mayor's Chamber

**Call Center Design** • Tulane Room

**Cognitive Processes** • Bayou 2

UAHCI

EP&CE

FRIDAY

## Web Design and User Interfaces: Principles, Cases, and Common Pitfalls

**Gold Room**

*Chair: Anke Ahrend, User Interface Design GmbH, Germany*

**Getting Off to a Good Start: The Tricky Business of the Discovery and Design Phase**  
V. Frank & P. Osburn, Vertigo Software Inc., Germany

**User Expectations and Iterative Design: A Case Study**  
C. Lutsch & B. Ertle, Iconmedia Lab, Germany

**Kids' Space**  
M. Schiessl, S. Duda & R. Fischer, Eye Square GmbH, Germany

**Some Preliminary Investigation about the Organization of User Interface Design Guidelines**  
J. Vanderdonckt, Universite catholique de Louvain, Belgium

**User Interface and Other Features of a Videotelephone Set Aimed at the Elderly—A Pilot Assessment of Depth and Breadth Trade-off of Screen Menus**  
S. Vayrynen & M. Tormanen, University of Oulu, Finland; V. Tornberg & T. Prykari, Navicre Ltd., Finland

## Internationalization/Localization 1

**Rex Room**

*Chair: Nuray Aykin, AT&T, USA*

**Consumer Activity Research: Insights for Developing Products and Services**  
J.E. Laviana & K.W. Douros, Motorola Labs, USA

**Usability Engineering in China**  
T. Lu & J. Zheng, Siemens Ltd., China

**Comparative Study of the Internationalized Software—Do They Really Fit to the Targeted User?**  
M. Kurosu, K. Motoki & Y. Itoh, Shizuoka University, Japan

**Understanding the Chinese User: Attitudes Toward Automation, Work, and Life**  
T. Plocher, Honeywell Technology Center, USA; Z. Chen, Chinese Academy of Sciences, P.R. China; S.-F.M. Liang, Honeywell Singapore Technology Center, Singapore; S. Xianghong & Z. Kan, Chinese Academy of Sciences, P.R. China

**Points to Consider in Multilingual Telephone Messages**  
W. Hawkins, AT&T Labs, USA

**Design Issues for Mainland China in the Area of Human-Machine-Interaction Design**  
K. Rose, L. Liu & D. Zuhke, University of Kaiserslautern, Germany

## Effective Input and Output for Mobile Devices

**University Room**

*Chair: Andrew Sears, University of Maryland Baltimore County, USA*

**An Evaluation of Gesture Recognition for PDAs**  
A. Sears & R. Arora, University of Maryland Baltimore County, USA

**Investigating PDA Web Browsing Through Eye Movement Analysis**  
H.S. Bautsch-Vitense & G.J. Marmet, University of Wisconsin-Madison, USA & J.A. Jacko, Georgia Tech, USA

**Development of a Gesture-Based Interface for Mobile Computing**  
J.M. Vice, C.E. Lathan & J. Sampson, AnthroTronix, Inc., USA

**Soft Keyboards for Mobile Devices: Understanding the Effects of keyboard size**  
Y. Zha & A. Sears, University of Maryland Baltimore County, USA

## Applications of Real-time Human-in-the-loop Simulation to Research, Development & Training

**Orleans Room**

*Chair: Dennis Beringer, FAA Civil Aeromedical Institute, USA*

**An Example of General Aviation Simulation Research for Developing Certification Criteria and Guidelines: Primary Flight Displays**  
D.B. Beringer, FAA Civil Aeromedical Institute, USA & J.D. Ball, University of Oklahoma, USA

**Applying Flight Simulation and Rehearsal Concepts to Enhance Aerospace Warfighting Effectiveness**  
T.S. Andre & W. Bennett Jr., Air Force Research Lab, USA

**Advanced Embedded Training Simulation for Navy Surface Combatant Tactical Teams**  
D.M. Lyons & D.P. McDonald, Naval Air Warfare Center Training Systems Division, USA

**Real-time Virtual Environment Applications for Military Maritime Training**  
L. Nguyen, J. Cohn, A. Mead, J. Helmick & J. Patrey, Naval Air Warfare Center Training Systems Division, USA

**Matching Automotive Simulator Capabilities to the Emerging Associated with In-Vehicle Information Systems**  
J.D. Lee, University of Iowa, USA

**Using Head Mounted Displays in Low-Cost Simulations**  
R.W. Allen, J.R. Hague & Z. Parseghian, Systems Technology Inc., USA

## Quality of Working Life (QWL) and Information Technology (IT)

**Explorer's Room**

*Chairs: Catrien Bijleveld, TNO Work and Employment, The Netherlands & Frank Andries, TNO Institute for Preventative Healthcare, The Netherlands*

**Quality of Working Life and Information and Communication Technologies**  
E. Jarvenpaa & S. Immonen, Helsinki University of Technology, Finland

**Quality of Working Life and Quality of Life in an IT Society**  
P. Carayon & M.C. Haims, University of Wisconsin-Madison, USA

**Psychosocial Issues in Call Center Work**  
P. Huhtanen, T. Ristimäki & T. Leino, Finnish Institute of Occupational Health, Finland

**Use of Information Technology in the Retail and Wholesale Trade, and the Quality of Work Life**  
K. Lindstrom & E. Kyla-Setälä, Finnish Institute of Occupational Health, Finland

**The Fatal Choice: Machine Competence or Human Control**  
D.W. Haines, George Mason University, USA

**The Use of Computers on the European Work Floor and the Quality of Working Life**  
F. Andries & P.G. W. Smulders, TNO Work & Employment, The Netherlands

**Company Broad ICT's and Production System Practiced: Consequences for Occupational Health**  
K. Kraan & G. van Sloten, TNO Work & Employment, The Netherlands

# nical Sessions

WEDNESDAY • 8–10 am continued

## 3-dimensional User Interfaces

### Bayou 4

*Chairs: Doug Bowman, Virginia Tech, USA & Kay M. Stanney, University of Central Florida, USA*

#### **Vibrotactile Feedback for Handling Virtual Contact in Immersive Virtual Environments**

R.W. Lindeman, George Washington University, USA & J.N. Templeman, Naval Research Lab, USA

#### **Guided Design and Evaluation of Distributed Collaborative 3D Interaction in Projection Based Virtual Environments**

G. Goebels, German National Research Center for Information Technology, Germany; V. Lalioti, University of Pretoria, South Africa; & T. Mack, German National Research Center for Information Technology, Germany

#### **3D Interaction and Visualization in the Industrial Environment**

S. Goose, I. Gruber, S. Sudarsky, K. Hampel, B. Baxter & N. Navab, Siemens Corporate Research, Germany

#### **Interfacing Tangible Input Devices to a 3D Virtual Environment for Users with Special Needs**

S.V. Cobb, T. Starmer, R.C. Cobb, S. Tymms, T.P. Pridmore & D. Webster, University of Nottingham, United Kingdom

#### **A Study of the Relative Importance of Visual Cues in Desktop Virtual Environments**

S. Morar, R.D. Macredie & T. Cribbin, Brunel University, United Kingdom

## Human, Computer and Environment

### Emerald Room

*Chair: Jerzy Charytonowicz, Wroclaw University of Technology, Poland*

#### **Towards Sustainable Housing—Ergonomics of Housing Stock Management Organization as Dematerialization Factor**

J. Charytonowicz, Wroclaw University of Technology, Poland & L. Swiatek, Technical University of Szczecin, Poland

#### **Assessment of the Working Computer Systems in the Enterprise Made by Computer Operators**

J. Olszewski, University of Economics, Poland

#### **Assessment of Visual Fatigue in VDT Operators**

L. Borodulin-Nadzieja, M. Sobreszczanska, E. Salomon & A. Janocha, University School of Medicine, Poland

#### **Automatic Balance in Computer Terminal Workers**

A. Janocha, E. Salomon, L. Borodulin-Nadzieja & M. Sobieszczanska, University School of Medicine, Poland

#### **Analysis of Work Tasks for Recruiting Employees with Limbs Impairment**

E. Gorska, Warsaw University of Technology, Poland

#### **Ergonomic and Quality Aspects in Assembly**

A. Kawecka-Endler, Technical University of Poznan, Poland

## Collective Intelligence via Robotic Communication

### Wildcatter Room

*Chair: Kohji Kamejima, Osaka Institute of Technology, Japan*

#### **Bridging Physical and Media Spaces in Knowledge Intensive Work Environment**

K. Sato, Wakayama University, Japan

#### **Collective Intelligence via Robotic Communication—From the Viewpoint of Computational Human Vision Modeling**

K. Kamejima, Osaka Institute of Technology, Japan

#### **Collective Intelligence via Robotic Communication—From the View Point of Computer Aided Education**

H. Nakayasu, Konan University, Japan

#### **Collective Intelligence via Robotic Communication—From the View Point of Public Acceptance of Robotics**

L. Oestreicher, Royal Institute of Technology, Sweden

#### **Collective Intelligence via Robotic Communication—From the View Point of Social Safety Systems**

T. Hamada, Hitachi, Ltd., Japan

#### **Collective Intelligence via Robotic Communication—From the View Point of Robotic Networks**

P. Coppin, M. Wagner & J. Li, Carnegie Mellon University, USA

## Web Site Designers 1

### Bayou 3

*Chair: TBA*

#### **How do Designers of Web Sites Take into Account Constraints and Ergonomic Criteria?**

N. Bonnardel & A. Chevalier, University of Provence, France

#### **Task-Based Analysis of Internet Search Output Fields**

R. Lergier & M. Resnick, Florida International University, USA

#### **Signs of Trust**

K. Karvonen, Helsinki University of Technology, Finland

#### **An Analysis of Technology Leaders' Attitude Toward Virtual Cyberspace Technology**

S.M. North, Clark Atlanta University, USA & M.M. North, Kennesaw State University, USA

#### **The Effect of Changes in Information Access Times on Hypertext Choices**

D.S. McCrickard, Virginia Tech, USA

#### **Matching Navigational Aids to the Task**

S. Padovani, Loughborough University, United Kingdom & M.C. Ziefle, RWTH Aachen, Germany

#### **The Influence of Language Proficiency on Web Site Usage with Bilingual Users**

W.G. Hayward & K.-K. Tong, Chinese University of Hong Kong, Hong Kong

#### **Visualising and Animating Visual Information Foraging in Context**

C. Chen & T. Cribbin, Brunel University, United Kingdom

## Virtual Systems

### Loyola Room

*Chair: Seongil Lee, Sungkyunkwan University, Korea*

#### **Realising Virtual Trading: What Price Virtual Reality?**

S. Maad & M. Beynon, University of Warwick, United Kingdom & S. Garbaya, Lab de Robotique de Paris, France

#### **Test Bed System of Image-Based Rendering as VRML Extension**

H. Kim, S. Kim, B. Koo, B. Choi & W. Oh, Virtual Reality Center, Korea

#### **Four Ways of "Being There": Combined Effects of Immersion and Pictorial Realism on the Sense of Presence in Virtual Environments**

J. Hofmann, DaimlerChrysler, Germany & H. Bubb, Technical University of Munich, Germany

#### **Subjective Intensity Scaling to Vibrotactile Stimulation on the Hand for a Glove System**

S. Lee & H.S. Lee, Sungkyunkwan University, Korea

#### **Empirical Studies on an Augmented Reality User Interface for a Head Based Virtual Retinal Display**

O. Oehme, S. Wiedenmaier, L. Schmidt & H. Luczak, Aachen University of Technology, Germany

#### **Influence of Different Visualization Techniques of 3D Free-Form Surfaces on Perceptual Performance in a CAVE**

R. Breining, W. Bauer, A. Gaggioli & H. Widloither, Fraunhofer IAO, Germany

#### **The Virtual Process Visualization Method for Industrial Process Control**

C. Wittenberg, Siemens AG, Germany

# Parallel Tech

WEDNESDAY • 8–10 am continued

## UAHCI

## EP&CE

### Universal Design

### Assistive Technologies 1

### Education and Training 1

### Linguistic and Cultural Differences

### Contributions of Basic Research in Cognitive Psychology to Human Factors and HCI

#### Bayou 1

#### Mayor's Chamber

#### Creole Room

#### Tulane Room

#### Bayou 2

*Chair: Constantine Stephanidis, Foundation for Research and Technology-Hellas, Greece*

*Chair: Magnus Magnusson, Karlstad University, Sweden*

*Chair: Reinhard Oppermann, German National Research Center for Information Technology, Germany*

*Chair: Theresa O'Connell, USA*

*Chair: Robert W. Proctor, Purdue University, USA*

#### How to Utilize Task Taxonomies for the Design of Web Applications "For All"

C. Stary, University of Linz, Austria

#### Investigating the Parameters of Force Feedback Assistance for Motion-Impaired Users in a Selection Task

P. Langdon, S. Keates, J. Clarkson & P. Robinson, University of Cambridge, United Kingdom

#### Subjectivity and Cultural Conventions: The Role of the Tutor Agent in the Global Network

P. Bussotti, G. Vannuccini, D. Calenda, F. Pirri & D. Giuli, University of Florence, Italy

#### Engineering Multilingual Internet Commerce

A. Lehtola, J. Tenni, K. Taveter, T. Kapyla, P. Silvonen & K. Jaaranen, VTT Information Technology, Finland

#### Building Bridges from Theory to Practice

S. Dumais & M. Czerwinski, Microsoft Research, USA

#### The Marriage of Activity Theory and Human-Computer Interaction: Understanding Practice to Develop Computer Systems for Workgroups

J. Klenner-Moore, King's College, USA

#### Early Experiences Using Visual Tracking for Computer Access by People with Profound Physical Disabilities

J. Gips, Boston College, USA; M. Betke, Boston University, USA; & P. DiMattia, Boston College, USA

#### Personalised and Contextualised Content Delivery for Mobile Users

G. O'Hare, University College Dublin, Ireland

#### Ambiguity Problems in Human-Computer Interaction

I. Kopecek, K. Pala, Masaryk University, Czech Republic; & M. Stranakova-Lopatkova, Charles University, Czech Republic

#### The Effectiveness of Visual vs. Auditory Cues in Visual Search Performance: Implications for the Design of Virtual Environments

T.Z. Strybel & D.L. Guettler, California State University Long Beach, USA

#### Standards in Mainstream and Adaptive Interface Design Required for Efficient Switch User Access

D. Colven & A. Lysley, ACE Centre Advisory Trust, United Kingdom

#### A Study of HCI for People in Japan with Communication Disorders

T. Ifukube, Hokkaido University, Japan

#### Open Adaptive Hypermedia: An Approach to Adaptive Information Presentation on the Web

N. Henze, University of Hannover, Germany

#### Design and Implementation of Universal End-User Commands, Interfaces and Interactions

B. Patil, K. Maetzel & E. Neuhold, German National Research Center for Information Technology, Germany

#### Stimulus-Response Compatibility in Interface Design

K.-P.L. Vu & R.W. Proctor, Purdue University, USA

#### Designing Internet-based Systems and Services for All: Problems and Solutions

P. Koutsabasis, J. Darzentas, University of the Aegean, Greece; J. Abascal, The University of the Basque Country, Spain; T. Spyrou & J. Darzentas, University of the Aegean, Greece

#### Improving Access for Elderly and Severely Disabled Persons: A Hybrid Adaptive and Generic Interface

L. White, J. Jerrams-Smith, University of Portsmouth, United Kingdom; & D. Heathcote, Bournemouth University, United Kingdom

#### Knowledge and Media Engineering for Distance Education

H. Kritzenberger & M. Herczeg, University of Luebeck, Germany

#### Design and the Cultural Significance in International Communication

R.K. Bradley, Slippery Rock University, USA

#### Cognition in a Dynamic Environment

F.T. Durso, J.M. Crutchfield & P.J. Batsakes, University of Oklahoma, USA

#### A Practical Approach to Design for Universal Access: The Information Point Case Study

S. Keates, P. Langdon, J. Clarkson & P. Robinson, University of Cambridge, United Kingdom

#### Bridging the Gap Between Design for All and Assistive Devices

J. Abascal, The University of the Basque Country, Spain; & A. Civit, University of Seville, Spain

#### Easily Access to Technical Information of the Old Construction Handbooks by a WBI System-M.I.C.R.A.

R. Corrao, A. De Vecchi & S. Colajanni, University of Palermo, Italy

#### Localisation and Linguistic Anomalies

G. Weir, University of Strathclyde, United Kingdom; G. Lepouras, University of Athens, Greece

#### Keeping Up with Busy schedules: Using Personal Data Assistants (PDAs) Effectively

D. Herrmann & C. Yoder, Indiana State University

#### Re-thinking HCI in Terms of Universal Design

D. Akoumianakis & C. Stephanidis, Foundation for Research and Technology-Hellas, Greece

#### VIKI: A Virtual Keyboard Interface for the Handicapped

B. Liffick, Millersville University, USA

#### Contextualised Information Systems for an Information Society for All

R. Oppermann & M. Specht, German National Research Center for Information Technology, Germany

#### Some Impacts of International Web Access and Agent Technology on the Evolution of User-Centered Design: A Study in Universal Access

T. O'Connell, USA

#### Automating Measurements of Team Condition through Analysis of Communication Data

P.A. Kiekel, N.J. Cooke, P.W. Foltz & S.M. Shope, New Mexico State, USA

# nical Sessions

WEDNESDAY • 10:30 am–12 pm

WED • 10:30 am – 12 pm

**Work with Visual Display Unit (VDU): Health Consequences**

**Wildcatter Room**

*Chair: Arne Aaras, Alcatel STK ASA, Norway*

**Supporting the Forearms in a Neutral Position when Working with Keyboard and Mouse: Laboratory and Field Studies**

A. Aaras, Alcatel STK ASA, Norway; O. Ro, Premed AS, Norway & G. Horgen, Buskerud College, Norway

**Will Visual Discomfort Among VDU-Users Change in Development When Moving from Single Vision Lenses to Special Designed VDU-Progressive Lenses?**

G. Horgen, Buskerud College, Norway; A. Aaras, Alcatel STK ASA, Norway & M. Thoresen, University of Oslo, Norway

**An Approach to Providing Ergonomic Intervention in VDU Workplaces**

M. Dainoff, Miami University, USA

**Health Effects from Indoor Air Particles in the Office Environment. Experiences from Field Intervention Trials**

K. Skyberg, K. Skulberg & K. Kruse, National Institute of Occupational Health, Norway & F. Levy, Ullevål University Hospital, Norway

**Challenging Conventional Wisdom in Office Ergonomics: The Importance of Research and Standards in Guiding Practice**

T. Albin, USA

**Task Modelling and HCI Generation**

**Creole Room**

*Chair: Mourad Abed, University of Valenciennes, France*

**Towards an Interactive Systems Design Based on the User Task with Petri Nets**

D. Tabary, University of Valenciennes, France; R. Bastide & P. Palanque, Université Toulouse 1, France & M. Abed, University of Valenciennes, France

**Specification and Control of Man-Machine Dialog in E-Technologies**

A. Buisine, Defense et Telecom, France & E. Ricard, MATRA Systemes & Information, France

**Proposition for an Automatic Design of SOHTCO Interfaces from Cooperative Process Simulation**

E. Adam, LAMIH, France; D. Tabary & M. Abed, University of Valenciennes, France

**Agents Oriented Specification of Interactive Systems**

H. Maoudji & H. Ezzedine, University of Valenciennes, France & A. Peninou, LAMIH, France

**Contribution of the Petri Nets and the Multi Agent System in HCI Specification**

M. Riahi & F. Moussa, University of Tunis, Tunisia

**The Task-to-Presentation-Dialog Mapping Problem**

Q. Limbourg & J. Vanderdonck, Université catholique de Louvain, France

**Wearable Computing**

**University Room**

*Chair: Jeanette Allen, Spelman College, USA*

**Sensory Augmented Wearable Computing and its Potential for Human-Computer Interaction**

B. Schiele, Inst. für Wissenschaftliches Rechnen, Germany

**Symbiotic Interfaces for Wearable Face Recognition**

B. Singletary & T. Starner, Georgia Institute of Technology, USA

**Experiments in Interaction Between Wearable and Environmental Infrastructure Using the Gesture Pendant**

D. Ashbrook, J. Auxier, M. Gandy & T. Starner, Georgia Institute of Technology, USA

**Conversational Speech Recognition for Creating Intelligent Agents on Wearables**

B.A. Wong & T.E. Starner, Georgia Institute of Technology, USA

**Modeling Mobility: Exploring the Design Space for Enabling Seamless Ongoing Interaction for Mobile CSCW**

M. Wiberg, Umeå University, Sweden

**Work Process Knowledge and Learning Organizations**

**Orleans Room**

*Chair: Sebastiano Bagnara, University of Siena, Italy*

**Work Process Knowledge and Industrial Relations Culture**

W. Kruse, sfs-Sozialforschungstelle Dortmund, Germany

**Working with New Technology in the Service Sector**

N. Boreham, University of Manchester, United Kingdom

**Possibilities and Problems for Stimulating Work Process Knowledge in Companies**

M. Fischer, University of Bremen, Germany

**Enforcing Benefits of Workplace Learning in an Era of Temporary Jobs**

M. Mariani, Multimedia Communication Lab, Italy

**The Development of Work Process Knowledge of Workers of the Chemical Industry through Organisational Learning in a Chemical Enterprise**

P. Roeben, University of Bremen, Germany

**Post Wimp HCI**

**Bayou 4**

*Chair: Monica Bordegoni, University of Parma, Italy*

**A Perspective on Intelligent Information Interfaces for Mobile Users**

T. Rist, German Research Center for Artificial Intelligence, Germany

**Post-Wimp Interactive Systems: Modeling Visual and Haptic Interaction**

P. Mussio, Università di Brescia, Italy; U. Cugini & M. Bordegoni, Università di Parma, Italy

**Kansei Interaction: Cognitive and Subjective Aspect of Human Computer Interaction**

T. Kato, Chuo University, Japan

**The Sentient Map as a New Paradigm for Human-Computer Interface**

S.-K. Chang, University of Pittsburgh, USA

**Continuous Interaction HCI**

G. Faconti, Istituto CNUCE, Italy

# Parallel Tech

WEDNESDAY • 10:30 am–12 pm continued

## Diversity and Cultural Issues of Information Technology

### Rex Room

*Chair: Pascale Carayon, University of Wisconsin-Madison, USA*

#### The Changing Face of America: Culture and Diversity and its Impact with Information Technology

L. Newman, University of Wisconsin-Madison, USA

#### Transporting the Elephant: Women of Color and the Selection of IT Academic Programs

C. Brooks, Bowie State University, USA

#### Technology Revolution and Ergonomics Evolution: A Case for Cultural Synergy

T. Sen, AT&T, USA

#### Turnover and Retention of the Information Technology Workforce: The Diversity Issue

P. Carayon, M.C. Haims & S. Kraemer, University of Wisconsin-Madison, USA

#### Building Cultural Models for Adaptive Interaction: On the Applicability of User Modeling Approaches

F. Yetim, University of Konstanz, Germany

## Rethinking the Home at Converging and Embedded Technologies

### Mayor's Chamber

*Chair: Gunilla Bradley, Umea University/Mid Sweden University, Sweden*

#### Theoretical Perspective on the Impact of Information and Communication Technology (ICT) on our Psychosocial Life Environment

G. Bradley, Umea University/Mid Sweden University, Sweden

#### The Home as a Virtual and Physical Space--Experiences from USA and South East Asia

L. Bradley, SOUL Business Innovation, Sweden & G. Bradley, Umea University/Mid Sweden University, Sweden

#### VR, Professional Skills, and Creativity in the Future Home

J. Waterworth, Umea University, Sweden

#### Knowledge Management in the Future Home

A. Hagerfors, Lulea University of Technology, Sweden

#### Smart Homes in Japan

M. Nagamachi, Kure Institute of Technology, Japan

## Cross-cultural User Interface Design: What, So What, Now What?

### Gold Room

*Chair: Aaron Marcus, Aaron Marcus & Associates, Inc., USA*

#### Cross-Cultural User-Interface Design

A. Marcus, Aaron Marcus & Associates, Inc., USA

#### More than Content: Web Graphics, Crosscultural Requirements, and a Visual Grammar

E.W. Gould, Renssalaer Polytechnic Institute, USA

#### Cross-Cultural User Interface Design: What, So What, Now What? Four Facets of Cultural Diversity

M. Kurosu, Shizuoka University, Japan

## Content Preparation Requirements and Knowledge Elicitation

### Bayou 2

*Chair: Robert Proctor, Purdue University, USA*

#### Strategies for Designing Usable Interfaces for Internet Applications

N.J. Lightner, University of South Carolina, USA

#### Enabling Universal Access—Minimum Requirements for Content Preparation

H. Weber & C. Stephanidis, ICS/FORTH, Greece

#### Industry Design Practices: Differences in the Approach to Design Conceptualization

K.M. Stanney, University of Central Florida, USA

#### Bringing System Requirements into Focus: The Power of Knowledge Structures

S.P. Gott, University of Texas Health Center, USA

#### A Meaning Processing Approach to Analysis and Design

J.M. Flach, Wright State University, USA

## Adaptation

### Emerald Room

*Chair: Martin Helander, Nanyang Technological University, Singapore*

#### Towards Automatic Adaptation of Data Interfaces

C. Knight & M. Munro, University of Durham, United Kingdom

#### The Design of an Adaptive Web Tool to Support Human Information Seeking and Retrieval Strategies: Some Theoretical Implications

F. Rizzo, University of Siena, Italy

#### Consensus Based Adaptive User Interfaces for Universal Access Systems

J. Sobacki & N.T. Nguyen, Wroclaw University of Technology, Poland

#### AVANTI: A Universally Accessible Web Browser

A. Paramythis, A. Savidis & C. Stephanidis, Foundation for Research and Technology-Hellas, Greece

#### Interface Design for Mass-Customization in E-Commerce

M. Helander, Nanyang Technological University, Singapore; & H. Khalid, University Malaysia Sarawak, Malaysia

# nical Sessions

WEDNESDAY • 10:30 am–12 pm continued

## UAHCI

### Assistive Technologies 2

#### Bayou 3

*Chair: Michael Cooper, CAST, USA*

#### Voice and Display Interface to Capture Elderly and Disabled Person's Physical Problems

T. Takeshita, T. Takahashi, Y. Nagasaka & M. Ono, Chubu University, Japan

#### A Barrier Free System for the Next Generation

K. Tsuchiya, IBM Japan Ltd., Japan; Y. Tachibana, IBM Japan, Japan; M. Shojia & S. Iizuka, IBM Japan Ltd., Japan

#### A Taxonomical Approach to Special Needs Design in HCI

W. Edmondson, University of Birmingham, United Kingdom

#### Predictive and Highly Ambiguous Typing for a Severely Speech and Motion Impaired User

M. Kuehn & J. Garbe, Universitaet Koblenz-Landau, Germany

#### From a Specialised Writing Interface Created for the Disabled, to a Predictive Interface for All: The VITIPI System

P. Boissiere & D. Dours, IRIT-UPS-CNRS, France

### Public Services

#### Explorer's Room

*Chair: Pier Luigi Emiliani, CNR-IROE, Italy*

#### Accessibility of Government Services: A Macroeconomics Perspective

A. Arnold & D. Beentjes, Centre of Expertise Foundation, The Netherlands

#### Achieving Universal Access for European E-Government Applications—A Case Study of Two European Projects in the Field of E-Voting and of Smartcards

A. Galetsas, European Commission, Belgium; S. Brunessaux, MATRA Systems & Information, France; & S. Hoernschmeyer, Zuendel & Partner, Germany

#### Evaluating the Usability of Brazilian Government Web Sites

E.M. Ferraz Barboza, E.M. de Almeida Nunes & N. Kneipp Sena, Brazilian Institute for Information on Science and Technology, Brazil

#### A Multicultural Perspective on Digital Government Usability

S. Becker & F. Crespo, Florida Institute of Technology, USA

#### Anyone, Anywhere Access to Community-Oriented Services

P.L. Emiliani, CNR-IROE, Italy

### Rehabilitation

#### Tulane Room

*Chair: Margherita Antona, Foundation for Research and Technology-Hellas, Greece*

#### Objective and Quantitative Evaluation Measure on Ability of Obstacle Sense by Using Acoustical VR System and Body Movement Measuring Device in Rehabilitation for the Visually Impaired

Y. Seki, National Institute of Advanced Industrial Science and Technology, Japan; & K. Ito, Future University-Hakodate, Japan

#### Meeting Rehabilitation Goals with a Multi-Sensory Human Computer Interface: A Case Study

M. Tracey & C. Lathan, AnthroTronix, Inc. & The Catholic University of America, USA

#### Virtual Reality for Persons with Central Nervous System Dysfunction: Assessment and Treatment in the Information Society for All

A.A. Rizzo & G. Buckwalter, University of Southern California, USA; M. Schultheis, Kessler Medical Rehabilitation Research & Education Corp., USA; U. Neuman, University of Southern California, USA; T. Bowerly, Fuller Graduate School of Psychology, USA; L. Kim, M. Thiebaut & C. Chua, University of Southern California, USA

#### Kinematic Profiling in Object Location and Line Drawing Tasks by Visuo-Spatial Neglect Subjects

R. Guest, M. Fairhurst, University of Kent, United Kingdom; & J. Potter, Nunnery Fields Hospital, United Kingdom

#### A Tele-Nursing System Using Virtual Locomotion Interface

T. Miyasato, ATR Media Integration and Communications Research Laboratories & Tokyo Institute of Technology, Japan

### Non-visual Interaction 1

#### Loyola Room

*Chair: Marilyn Tremaine, Rutgers University, USA*

#### Universal Access of DOS-like Information Systems

N. Soong, Villanova University, Pennsylvania, USA

#### An Annotation Editor for Non-visual Web Access

T. Sakairi & H. Takagi, IBM Research, Tokyo Research Laboratory, Japan

#### One-Dimensional User Interface for Retrieving Information from the Web for the Blind

C. Asakawa & H. Takagi, IBM Japan Ltd., Japan

#### Hierarchical Web Frame Navigation for the Visually Impaired

T. Ebina, Communications Research Laboratory, Japan; & T. Miyake, Tsukuba College of Technology, Japan

#### Sound News: An Audio Browsing Tool for the Blind

C. Williams, Drexel University, USA; & M. Tremaine, Rutgers University, USA

## EP&CE

### Looking at the Human Aspects of Technology Transfer from the Aviation Industry to Other Applications

#### Bayou 1

*Chairs: Don Harris, Aerosystems International, United Kingdom & Carlo Cacciabue, Institute for System, Informatics and Safety, Italy*

#### I Didn't Do It: Accidents of Automation

M.S. Young & N.A. Stanton, Brunel University, United Kingdom

#### Air-to-Ground, Ground-to-Air: Warfare or Technology Transfer?

D. Harris, Aerosystems International, United Kingdom

#### From Fly-By-Wire to Drive-By-Wire

N.A. Stanton & M. Young, Brunel University, United Kingdom

#### Using Aerospace Technology to Improve Obstacle Detection under Adverse Environmental Conditions for Car Drivers

A. Amditis, National Technical University of Athens, Greece; L. Andreone, Fiat Research Centre, Italy & E. Bekiaris, National Technical University of Athens, Greece

# Parallel Tech

WEDNESDAY • 1:30–3 pm

## Internationalization and Localization 2

### Rex Room

Chair: *Nuray Aykin, AT&T, USA*

#### So, You Are Taking Your Products to the International Markets!

A. Syed, Eastman Kodak Company, USA

#### International Standards: Their Scope, Quality, and Impact

H.E. Blanchard, AT&T Labs, USA

#### Developing Web Experiences for International Visitors

D.A. DePalma, Idiom, Inc., USA

#### Children and E-Commerce: Challenges and Opportunities

J. Clarke, SpectraCom/Circle 1 Network, USA

## Ergonomic Intervention Concepts: Success Factors

### Gold Room

Chair: *Barbara G.F. Cohen, Internal Revenue Service, USA*

#### Using Participatory Ergonomics to Develop a Workshop on Computer Ergonomics for Young Knowledge Workers

M. Robertson, Liberty Mutual Research Center, USA; B.C. Amick III, University of Texas, USA; N. Hupert, Cornell Medical School, USA; E. Cha, Harvard University, USA; M. Pellerin, Liberty Mutual Research Center, USA & J. Katz, Brigham and Women's Hospital/Harvard Medical School, USA

#### Training and Learning Through the Process of Implementing a Work Organization Intervention in Office/Computer Work

M.C. Haims & P. Carayon, University of Wisconsin-Madison, USA & N.G. Swanson, NIOSH, USA

#### Hiding Ergonomics in the Applesauce: Incorporating Ergonomics Training into Existing Business Activities

N.L. Larson, 3M US Corporate, USA

#### Organizational Factors in the Training and Development of Ergonomic Problem Solving Teams

M.J. Dainoff, Miami University, USA; B.G.F. Cohen, Internal Revenue Service, USA & M. Dainoff, Marvin J. Dainoff Associates, Inc., USA

#### Introducing Ergonomics to the Industrially Developing Countries

H. Shahnavaz, Lulea University, Sweden

## The Social and Affective Elements of Human-computer Interaction

### Orleans Room

Chair: *Cynthia L. Corritore, Creighton University, USA*

#### The Galvactivator: A Glove that Senses and Communicates Skin Conductivity

R.W. Picard & J.C. Scheirer, MIT, USA

#### Homepages with Emotions

J. Lee, J. Kim & D. Choe, Yonsei University, Korea

#### Trust in the Online Environment

C. Corritore & B. Kracher, Creighton University, USA & S. Wiedenbeck, Drexel University, USA

#### Intrinsic Motivation, Ease of Use and Usefulness Perceptions as Mediators in Computer Learning

S. Wiedenbeck, Drexel University, USA & S. Davis, University of Nebraska at Omaha, USA

#### Cross-Cultural Studies of the Computers are Social Actors Paradigm: The Case of Reciprocity

Y. Katagiri, ATR MI&C, Japan; C. Nass, Stanford University, USA & Y. Takeuchi, ATR MI&C, Japan

## Capturing Information from the User Environment

### Bayou 4

Chair: *Martha Crosby, University of Hawaii, USA*

#### Using a Brain-Computer Interface in Virtual and Real Worlds

J.D. Bayliss, University of Rochester, USA & B. Auernheimer, California State University at Fresno, USA

#### PODS: Interpreting Spatial and Temporal Environmental Information

E. Biagioni, University of Hawaii, USA

#### ADAPT: Predicting User Action Planning

S.M. Doane, Mississippi State University, USA

#### Capturing Students' Note-Taking Strategy with Audio Recording Techniques

M.E. Crosby, M.K. Iding & T. Speitel, University of Hawaii, USA

#### Predicting User Task with a Neural Network

L. King, University of Hawaii, USA

#### Student Usage of a Statistical Web-DB

J. Nordbotten & S. Nordbotten, University of Bergen, Norway

## Design Using Virtual Reality

### University Room

Chairs: *Roy Davies, Lund University, Sweden & Kay M. Stanney, University of Central Florida, USA*

#### Using Alternative Realities as Communication Aids in the Participatory Design of Work Environments

R.C. Davies, E. Hornyanszky-Dalholm, B. Rydberg-Mitchell & T. Wikstrom, Lund University, Sweden

#### Design, Virtual Reality and Peircean Phenomenology

J.-M. Orliaguet, Chalmers Medialab, Sweden

#### Computer Games in Collaborative Architectural Design

P. Frost, M. Johansson & P. Warren, Interactive Institute, Sweden

#### Development of a Collaborative Environment for Finite Element Simulation

M.K. Abdul-Jalil & C.L. Bloebaum, State University of New York at Buffalo, USA

#### Latency Compensation in Head Tracked Virtual Environment: Motion Component Influences on Predictor Discriminability

B.D. Adelstein & S.R. Ellis, NASA Ames Research Center, USA & J.Y. Jung, University of California Berkeley, USA

# nical Sessions

WEDNESDAY • 1:30–3 pm continued

**Computer Usability: Physiological, Psychological and Ergonomic Approach**

**Creole Room**

*Chair: Shin'ichi Fukuzumi, NEC Corporation, Japan*

**Effects of Computer Freezes on Physiological Measures**

K. Suzuki, Hosei University, Japan

**A Study of Ergonomic Requirements for Japanese Character Sizes and Matrixes on Computer Displays**

R. Yoshitake & M. Satoh, IBM Japan, Japan

**A New Index for Characterizing the Respiratory Heart Rate Variability**

H. Mizuta & Y. Aoki, Hosei University, Japan & K. Yana, Hosei University Research Institute, USA

**Evaluation of Keyboards for Personal Computers—Performance, Subjective Evaluation and EMG Study**

S. Fukuzumi, NEC Corporation, Japan & M. Kobayashi, NEC Design Ltd., Japan

**On the Usability of User Manuals**

L. Groh & M. Bocker, Siemens Information & Communications Mobile, Germany

**Semantic Lenses: Exploring Large Information Spaces More Efficiently**

C. Rathke, M.A. Wischy & J. Ziegler, Fraunhofer IAO, Germany

**Labor Perspectives on Ergonomics and Occupational Stress**

**Mayor's Chamber**

*Chair: David LeGrande, Communications Workers of America, USA*

**Panelists:**

D. LeGrande  
D. Alexander  
L.O. Anes

**Macroergonomics 1**

**Explorer's Room**

*Chair: Paul Allie, Steelcase Inc., USA*

**Leveraging the Knowledge of an Ergonomics Community of Practice**

P. Allie, Steelcase Inc., USA

**Psychosocial Issues in Call Center Work**

P. Huuhtanen, T. Ristimäki & T. Leino, Finnish Institute of Occupational Health, Finland

**Delighting the Customer—Merlin (Helicopter) Mk1: A Candid Human Factors Case Study**

M. Fuchs, Lockheed Martin ASIC, United Kingdom

**Reading Financial News from PDA and Laptop Displays**

J. Laarni & I. Kojo, Helsinki School of Economics & Business Administration, Finland

**Ergonomic Improvements of New E-Commerce and Conventional Retail Shopping Systems from Users' Points of View in Malaysia**

R.N. Sen, C. Ifarn, M.I. Ahmad, Multimedia University, Malaysia

**Creativity Support in System and Process Design**

M. Wissen & J. Ziegler, Fraunhofer IAO, Germany

**Hybrid Modeling of Team-Oriented Processes**

P. Thies & J. Ziegler, Fraunhofer IAO, Germany

**Input Devices**

**Wildcatter Room**

*Chair: Kwan Suk Lee, Hong-Ik University, Korea*

**Experimental Evaluation of Kana Key Layouts in the Software Keyboard for Touch Panels and Their Optimization**

J. Qiu, Kyoto Institute of Technology, Japan

**Improvements in Ergonomics and Safety by Implementing CC Switch to Touch Screen Displays Based on User Survey**

M. Mamiya, T. Nishiki, Y. Tsuji, A. Okamoto & T. Fujita, IDEC IZUMI Corporation, Japan

**A Study on the Design of Wristbands for Mouse Users**

K.S. Lee & K.T. Shim, Hong-Ik University, Korea

**Plant Supervisory Systems**

**Tulane Room**

*Chair: TBA*

**Construction of Plant Supervisory Systems Using the Automatic Generation of Supervisory Pictures from Equipment Management Diagrams**

H. Nakata & T. Kojima, Mitsubishi Electric Corporation, Japan

**A Simulation Approach: Comparative Assessment of Knowledge, Skills and Abilities in Autonomous Production Cells**

R. Reuth, C. Schlick & H. Luczak, RWTH Aachen, Germany

**The Design of Process Schedule for Enterprise Automation Based on Virtual Reality**

T. Wang, M. Fei & G. He, Shanghai University, P.R. China

**VISOR—Towards a Three-Dimensional Shop Floor Visualisation**

G. Zuelch & S. Stowasser, University of Karlsruhe, Germany

**User-Oriented Definition of Branch-Spanning Building Blocks for Industrial Process Control**

T. Komischke, Siemens AG, Germany

# Parallel Tech

WEDNESDAY • 1:30–3 pm continued

UAHCI

EP&CE

**Application of Content Preparation to the Web**

**Access to the Physical Environment**

**Socially Sustainable HCI-design**

**Cognitive Man-machine Cooperation**

**Bayou 2**

**Emerald Room**

**Bayou 1**

**Bayou 3**

*Chair: Robert Proctor, Purdue University, USA*

**Information Architecture of a Customer Web Application: Blending Content and Transactions**

M.W. Vaughan, K.M. Candland & A.M. Wichansky, Oracle Corporation, USA

**Designing and Evaluating a Web-Based Collaboration Application: A Case Study**

W. Zhu, Microsoft Corporation, USA

**E-Commerce User Interface Design for the Web**

L.J. Najjar, Viant, USA

**Design for Better Information Searching**

X. Fang & S. Xu, DePaul University, USA

**Increasing Access of Visually Disabled Users to the World Wide Web**

Y. Yang & M.R. Lehto, Purdue University, USA

*Chair: Jerzy Charytonowicz, Wroclaw University of Technology, Poland*

**Towards Appropriate Design Tools for Inclusive Kitchens**

K. Parker & X. Hongyan, National University of Singapore, Singapore

**MAGUS: Modelling Access with GIS in Urban Systems**

L. Beale, H. Matthews, P. Picton, University College Northampton, United Kingdom; & D. Briggs, Imperial College of Science, United Kingdom

**An International System for Quality Labelling from a User Perspective**

K. Fransson, Fransson Consulting Firm; & J. Rudling, TCO Development, Sweden

**Somatic Symptoms in Computer Terminal Workers**

E. Salomon, A. Janocha & L. Borodulin-Nadziejka, Medical University of Wroclaw, Poland

**Architectural Design in Virtual Media—"Holoouse Technique"**

J. Charytonowicz, Wroclaw University of Technology, Poland; & K. Sztajkowski, College of Art and Design, Poland

*Chair: Michael Pieper, German National Research Center for Information Technology, Germany*

**Social Work Student Meets Computer—A Curriculum for Integrated Education**

S. Goll, Evangelische Fachhochschule Hannover, Germany

**Bridging the Digital Divide: Case Study of Anti-Exclusion Measures in Ireland**

A. Donnelly, Trinity College Dublin, Ireland

**Creating Public Information Environments that Strengthen Citizen-Government Relationships: Building TIES for a Better Society**

G. Strong, S. Brummel Turnbull & K. Hebenstreit, US National Science Foundation, USA

**Evaluation and Training on Accessibility Guidelines**

C. Velasco, German National Research Center for Information Technology, Germany

**Sustainable Information Environments and Informed Sustainability**

M. Paetau & M. Pieper, German National Research Center for Information Technology, Germany

*Chair: Reiner Onken, Universitat der Bundeswehr-Munchen, Germany*

**The Cognitive Cockpit Project: Lessons Learnt from Proof-of-Concept Demonstration of Intelligent Pilot Aiding**

R. Taylor, DERA, United Kingdom

**Cognitive Flight-Deck Automation for Military Aircraft Mission Management**

A. Schulte, P. Stutz & W. Klockner, ESC Elektroniksystem- und Logistik GmbH, Germany

**Speech Recognition in the Joint Air Operations Center—A Human-Centered Approach**

D.T. Williamson, Air Force Research Lab, USA & T.P. Barry, Sytronics, Inc., USA

**Designing Dynamic Human-Machine Task Allocation in Air Traffic Control: Lessons Drawn from a Multidisciplinary Collaboration**

S. Debernard & J.-M. Hoc, University of Valenciennes, France

**Reference Driver Model for Cognitive Tutoring in a Driving Simulator**

U.v. Garrell & H.-J. Otto, Universitat der Bundeswehr-Munchen, Germany

# nical Sessions

WEDNESDAY • 3:30–5:30 pm

WED • 3:30–5:30 pm

## Internationalization and Localization 3

### Rex Room

Chair: *Nuray Aykin, AT&T, USA*

#### Using Crosscultural Theory to Predict User Preferences on the Web

E.W. Gould, Rensselaer Polytechnic Institute, USA

#### TBA

L. Anderson, Dell Computer, USA

#### Legal Issues Reconsidered: Do the Country Boundaries Matter Anymore?

N. Aykin, AT&T, USA

#### TBA

D. Johnston, Johnston & Associates, USA

#### Innovative Methods for Usability Evaluation—The Indian Experience

A.L. Chavan, Human Factors International Pvt. Ltd., India

#### Usability Triage for International Web Sites

K.A. Keough, 2Vox, USA & R.G. Bias, Austin Usability, USA

## Applied HCI Research

### Orleans Room

Chair: *Frank T. Conway, State Of Wisconsin, USA*

#### Iconic Visual Search Strategies: A Comparison of Computer Users with AMD Versus Computer Users with Normal Vision

J.A. Jacko, Georgia Tech, USA; I.U.Scott, University of Miami, USA; A.B. Barreto, Florida International University, USA; H.S. Bausch & J.Y.M. Chu, University of Wisconsin-Madison, USA & W.B. Fain, Georgia Tech, USA

#### Impact of IT-Training on Quality of Working Life

P.L.T. Hoonaker & P. Carayon, University of Wisconsin-Madison, USA; C. Korunka, University of Vienna, Austria & M. McEniry, University of Wisconsin-Madison, USA

#### Usability Methodology in the Development of an Online Community Network

K. Fedde & A. Taveira, University of Wisconsin-Whitewater, USA

#### Results of a Symptom Questionnaire on Selected Departments of Office Workers at a Large Teaching and Research Institute

C. Alvarado & M. Sesto, University of Wisconsin-Madison, USA

#### Results of a Symptom Questionnaire for an Office Population at a Large Teaching and Research Institution

M. Sesto & C. Alvarado, University of Wisconsin-Madison, USA

## Enabled by Design

### Gold Room

Chair: *Ing-Marie Jonsson, Stanford University, USA*

#### Designed for Enablement or Disabled by Design? Choosing the Path to Effective Speech Application Design

J. Lai, IBM Research, USA & S. Srinivasan, IBM Almaden Research Center, USA

#### Inclusive Design at the Royal College of Art (RCA)

R. Coleman & J. Myerson, The Royal College of Art, United Kingdom

#### When Non-Human is Better than Semi-Human: Consistency in Speech Interfaces

L. Gong, C. Nass, C. Simard & Y. Takhteyev, Stanford University, USA

#### Wireless Spaces: Enabling Technological Freedom and Creating Invisible Borders

A. Saulsbury, Sun Microsystems, USA & I.-M. Jonsson, Stanford University, USA

#### Context-Aware Mobile Phones: The Differences Between Pull and Push, Restoring the Importance of Place

P. Rankin, Phillips Research Labs, United Kingdom

#### Natural Interaction Using the Adaptive Agent Oriented Software Architecture (AAOSA)

B. Hodjat & M. Amamiya, Dejima Inc., USA

## Perception and Performance in Virtual Environments

### Bayou 3

Chair: *Vincent Duffy, Hong Kong University of Science and Technology, Hong Kong*

#### Perceptual and Performance Issues in the Integration of Virtual Technologies in Demanding Environments

E. Haas, US Army Research Lab, USA

#### Effects of Vection on the Sense of Presence in a Virtual Environment

M. Olsson & K. Vien, Linkoping University, Sweden; E. Ng & R. So, Hong Kong University of Science and Technology, Hong Kong & H. Alm, Linkoping University, Sweden

#### Comparing Perception of Safety in Virtual and Real Environments

F.F. Wu & V.G. Duffy, Hong Kong University of Science and Technology, Hong Kong

#### Impact of Dynamic Virtual and Real Objects on Perception of Hazard and Risk

P.P.W. Ng & V.G. Duffy, University of Science and Technology, Hong Kong

#### Determining the Impact of Task Complexity on Decision-Making and Retention in Virtual Industrial Training

G.T.C. Leung & V.G. Duffy, University of Science and Technology, Hong Kong

#### Considering Individual Differences in Perception and Performance in Virtual Environments

C.M. Duffy & V.G. Duffy, University of Science and Technology, Hong Kong

#### Haptic Cueing of a Visual Change-Detection Task: Implications for Multimodal Interfaces

H.Z. Tan, Purdue University, USA; R. Gray, Nissan Cambridge Basic Research, USA; J.J. Young & P. Irawan, Purdue University, USA

## HCI in Information Retrieval

### Bayou 4

Chair: *Xiaowen Fang, DePaul University, USA*

#### Modeling Interactive Information Retrieval (IR): An Information Seeking Approach

A. Spink, Penn State University, USA

#### Using Text Learning to Help Web Browsing

D. Mladenic, Carnegie Mellon University, USA

#### Culture Differences in Information Search

P.-L.P. Rau, Chung Yuan Christian University, Taiwan & Y.-Y. Choong, Ge Global Exchange Services, USA

#### Images as Indexes into a Personal Information Space

H. Lieberman, MIT, USA

#### Web Searching Behavior: Selection of Search Terms

X. Fang, DePaul University, USA

#### An Adaptive Agent for Web Exploration Based on Concept Hierarchies

S. Parent, B. Mobasher & S. Lytinen, DePaul University, USA

# Parallel Tech

WEDNESDAY • 3:30–5:30 pm continued

## Augmented Reality

### **Emerald Room**

*Chairs: Morten Fjeld & Helmut Krueger, ETH-Zurich, Switzerland*

### **Configurability and Dynamic Augmentation of Technology Rich Environments**

T. Binder & J. Messeter, The Interactive Institute, Sweden

### **An Interface for a Continuously Available, General Purpose, Spatialized Information Space**

R. Kooper & B. MacIntyre, Georgia Tech, USA

### **Augmented Reality and the Disappearing Computer**

N.A. Streitz, GMD-IPSI, AMBIENTE, Germany

### **Using Augmented Reality to Support Collaboration in an Outdoor Environment**

B.H. Thomas, University of S. Australia, Australia

### **Augmented Reality Approaches to Sensory Rehabilitation**

S. Weghorst, University of Washington, USA

## Human Factors Issues Associated with Virtual Environments 1

### **Explorer's Room**

*Chair: Kay M. Stanney, University of Central Florida, USA*

### **NeuroRehabilitation Using "Learning by Imitation" in Virtual Environments**

M.K. Holden, MIT, USA

### **Using Pinch Gloves™ for both Natural and Abstract Interaction Techniques in Virtual Environments**

D.A. Bowman, C.A. Wingrave, J.M. Campbell & V.Q. Ly, Virginia Tech, USA

### **Virtual Reality and Transfer of Learning**

M.M. North, J.R. Mathis, A. Madajewski, J.T. Brown & S.M. Cupp, Kennesaw State University, USA

### **Human Factors Capabilities and Limitations of Virtual Reality Technologies Applied to Military Purposes**

R. Breaux, Naval Air Warfare Center, USA

### **Presence in Altered Environments: Changing Parameters & Changing Presence**

R.C. Allen, University of Central Florida/Naval Air Warfare Center & M.J. Singer, U.S. Army Research Institute for Behavioral & Social Sciences, USA

### **Presence in Distributed Virtual Environments**

P. Commarford, M.J. Singer & J. Kring, U.S. Army Research Institute, USA

## Information Representation in Virtual and Augmented Realities

### **Mayor's Chamber**

*Chairs: S.J. Westerman, Aston University, United Kingdom & N. Stanton, Brunel University, United Kingdom*

### **What Kind of Reality? Matching Representation to the User's Needs**

R. Stammers, University of Leicester, United Kingdom

### **Constraint-based Immersive Virtual Environment for Supporting Assembly and Maintenance Tasks**

T. Fernando, L. Marcelino, & P. Wimalaratne, University of Salford, United Kingdom

### **A Study of Navigation Strategies in Spatial-Semantic Visualisations**

T. Cribbin & C. Chen, Brunel University, United Kingdom

### **Tool, Testbed or Sidetrack: Virtual Environments in Ergonomics?**

J.R. Wilson, University of Nottingham, United Kingdom

### **Virtuality in Human Supervisory Control**

N.A. Stanton, Brunel University; A.D. Roberts, M. Ashleigh & F. Xu, University of Southampton, United Kingdom

### **Augmented Reality in Museums and Art Galleries**

C. Baber, Kodak/The University of Birmingham, United Kingdom

### **Browsing Patterns in a Virtual Information Space Representation of a Document Database**

J. Collins, Aston University, United Kingdom & S.J. Westerman, University of Leeds, United Kingdom

## Interaction Technology for Affective Computing 1

### **Bayou 2**

*Chair: Shogo Nishida, Osaka University, Japan*

### **Visualization Techniques Producing Communication in the Creative Community: Self-Propagating Map with an Annual Ring Metaphor**

H. Noda & T. Asahi, NEC Corporation, Japan

### **An Interactive Search Framework Using a User's Kansei-based Selection History**

M. Akiyoshi & Y. Ichida, Mitsubishi Electric Corporation, Japan

### **Designing for Affective Interactions**

C. Reynolds & R.W. Picard, MIT Media Lab, USA

### **Interactive Arts as the Frontier of Future Communication Media—Learned Lessons from ATR MIC Installations**

K. Mase & R. Nakatsu, ATR-MIC, Japan

### **Mirror Agent: An Interface Agent that Mirrors and Supports User's Behaviors by Visualizing Gazing Lines**

T. Yamaguchi, T. Nakamura, W. Sunayama & M. Yachida, Nara National College of Technology, Japan

## Training and Help Systems

### **Loyola Room**

*Chair: TBA*

### **Supporting Learning and Instruction in Programming**

S. Davies, University of Hull, United Kingdom

### **Positive Affect and Flow Experience in Vocational Hypermedia Learning**

U. Konradt, University of Kiel, Germany

### **Integrating Real and Virtual Training Tools via a Graspable User Interface in Vocational Training: The Evaluation of a New Training Tool**

S. Grund & S. Grote, Swiss Federal Institute of Technology, Switzerland

### **Contextual Online Help: Elicitation of Human Experts' Strategies**

A. Capobianco & N. Carbonell, LORIA, France

### **An Intelligent and Distributed Virtual Training Environment**

A. Cohen, C. Chen & J. Kuljus, Brunel University, United Kingdom

### **Interactive and Multimedia Interfaces for Knowledge Management and Learning Systems: Enabling Self and Work Based Learning**

K. Samiotis, A. Poulymenakou & P. Zaharias, Athens University of Economics & Business, Greece

### **Development of a Computer-Based On-the-Job Training Test**

S.B. Morgan, Federal Aviation Administration, USA

### **"Tool-Expert" Development of a Knowledge-Based System for Design, Selection and Use of Non-Powered Hand Tools**

B. Kayis & N. Charoenchai, The University of New South Wales, Australia

# nical Sessions

WEDNESDAY • 3:30–5:30 pm continued

UAHCI

EP&CE

## Access to Information 1

## Health Telematics

## Education and Training 2

## Legal, Ethical and Social Issues

## Applied Eye Tracking Technology in Cognitive Ergonomics

### Bayou 1

### Bayou 1

### Creole Room

### Wildcatter Room

### Tulane Room

*Chair: Mauri Kaipainen, University of Art and Design Helsinki, Finland*

#### Electronic Kiosk Provision of Public Information: Toward Understanding and Quantifying Facilitators and Barriers of Use

K. Keeling, L. Macaulay, D. Fowler, P. McGoldrick & K. Vassilopoulos, University of Manchester, United Kingdom

#### Web Page Adaptation for Universal Access

J. Lopez & P. Szekely, University of Southern California, USA

#### Information Coverage—Incrementally Satisfying a Searcher's Information Need

E. Proper, Ordina Institute, The Netherlands; & T. van der Weide, University of Nijmegen, The Netherlands

#### Towards Generating Textual Summaries of Graphs

K. McCoy, S. Carberry, T. Roper, University of Delaware, USA; & N. Green, University of North Carolina at Greensboro, USA

#### Multimodal Spatial Querying: What People Sketch and Talk About

I. Schlaisich & M. Egenhofer, University of Maine, USA

#### Presenting Data as Similarity Clusters Instead of Lists. Data from Local Politics as an Example

M. Kaipainen, T. Koskeniemi, A. Kerminen, A. Raike & A. Ellonen, University of Art and Design Helsinki, Finland

*Chair: Ilias Iakovidis, European Commission, Belgium*

#### IS4ALL: Promoting Universal Design in Healthcare Telematics

C. Stephanidis, Foundation for Research and Technology-Hellas, Greece

#### Human Factors in the Design of Wireless Point-of-Care Medical Applications in U.S. Department of Defense (DoD) Settings

R. Sessions & J. Roller, Telemedicine and Advanced Technology Research Center, USA

#### Clinical Usability Engineering for Computer Assisted Surgery

A. Zimolong, K. Radermacher, Helmholtz-Institute for Biomedical Engineering, Germany; B. Zimolong, Ruhr-Universität Bochum, Germany; & G. Rau, Helmholtz-Institute for Biomedical Engineering, Germany

#### Smart Medical Applications Repository of Tools for Informed Expert Decision (SMARTIE)

J. Sancho, A. Dunbar, C. Diaz, J.A. Cobos, Fundacio IMIM, Spain; S. Clamp, C. Kirke, University of Leeds, United Kingdom; P. Papachristou, ATKOSoft S.A., Greece; J.E. Lauzan, Heinrich-Heine-Universität, Germany; C. Ohmann & H.-P. Eich, SEMA Group sae, Spain; J.-P. Thierry & M.G. Verdier, SYMBION, France; & C. Tristram, ETS Future Dessin, France

#### Evaluation in the Development of a Tele-Medical Training System

Y. Mohamad, German National Research Centre for Information Technology, Germany; & H. Tebarth, Klinik am Schlossgarten, Germany

#### Universal Access in Health Telematics—Some Factors that Influence the Design of Health Telematics Services

I. Iakovidis, European Commission, Belgium

*Chair: Giuliana Dettori, CNR-IMA, Italy*

#### Virtual Environments—Improving Accessibility to Learning?

S. Cobb, H. Neale, University of Nottingham, United Kingdom; & D. Stewart, Shepherd School, United Kingdom

#### Bridges for Learning—Language Training and Interaction Over a Distance

M. Magnusson, J. Soren Pettersson, Karlstad University, Sweden

#### ICT in Special Education: What are European Practitioners Asking ICT Researchers For?

A. Watkins, European Agency for Development in Special Needs Education, Denmark

#### Perceptually-Seductive Technology in Special Needs Education

E. Waterworth & J. Waterworth, Interactive Institute Tools for Creativity Studio, Sweden

#### Adaptation of Interactive Courseware

M. Antona, A. Savidis, C. Stephanidis, Foundation for Research and Technology-Hellas, Greece

#### Accessible Software for Early Maths Education: Focusing on Content, Strategies, Interface

G. Dettori, CNR-IMA, Italy; & M. Ott, CNR-ITD, Italy

*Chair: Jan Ekberg, National Research and Development Centre for Welfare and Health, Finland*

#### Universal Usability for Web Sites: Current Trends in the U.S. Law

J. Lazar, Towson University, USA; L. Kumin, Loyola College, USA; & S. Wolsey, University of Baltimore, USA

#### The Legislative Impact in Australia on Universal Access in Telecommunications

G. Astbrink, GSA Information Consultants, Australia

#### Designing Trust for a Universal Audience: A Multicultural Study on the Formation of Trust in the Internet in the Nordic Countries

K. Karvonen, Helsinki University of Technology, Finland

#### User Interfaces for the Productive Information Society

W. Goehring, Institute for Autonomous Intelligent Systems AiS, GMD, Germany

#### Subjects, Subjectivity and Privacy in the Global Network

D. Calenda & D. Giuli, University of Florence, Italy

#### An Evaluation Perspective: Access to Telecommunications in Europe

J. Ekberg & E. Kemppainen, National Research and Development Centre for Welfare and Health, Finland

*Chairs: Kenji Itoh, Tokyo Institute of Technology, Japan & John Paulin Hansen, IT-University of Copenhagen, Denmark*

#### Using Eye Tracking Data to Indicate Team Situation Awareness

H. Boje Andersen, C.R. Pedersen & H.H.K. Andersen, Riso National Laboratory, Denmark

#### Combined Analysis of Verbal Protocols and Eye Movements

J.P. Hansen, IT-University of Copenhagen, Denmark; G. Hauland & H. Boje Andersen, Riso National Laboratory, Denmark

#### Eye-Tracking Applications to Design of New Train Interface for the Japanese High-speed Railway

K. Itoh, Future University-Hakodate, Japan; M. Arimoto & Y. Akachi, Central Japan Railway Co., Japan

#### Empirical Evaluation of a Novel Gaze-Controlled Zooming Interface

M. Pomplun, N. Ivanovic, E.M. Reingold & J. Shen, University of Toronto, Canada

#### An Assessment of a Live-Video Gaze-Contingent Multi-Resolutional Display

E.M. Reingold, University of Toronto, Canada; L.C. Loschky, University of Illinois at Urbana-Champaign, USA; D.M. Stampe & J. Shen, University of Toronto, Canada

#### Pilots' Eye Fixations During Normal and Abnormal Take-Off Scenarios

S. Weber & H. Boje Andersen, Riso National Laboratory, Denmark

## Virtual Reality and Novel Interface

### Tulane Room

Chair: *Michitaka Hirose*,  
University of Tokyo, Japan

#### Experiential Recording by Wearable Computer

R. Ueoka & M. Hirose, University of Tokyo, Japan

#### VR on Gigabit Network: Video Avator Technology

T. Ogi, T. Yamada & M. Hirose,  
University of Tokyo, Japan

#### Embodied Spaces: Designing Remote Collaboration System Based on Body Metaphor

H. Kuzuoka, University of Tsukuba, Japan; K. Yamazaki, Saitama University, Japan; J. Yamashita & S. Oyama, University of Tsukuba, Japan; A. Yamazaki, Future University Hakodate, Japan; H. Kato, National Institute of Multimedia Education, Japan; H. Suzuki, Ibaraki University, Japan & H. Miki, Oki Electric Ind. Co., Ltd., Japan

#### Novel Haptic Texture Interface

Y. Ikei, N. Aoki & M. Shiratori,  
Tokyo Metropolitan Institute of Technology, Japan

#### Object Model for Haptic Interaction

K. Hirota & M. Hirose, University of Tokyo, Japan

#### Wearable Interface Device

R. Kijima, Gifu University, Japan

## User Interface Development

### Bayou 3

Chair: *Sheue-Ling Hwang*,  
National Tsing-Hua University,  
R.O.C.

#### Internet-Based Electronic Data Exchange Interface for E-Business Integration

A.J.C. Trappey, S. Chen & P.-H. Ho, National Tsing Hua University, R.O.C.

#### Storefront Interface Analysis and Evaluation for E-Commerce Applications

C.V. Trappey, National Chiao Tung University, R.O.C.; A.J.C. Trappey & C.Y.-P. Chang, National Tsing Hua University, R.O.C.

#### User Interface Design in NMR

M. Vera, University of Puerto Rico-Mayaguez, USA

#### An Application of Lessons Learned in Virtual Reality to the Services Industry

V.G. Duffy, Hong Kong University of Science & Technology, Hong Kong

#### A Survey of Design Guidelines for Usability of Web Sites

C.-H. Wang, Soochow University, R.O.C.

#### The Influence of Usability Principles on Developer's Performance

T.-Z. Lee & W.-Y. Lin, National Cheng-Kung University, Taiwan

#### The Development of a Cognitive-Driven Expert System Interface

K.-W. Su, S.-L. Hwang & T.-H. Liu, National Tsing Hua University, R.O.C.

## Anytime, Anywhere: Mobile Baby-face Design for PDAs and Cellphone

### Gold Room

Chair: *Aaron Marcus*, Aaron Marcus & Associates, Inc., USA

#### Babyface Design for Mobile Devices and the Web

A. Marcus, Aaron Marcus & Associates, Inc., USA  
E. Chen  
U. Kochavi

## Methodology of Ergonomic Assessment of Computer Workplaces

### Wildcatter Room

Chair: *Danuta Koradecka*,  
Central Institute for Labor Protection, Poland

#### A Checklist as a Method for Assessing Conditions of Work with Computers—Implementation of Directive 270/90/EEC in Poland

A. Wolska, J. Bugajska & A. Najmiec, Central Institute for Labor Protection, Poland

#### Monitoring the Usability of Interactive Systems

M. Morandini, State University of Maringa, Brazil

#### Using Work-Related Ergonomics Knowledge to Explore and Organize the Design Space in HCI

M. Pimenta, R. Faust, N. dos Santos,  
Inst de Informatica-UFRGS, Brazil

#### Changing the Design Focus of Tools for Virtual Collaborative Learning Environments: From Content Course to its Actors

H. Vieria da Rocha, State University of Campinas, Brazil;  
L.A. Santos Romani, Embrapa Info Technology, Brazil & J.Y.Y. Oeiras, State University of Campinas, Brazil

#### User Satisfaction Factors in Quality Management and Usability Evaluation of Interactive Products

M. Sikorski, Technical University of Gdansk, Poland

#### Ergonomic Aspects of Using a Computer System for Hazard Registration and Occupational Risk Assessment

A. Najmiec, W.M. Zawieska, M. Suchecka & J. Kurowski, Central Institute for Labor Protection, Poland

## Management of Information and Knowledge in Agile Manufacturing

### Orleans Room

Chair: *Yasufumi Kume*, Kinki University, Japan

#### Control of Reinforcement for Knowledge Tasks in Agile Manufacturing

E. Bamba & K. Nakazato,  
Kinki University, Japan

#### A Study on the Development of a Computer Aided Design System for Carbon Fishing Rod

C.M. Joo, B.G. Lee & H.S. Jung,  
Dong Seo University, Korea & Y. Kume, Kinki University, Japan

#### Application of Information Technology to Manufacturing and Human Networking

Y. Kume, M. Itoh & N. Sato,  
Kinki University, Japan

#### Integration of Cyber Marketing and Agile Production System

K. Terashima & T. Ui, Ryukoku University, Japan

#### Quality Judgement System by Human-Oriented Knowledge Management from Visual Information of FRP Products

M. Nakagawa, Tokyo University of Agriculture & Technology, Japan; K. Ohnishi & H. Nakayasu, Konan University, Japan

#### A Methodology for Quality Document Management Based on Hypertext

H.S. Jung, C.M. Joo & B.G. Lee,  
Dong Seo University, Korea & Y. Kume, Kinki University, Japan

# nical Sessions

THURSDAY • 8–10 am continued

## Usability Localization in Japan

### **Emerald Room**

*Chair: Masaaki Kurosu, Shizuoka University, Japan*

### **Cross Cultural Viewpoint Utilizing Sensory Analysis**

N. Hosono, Oki Electric Industry Co. Ltd., Japan; H. Inoue, Chiba College of Health Science, Japan & Y. Tomita, Keio University, Japan

### **Microsoft Usability Research in Japan—Our New Challenges Using the MSN Web Community Site and NetMeeting**

S. Shibata, Microsoft, Japan

### **Localization of a User Interface for Japanese Market: Nokia's Challenges in Mobile Terminals**

S. Mizobuchi & F. Ichikawa, Nokia Research Center, Japan & A. Shiraogawa, Nokia Mobile Phone, Japan

### **Differences in European and Japanese Operation Reactions: Results of Usability Testing in a Copier GUI Design Process**

M. Sano, Y. Wakamiya & S. Kotaka, Seiko Epson Corporation, Japan

### **Globalization and Localization—Structure of the Diversity**

M. Kurosu, Shizuoka University, Japan

### **Practice of Usability Evaluation in a Product Development Process Based on the Principle of Human-Centered Design and Future Subjects for Study in the Usability Evaluation**

M. Ogino, M. Tago & R. Shimamura, Ricoh Co. Ltd., Japan

## Office Ergonomics: How Do We Know if It Works?

### **Mayor's Chamber**

*Chairs: Michelle Robertson, Liberty Mutual, USA & Nancy Larson, Corporate 3M, USA*

### **Models of Office Ergonomics Measures: An Overview**

M. Robertson, Liberty Mutual, US

### **Measureless Impact of Computer Office Ergonomics: Is it Too Vast to Measure?**

N. Larson, Corporate 3M, USA

### **Office Ergonomics and Organizational Performance Metrics**

M. Robinson, Pacific Bell Safety, USA

### **Psychophysiology Measures in Office Settings**

L. Schleifer, University of Maryland, USA

### **An Office Ergonomics Case Study: Establishing Baseline Measures**

K. Shear, State of Minnesota, USA

## Human Factors Issues Associated with Virtual Environments 2

### **Explorer's Room**

*Chair: Kay M. Stanney, University of Central Florida, USA*

### **The Use of Real or Apparent Body Motion to Enhance Virtual Displays**

B.D. Lawson, Naval Aerospace Medical Research Lab, USA

### **Changes in Subjective Well-Being Associated with Exposure to Virtual Environments (VEs)**

B.D. Lawson, Naval Aerospace Medical Research Lab, USA

### **Human Performance in Virtual Environments: Examining User Control Techniques**

K.M. Stanney & K. Kingdon, University of Central Florida, USA & R.S. Kennedy, RSK Assessments Inc., USA

### **Toward a Theory of Affordance Based Design of Virtual Environments**

D.C. Gross, The Boeing Company, USA; K.M. Stanney, University of Central Florida, USA & J. Cohn, Naval Air Warfare Center, USA

### **Use of a Motion Experience Questionnaire to Predict Simulator Sickness**

R.S. Kennedy & N.E. Lane, RSK Assessments Inc., USA; K.M. Stanney, University of Central Florida, USA; S. Lanham, Fiserv, Inc., USA & K. Kingdon, University of Central Florida, USA

## Usability

### **Rex Room**

*Chair: Michael Haas, AFRL/HECP, USA*

### **Informal Usability Methods in IT Research and Product Development**

L. Repokari, Helsinki University of Technology, Finland

### **Simulating User Integration During Software Development**

I. Raue & C. Leutloff, University of Technology (RWTH), Germany

### **Web Document Ranking by Differentiated Expert Group Evaluation**

S.-W. Kim & C.-W. Chung, Korea Advanced Institute of Science & Technology, Korea

### **The Development of a Usability Measure for Flight Management Systems**

K.P. Lane, Aerosystems International, United Kingdom & D. Harris, Cranfield University, United Kingdom

### **An Industrial Case Study of Usability Evaluation in Market-Driven Packaged Software Development**

J. Natt och Dag & B. Regnell, Lund University, Sweden; O.S. Madsen, GTechnologies AB, Sweden; & A. Aurum, University of New South Wales, Australia

### **Web Spy System: An Web Usability Evaluation Tool**

M. Morandini, W. de Abreu Cybis, H. Rocha, State University of Maringa, Brazil

### **Supporting Organizational Learning in Usability Engineering: Requirements of Software Developers, Tool Support and Results of a Case Study**

E. Metzker, DaimlerChrysler Research & Technology Center, Germany

## Speech User Interfaces

### **Bayou 4**

*Chair: James R. Lewis, IBM Voice Systems, USA*

### **Injecting Stability into Mixed Initiative Dialogs**

B. Balentine, Enterprise Integration Group, USA

### **The Potential Use of Speech Interfaces Among Older Adults**

S.J. Czaja, University of Miami, USA

### **Augmenting Physical Tools: Bridging the Chasm of Late Adoption with Multimodal Language**

D.R. McGee, Pacific Northwest Research Lab, USA & P.R. Cohen, Oregon Graduate Institute, USA

### **Capabilities and Limitations of Wizard of Oz Evaluations of Speech User Interfaces**

W.J. Sadowski, IBM Voice Systems, USA

### **Intelligibility and Acceptability of Short Phrases Generated by Embedded Text-to-Speech Engines**

H. Wang, Cisco Systems, Inc., USA & J.R. Lewis, IBM Voice Systems, USA

### **Psychometric Properties of the Mean Opinion Scale**

J.R. Lewis, IBM Voice Systems, USA

## UAHCI

### Interaction Technologies 1

#### Bayou 2

Chair: *Neil Scott*, Stanford University, USA

#### **Auditory Icons and Earcons: Categorical and Conceptual Multimodal Interaction**

M. Bussemakers & A. De Haan, Nijmegen Institute for Cognition and Information, The Netherlands

#### **Multimodal Access to Vector Graphics on the Web by Computer Users with Print Disabilities**

J. Gardner & V. Bulatov, Oregon State University, USA

#### **Supporting Sign Language Users of Web-Based Applications: A Feasibility Study**

J. Donkin, C. Boldyreff, L. Burd, University of Durham, United Kingdom; & S. Marshall, Council for the Advancement of Communication with Deaf People, United Kingdom

#### **Sign Language Digitization and Animation**

T. Kuroda, Y. Tabata, M. Murakami, Y. Manabe & K. Chihara, Nara Institute of Science and Technology, Japan

#### **The ViSiCAST Project: Translation into Sign Language and Generation of Sign Language by Virtual Humans (Avatars) in Television, WWW and Face-to-Face Transactions**

R. Schulmeister, Universitat Hamburg, Germany

#### **Analysis of Haptic Data for Sign Language Recognition**

C. Shahabi, L. Kaghazian, S. Mehta, A. Ghoting, G. Shanbhag & M. McLaughlin, University of Southern California, USA

### Speech Recognition Interfaces: Design, Evaluation, and Algorithms

#### University Room

Chair: *Andrew Sears*, University of Maryland Baltimore County, USA

#### **Measuring the Performance of Speech Applications: A User-Centered Approach**

N. Leduc, M. Dougherty & V. Ankaïtis, Nuance Communications, USA

#### **Speech Recognition for Data Entry by Individuals with Spinal Cord Injuries**

K. Oseitutu, J. Feng, A. Sears, University of Maryland Baltimore County, USA; & C.-M. Karat, IBM TJ Watson Research Center, USA

#### **Navigating the Voice Web**

J. Balogh, N. Leduc & M. Cohen, Nuance Communications, USA

#### **Modeling Spontaneous Speech Events During Recognition**

P. Heeman, Oregon Graduate Institute of Science and Technology, USA

#### **Word Recognition for All: Application to Speech Training**

M.-C. Haton & J.-P. Haton, Universite Henri-Poincare, France

#### **Speech Technology for Universal Access in Interactive Systems?**

R. Privat, N. Vigouroux, C. Bousquet, P. Truillet & B. Oriola, IRIT, UMR CNRS, France

### Human Factors and Universal Access

#### Bayou 1

Chair: *Demosthenes Akoumianakis*, Foundation for Research and Technology-Hellas, Greece

#### **Analytical Evaluation of Interactive Systems Regarding the Ease of Use**

N. Hamacher & J. Marrenbach, Aachen University of Technology, Germany

#### **Usability Evaluation of Universal User Interfaces with the Computer-Aided Evaluation Tool PROKUS**

G. Zuelch & S. Stowasser, University of Karlsruhe, Germany

#### **The Effect of Human Factors in Flexibility Management: An International Survey**

B. Kayis, S. Kara, S. O'Kane & A. Dingwall, The University of New South Wales, Australia

#### **Learning Universal Access Guidelines by Solving HCI Problems**

E. Furtado & V. Furtado, Universidade de Fortaleza, Brazil

#### **Communication Evaluation in Multimedia: Metrics and Methodology**

F. Cipolla-Ficarra, F&F Multimedia Communications Corporation, Italy

#### **The Assessment of the Software Quality by Users**

J. Olszewski & K. Lis, University of Economics Department of Labour and Social Policy, Poland

## EP&CE

### Activity Theory

#### Creole Room

Chair: *Gregory Bedny*, Essex County College, USA

#### **Activity Theory as Theoretical Foundation for the Study of Human-Computer Interaction**

G. Bedny, Essex County College, USA; W. Karwowski, University of Louisville, USA; & M. Seglin, Activity & Human Performance Center of New Jersey, USA

#### **Activity Theory as a Basis for the Study and Redesign of Computer-Based Task**

G. Bedny, Essex County College, USA; W. Karwowski, University of Louisville, USA; & M. Seglin, Activity & Human Performance Center of New Jersey, USA

#### **The Subject-Activity Paradigm and the Computerization**

A.V. Brushlinsky, Russian Academy of Sciences, Russia

#### **Understanding, Thinking Activity, and the Creation of "Intelligent Systems"**

V.V. Znakov, Russian Academy of Sciences, Russia

#### **Analysis of Visual Search Requirement Addressed in Current Usability Testing Methodologies for GUI Applications**

O.-J. Jeng & T. Sengupta, New Jersey Institute of Technology, USA

#### **Professionally Important Personality Features and Psychophysiological States of Military Ship Operators**

V. Levytskiy, Military Merchant Marine Academy, Ukraine; M. Seglin, Activity & Human Performance Center of New Jersey, USA; & G.E. Zhuravlyov, Ukraine Academy of Pedagogical Science, Ukraine

# nical Sessions

THURSDAY • 10:30 am–12 pm

THU • 10:30 am–12 pm

**Advanced Interface Designs for Human Support**

**Explorer's Room**

*Chairs: Kazuo Furuta, The University of Tokyo, Japan & Hidekazu Yoshikawa, Kyoto University, Japan*

**Development of Safety Support System for Nuclear Power Plant (Fault-Tolerant Automation System)**

K. Ito, & T. Nagai, Mitsubishi Heavy Industries Ltd., Japan & H. Okamoto, Mitsubishi Electric Corporation, Japan

**A Human-Machine System for Nuclear Power Plant Operation**

Y. Ohga, H. Yuchi, Y. Hayashi, A. Maeda & S. Utena, Hitachi, Ltd., Japan

**Process Model-based Operator Advisor for Nuclear Power Plants**

N. Naito, Y. Sonoda, Y. Hirose, N. Mori, Y. Takizawa & J. Ikeda, Toshiba Corporation, Japan

**Defining Interface Transparency Through Task Flow**

C. Baber, The University of Birmingham, United Kingdom & N. Stanton, Brunel University, United Kingdom

**The Study on the Design of Automatic Procedure Explorer and the Interface During Accident in Nuclear Power Plant**

Y. Kawabe & Y. Niwa, Institute of Nuclear Safety System Inc., Japan & H. Yoshikawa, Kyoto University, Japan

**Interaction with Agents Systems**

**Bayou 3**

*Chair: Emmanuelle Grislin-LeStrugeon, University of Valenciennes, France*

**Interaction with Agents Systems: Problematics and Classification**

E. Grislin-Le Strugeon and A. Peninou, University of Valenciennes, France

**From Communication Between Agents to Conversation Between Agents and Humans**

S. Pesty, Lab Leibniz-IMAG, France

**The User is an Agent**

G. Hutzler, Universite Envy-Val d'Essonne, France

**Interaction with Agent Systems for Technological Watch**

E. Adam, University of Valenciennes, France; E. Vergison, SOLVAY Research Technology, Belgium; R. Mandiau & C. Kolski, University of Valenciennes, France

**Interaction with Agent Systems for Intermodality in Transport Systems**

C. Petit-Roze & E. Grislin-Le Strugeon, University of Valenciennes, France

**Integrated Design in Practice**

**Gold Room**

*Chairs: Jan Gulliksen & Bengt Sandblad, Uppsala University, Sweden*

**Work Environment and the Development of Information Systems**

J. Gulliksen & B. Sandblad, Uppsala University, Sweden

**Stress and Mastery of Technology Changes**

T. Endestad, University of Oslo, Norway

**How to Integrate Health and Satisfaction in the Development of Interactive Systems**

C. Aborg, Uppsala University, Sweden

**Integrating HCI, Human Factors and Occupational Health: An Exploratory Study**

A.H. Jorgensen, IT-University of Copenhagen, Denmark; B.R. Jensen, B. Laursen & A.H. Garde, National Institute of Occupational Health, Denmark

**Knowledge Production Processes for Optimal IT Use**

I. Kavathatzopoulos, Uppsala University, Sweden

**Interating Organizational Development in Authorities with Human Centered Systems Development**

J. Persson, Uppsala University, Sweden

**A Holistic Approach to Usability**

I.C. M. Karlsson, Chalmers University of Technology, Sweden

**Towards Safe HCI for Complex Systems**

**Wildcatter Room**

*Chairs: Erik Hollnagel, University of Linkoping, Sweden & Hidekazu Yoshikawa, Kyoto University, Japan*

**Safe HCI Design as Part of Safe Organizational Change Processes**

G. Grote, Swiss Federal Institute of Technology, Switzerland

**When Safety is a Matter of Redundant Information!**

G. Boy, EURISCO, France

**Progress Monitoring as a Way to Increase Reliability of Performance**

Y. Niwa, Institute of Nuclear Safety System, Japan & E. Hollnagel, University of Linkoping, Sweden

**Overconfidence Loop of Causality, and Defence-in-Depth in Organizational Accidents**

M. Itoh, University of Electro-Communications, Japan

**Significance of International Guideline for the Safety of Computer-Based Systems for NPP from Organizational Aspect**

H. Yoshikawa & T. Miyazawa, Kyoto University, Japan; S.R. Oh, Korea University, Korea; P.H. Seong, Korea Advanced Institute of Science & Technology, Korea; S. Nakanishi, Kansai Electric Power Co. Ltd., Japan; S. Makino, Tokyo Electric Power Co. Ltd., Japan; Y. Ohga, Hitachi Co., Ltd., Japan; T. Matsuki, Mitsubishi Electric Co. Ltd., Japan; & T. Sivertsen, OECD Halden Reactor Project, Norway

**Knowledge Management in Knowledge Intensive Organizations**

**Orleans Room**

*Chair: Eila Jarvenpaa, Helsinki University of Technology, Finland*

**Competence Needs in Software Industry**

S. Immonen & E. Jarvenpaa, Helsinki University of Technology, Finland & N. Kokko, CRF Box, Finland

**New Collaboration Forms in Media Industry: A Case Study of Story Exchange and Concurrent Narrating in Newspaper Network**

K. Lahenius, S. Immonen & E. Jarvenpaa, Helsinki University of Technology, Finland

**Interpersonal Trust and Knowledge Intensive Work**

E. Maki & E. Jarvenpaa, Helsinki University of Technology, Finland

**Leadership of the Future—Contents and Development**

J. Ylitalo, Helsinki University of Technology, Finland

# Parallel Tech

THURSDAY • 10:30 am–12 pm continued

## Computer-enhanced Learning in Higher Education

### **Emerald Room**

*Chair: Catherine L. Kelley, Fairleigh Dickinson University, USA*

#### **A Framework for Integrating Student Learning Styles, Instructor Pedagogy and Computer Supported Learning Technology**

R. Benbunan-Fich & L. Stelzer, Seton Hall University, USA

#### **Diagnostic Methods in Distance Education and Non-Traditional Learning Environments**

P. Callahan, University of Arizona South, USA

#### **Teaching and Learning in a Technology Assisted Environment: Learning Outcomes and Cost Effectiveness of Instructional Technology Initiatives at Rutgers University**

G.A. Gigliotti, A. O'Donnell, M.A. Devanas & J.P. Delaney, Rutgers-The State University, USA

#### **Computers as Cultural Artifacts and Their Impact on Learning**

I.M. Chisholm, Arizona State University West, USA

## Human Factors of Affective and Pleasure Based Design

### **Bayou 2**

*Chair: Halimahtun M. Khalid, University Malaysia Sarawak, Malaysia*

#### **Theories and Methods in Affective Human Factors Design**

M.G. Helander, Nanyang Technological University, Singapore

#### **Cross Cultural Issues in Affective Design**

S.-F.M. Liang, Honeywell Singapore Lab, Singapore

#### **Customer Needs in Web Based Interaction: A Macro View of Usability**

R.S. Goonetilleke & C. Duffy, Hong Kong University of Science & Technology, Hong Kong & D. Jacques, Icon Medialab Asia, Hong Kong

#### **Towards Affective Collaborative Design**

H.M. Khalid, University Malaysia Sarawak, Malaysia

#### **Usability and Beyond: Experiential Aspects of Web Interaction**

P. Jamting & I.C.M. Karlsson, Chalmers University of Technology, Sweden

## Web Use in Education and Training

### **University Room**

*Chair: Klaus-Peter Fahrnich, Fraunhofer IAO, Germany*

#### **Adaptive Hypermedia Presentation Modeling for Domain Ontologies**

J.A. Macias & P. Castells, Universidad Autononade Madrid, Spain

#### **Technology and Learning: An Analysis of the Use of Technology for Collaborative Development for Faculty and Students in the Arts**

J. Boggess, Cornell University, USA

#### **Interactions Between Students and Support Agents for Online Learning**

J. Whatley, University of Salford, United Kingdom; M. Beer, Sheffield Hallam University, United Kingdom; & G. Staniford, Liverpool John Moores University, United Kingdom

#### **Storytelling at a Distance**

L. Neal, EDS, USA

#### **Information Literacy and Telelearning: A Case Study of Teachers Use of an Electronic Tool**

J. Henri, J. Messing & K. Eustace, Charles Sturt University, Australia

## Company Management System

### **Tulane Room**

*Chair: Leszek Pacholski, Poznan University of Technology, Poland*

#### **Decision Models for Macroergonomics Advance of Manufacturing Company**

L. Pacholski, Poznan University of Technology, Poland

#### **External and Internal Virtuality of Company**

S. Trzcielinski, Poznan University of Technology, Poland

#### **Organizational Document Management Systems**

E. Pawlowski, Poznan University of Technology, Poland

#### **Innovative Aspects in Design and Manufacturing of Products**

A. Kawecka-Endler, Poznan University of Technology, Poland

#### **Analysis of Virtuality of Organizational Structure—Case of Manufacturing Company**

J. Janowicz, Poznan University of Technology, Poland

#### **Computer Aided Management of Marketing in Manufacturing Company**

M. Siemieniak, A. Borucki & L. Pacholski, Poznan University of Technology, Poland

## Organizational Learning Using the Intranet

**1**

### **Bayou 4**

*Chair: Julie Jacko, Georgia Tech, USA*

#### **Using Integrated Platform Solutions in Work-Orientated Learning Environments**

H.-J. Bullinger, K. Mueller & F. Kempf, Fraunhofer IAO, Germany

#### **The Role of Web Portals in Information Sharing and Knowledge Transfer Among State Government Personnel**

D.B. Gant & J.P. Gant, Indiana University, USA

#### **Webtank Design: Intranet Support for Collaborative Problem-Solving**

Z. Gill, NASA Ames Research Center, USA

#### **Development and Validation of Intranet Portal Organizational Memory Information System for Improving Organizational Learning**

J.G. Ji & G. Salvendy, Purdue University, USA

#### **Intranet as a Tool for Learning**

J.A. Jacko, Georgia Tech, USA

# nical Sessions

THURSDAY • 10:30 am–12 pm continued

## UAHCI

HCI Medley  
1

Web Access  
1

Visual Languages  
for Universal  
Communication

User Diversity and  
User Participation  
1

Creole Room

Bayou 1

Mayor's Chamber

Rex Room

Chair: TBA

### A Spacing Method for Readable Arrangement of Characters

M. Miyoshi, Y. Shimoshio, H. Koga & M. Shimoda, Kumamoto National College of Technology, Japan & K. Uchimura, Kumamoto University, Japan

### Eye-Tracking Analysis of Priming Effects of Pre-Watched Television Commercials on Reading Patterns of Printed Advertisements

H. Aoki & K. Itoh, Tokyo Institute of Technology

### The Application of Computer Support of Management in a Company

J. Lewandowski, Technical University of Lodz, Poland

### Human-Computer Interaction System Design

J.E.L. Hollis, RCMS, United Kingdom; H.W. Choo, MOD, Singapore; S. Takel & J. Morrison, DERA, United Kingdom

### Laterna Magica—Future Architecture in Neoromantic Relation Pose of Customers

A. Foltarz, Technical University of Lodz, Poland

### Using Portal Solution in the Business Applications

A. Moallem, PeopleSoft Inc., USA

Chair: *Jon Gunderson*, University of Illinois at Urbana-Champaign, USA

### A Different Approach to Real Web Accessibility

A.R. Fernandes, F.M. Martins, H. Paredes & J. Pereira, Universidade do Minho, Portugal

### How Much Does Compliance with the W3C Web Content Accessibility Guidelines Improve Web Site Usability for the Blind and Vision Impaired?—A Human Factors Perspective

R. Pedlow, M. Mirabella & C. Chow, Telstra Research Laboratories, Australia

### Web Accessibility for Seniors

V. Hanson, J. Richards, P. Fairweather, IBM Research, T.J. Watson Research Center, USA; F. Brown, IBM Accessibility Center, USA; S. Crayne, IBM Research, T.J. Watson Research Center, USA; S. Detweiler & R. Schwerdtfeger, IBM Accessibility Center, USA; & B. Tibbitts, IBM Research, T.J. Watson Research Center, USA

### A Simple Approach to Web-Site Usability Testing

M. Skov & J. Stage, Aalborg University, Denmark

### W3C User Agent Accessibility Guidelines

J. Gunderson, University of Illinois at Urbana-Champaign, USA

Chair: *Maria Francesca Costabile*, Universita di Bari, Italy

### What Visual Programming Research Contributes to Universal Access

M. Burnett, Oregon State University, USA

### Gesture Query for the Sentient Map

S.-K. Chang, University of Pittsburgh, USA

### Visual Languages to Bridge the Gap Between Software Developers and Their Clients

B. Ibrahim, University of Geneva, Switzerland

### A Visual Component Based Tool for Developing Embedded Application Software

Y.-H. Kim, Konkuk University, Korea; J.-H. Kim, Korea University, Korea; J.-Y. Kim, Hongik University, Korea; J.I. Kim, Konkuk University, Korea; J.-Y. Choi, Korea University, Korea; & C.-W. Pyo, Hongik University, Korea

### From User Notations to Accessible Interfaces Through Visual Languages

P. Bottoni, M.F. Costabile, S. Levialdi & P. Mussio, Universita "La Sapienza," Italy

Chair: *Harald Weber*, Foundation for Research and Technology-Hellas, Greece

### Involving Users with Learning Disabilities in Virtual Environment Design

H. Neale, S. Cobb & J. Wilson, University of Nottingham, United Kingdom

### Long Term Change in Computer Attitude, Computer Usage and Skill Transfer in Elderly Users of Touch Screen Interface

H. Umemuro, Tokyo Institute of Technology, Japan

### The ICS Model: Simultaneous Support to Stand-Alone and Cooperative Work

C. Sifaqui, Zentrum fur Graphische Datenverarbeitung e.V., Germany

### Designing for Users with Color-Vision Deficiency: Effective Color Combinations

P. Savage-Knepshield, Lucent Technologies/ Bell Labs, USA

### Involving Seniors in Designing Information Architecture for the Web

S.H. Kurniawan, P. Zaphiris & R.D. Ellis, Wayne State University, USA

# Parallel Tech

THURSDAY • 1:30–3 pm

## Human Aspects of Web Design

### University Room

*Chair: Nancy Lightner, University of South Carolina, USA*

#### Transaction Security in B2C eCommerce: Perceptions and Reality

J. Rees, Purdue University, USA

#### The Effect of Positive and Negative Information in Notes to Web-Based Financial Statements

A. Baldwin, The University of Alabama, USA; R.B. Dull, Clemson University, USA; & A. Graham, University of Rhode Island, USA

#### Adaptive Web Interfaces for Electronic Commerce

N.J. Lightner & J. Jackson, University of South Carolina, USA

#### Validating and Refining User Models of E-Commerce Customers with Usability Test Data

C.W. Turner, State Farm Insurance Co., USA

#### Decision Support Systems for ECommerce

W. Rivadeneira & M. Resnick, Florida International University, USA

#### Usability Evaluation Methods: What is Still Missing for the Web?

M. Winckler, Universite Toulouse 1, France; M. Pimenta, Instituto de Informatica-UFRGS, Brazil; P. Palanque & C. Farenc, Universite Toulouse 1, France

## Multimodality for Universal Access

### Mayor's Chamber

*Chair: Noelle Carbonell, CNRS, INRIA, France*

#### Computing in a Multimodal World

C. Baber, The University of Birmingham, United Kingdom

#### From Multimodality to Multimodalities: The Need for Independent Models

D. Archambault & D. Burger, Universite Pierre et Marie Curie, France

#### Cognitive Considerations in the Design of Multi-Modal Input Systems

S. Keates, J. Clarkson & P. Robinson, University of Cambridge, United Kingdom

#### Universal Multimedia Information Access

M. Maybury, The MITRE Corporation, USA

#### Designing Robust Multimodal Systems for Diverse Users and Environments

S. Oviatt, Oregon Graduate Institute of Science & Technology, USA

#### Recommendations for the Design of Usable Multimodal Command Languages

N. Carbonell, CNRS, INRIA, Universites de Nancy, France

## Applications

### Tulane Room

*Chair: TBA*

#### Challenges of HCI on the International Space Station

C. Vickroy & M.L. Dittmar, The Boeing Company, USA

#### ECHO Responds to NASA's Earth Science User Community

R. Pfister & R. Ullman, NASA/GSFC, USA & K. Wichmann, Global Science & Technology, Inc., USA

#### Ergonomic Evaluation of a Pre-Information System for Drivers

C. Servignat, Concept Ergonomie, France & M. Vernet, INRETS, France

#### Desired Features of Future Mobile Phones—Comparison of Two Methods

L. Repokari, V. Salmela, K. Hyppa & T. Koskinen, Helsinki University of Technology, Finland

#### Learning Smart Home

I. Salminen, Nokia Research Center, Finland

#### An Analysis of Human Computer Interaction in Vehicles

P. Roessger & J. Hofmeister, Computer Aided Animation AG, Germany

#### Modeling of Knowledge Structure Transformation with First-Order Clauses in Dynamic Systems

K.-H.E. Tang, Fend-Chia University, Taiwan

## Physical World for Virtual World

### Wildcatter Room

*Chair: Hirohiko Mori, Musashi Institute of Technology, Japan*

#### Virtual Glassboat: For Looking Under the Ground

I. Sio, Tamagawa University, Japan

#### The Classroom of the Future: Enhancing Education Through Augmented Reality

J.R. Cooperstock, McGill University, Canada

#### Node Navi: Visualizing Tool of Sensor Information Using Augmented Reality

E. Mochida, Keio University, Japan

#### Physical-Virtual Knowledge Work Environments—First Steps

T. Pederson, Umea University, Sweden

#### Dynamic Assignment of Virtual Functions on Physical Objects: Toward the Free Metaphor User Interface

K. Azuma, H. Mori & M. Kosugi, Musashi Institute of Technology, Japan

## HCI Considerations in E-commerce Enabling Technologies

### Creole Room

*Chairs: Francisco Moro, University of New Brunswick, Canada & Catherine Hajnal, Carleton University, Canada*

#### User Centred Design for ERP Users: At the Crossroads of Flexibility and Efficiency

A. Ramirez, Carleton University, Canada

#### Exploring Task Meaningfulness in Process-Oriented Organizations

C. Hajnal, Carleton University, Canada

#### e-CRM as a Complex Human-Computer Interactive System

C.H. Davis, University of New Brunswick, Canada

#### More than Only the User: Other Important Considerations for Implementing ICT in Organizations

F.B.P. Moro, University of New Brunswick, Canada

# nical Sessions

THURSDAY • 1:30–3 pm continued

## Enterprise Resource Planning

### Orleans Room

Chair: **Fiona Nah**, University of Nebraska-Lincoln, USA

#### Testing a Theoretical Model for Enterprise System Adoption

S.H. Teh, F.F.-H. Nah, & M. Beethe, University of Nebraska-Lincoln, USA

#### Integration and IT: Research in Progress

L. Singletary & E. Watson, Louisiana State University, USA

#### The Management of Cross-Functional Coordination in ERP Implementations

S. Gosain, University of Maryland, USA; Y. Kim, Fairleigh Dickinson University, USA; & Z.C. Lee, University of Nebraska-Lincoln, USA

#### Knowledge Management for Enterprise Systems

M. Rosemann, Queensland University of Technology, Australia

#### E-Value Chain Integration

K. Siau, University of Nebraska-Lincoln, USA

## Evaluation Methodologies for Human-machine Interaction

### Gold Room

Chairs: **Norio Naito**, Toshiba Corporation, Japan & **Hidekazu Yoshikawa**, Kyoto University, Japan

#### Evaluation of the HMI Suggested by Simulations of Operator Team Behavior and its Applications

K. Takano, T. Sano & K. Sasou, Central Research Institute of Electric Power Industry, Japan

#### Experimental Study on Expert Behavior for Situation Comprehension

M. Takahashi & D. Karikawa, Tohoku University, Japan; A. Ishibashi, Human Factor Research of Japan, Japan, & M. Kitamura, Tohoku University, Japan

#### Ontology Processing for Technical Information Retrieval

T. Ogure, K. Nakata & K. Furuta, The University of Tokyo, Japan

#### Diversity in Command and Control Environments

M. Persson, Swedish National Defence College, Sweden & B. Johansson, University of Linköping, Sweden

#### Creativity or Levels of Automation in Emergency Operating Procedures for a Large-Complex System: Probabilistic Analysis on Human-Automation Collaboration

H. Furukawa, University of Tsukuba, Japan; Y. Niwa, Institute of Nuclear Technology, Japan; & T. Inagaki, University of Tsukuba, Japan

## Organizational Learning Using the Intranet

### Bayou 4

Chair: **Julie Jacko**, Georgia Tech, USA

#### Computational Environments for Organizational Learning

D. Akoumianakis & C. Stephanidis, Foundation for Research and Technology-Hellas, Greece

#### Organizational Structure, Knowledge Management, and Collaborative Tools: Where is the Intersect?

D. Serfaty, J. MacMillan & J. Freeman, Aptima Inc., USA

#### Organizational Learning Using the Intranet: Illusion or Reality?

F. Sainfort, Georgia Tech, USA

#### Navigating the Intranet: Problems and Solutions

A. Sears, University of Maryland Baltimore County, USA

#### Collaborative Knowledge Management, Social Networks, and Organizational Learning

P.M. Jones, NASA Ames Research Center, USA

## Web Access

### Bayou 1

Chair: **Mary Zajicek**, Oxford Brookes University, United Kingdom

#### Usability of Transport Web Sites by Elderly Travellers

A. Pautie, INRETS/LESCOT, France

#### Universal Web Approach to Web Contents for a Company Web Site

K. Yamazaki, IBM Japan Ltd., Japan

#### Developing Guidelines for Designing Usable Web Pages for Older Chinese Adults

P.-L.P. Rau, Chung Yuan Christian University, Taiwan; & J.-W. Shiu, National Chiao Tung University, Taiwan

#### Ubiquitous Multimedia Services with XML

P. Vuorimaa, J. Vierinen & J. Teirikangas, Helsinki University of Technology, Finland

#### Remembering How to Use the Internet—An Investigation into the Effectiveness of VoiceHelp for Older Adults

W. Morrissey & M. Zajicek, Oxford Brookes University, United Kingdom

## Open User Groups and Task-centered Design

### Bayou 2

Chair: **Christian Stary**, University of Linz, Austria

#### Accommodating Diverse Users in ETAG and ETAG-based Design: Task Knowledge and Presentation

G. de Haan, Maastricht University, The Netherlands

#### Usability Engineering for Diferent European Countries

K. Baumann, Philips Internet Fax Appliances & Fachhochschule Joanneum, Austria

#### Software Development and Open User Communities

P. Forbrig & A. Dittmar, University of Rostock, Germany

#### Force-Feedback in Computer-Mediated Communication

S. Brave, C. Nass & E. Sirinian, Stanford University, USA

#### Handling User Diversity in Task-Oriented Design

C. Stary, University of Linz, Austria

UAHCI

## UAHCI

### Access to Information 2

#### Explorer's Room

*Chair: Albert Arnold, Centre of Expertise Foundation, The Netherlands*

#### Some HCI Challenges of the Virtual Exhibition

J. Hiller, University of New South Wales, Australia; & T. Postero, Buffalo State College, USA

#### Smart Interfaces Supporting Physical Navigation while Experiencing a Heedful Audio Information Space

A. Andreadis & A. Bianchi, Università degli Studi di Siena, Italy

#### Functional Modeling of Process Systems for Interface Design

Q. Liu, K. Nakata & K. Furuta, The University of Tokyo, Japan

#### A Simple Interaction Scheme for Quick Exploration of Long Videos

D. Payet, H. Betaille, M. Nanard & J. Nanard, Univ. Montpellier, France

#### OFFICE 21—Inventing an Interactive Creativity Landscape

W. Bauer, Fraunhofer IAO, Germany; U.-E. Haner, University of Stuttgart, Germany; & A. Rieck, Fraunhofer IAO, Germany

### Japanese Activity in Universal Access

#### Emerald Room

*Chair: Hirotada Ueda, Hitachi Denshi Ltd., Japan*

#### Present Stage and Issues of Sign Linguistic Engineering

Y. Nagashima, Kogakuin University, Japan; & K. Kanda, Chukyo University, Japan

#### Voice Windows: A Script-Based Platform in Windows for Visually Impaired

T. Kamae, Stanford University, USA; H. Honda & T. Watanabe, Shonan Institute of Technology, Japan; T. Koide, Create System Co. Ltd., Japan; & T. Kurihara, Tsukuba College of Technology, Japan

#### Usage of a Stenographic Typewriter for the Hearing Impaired at NRCD in Japan

T. Nakayama, The National Rehabilitation Center for the Disabled, Japan; N. Tejima, Ritsumeikan University, Japan; & S. Yamauchi, The National Rehabilitation Center for the Disabled, Japan

#### Bilingual Emacspeak Platform—A Universal Speech Interface with GNU Emacs

T. Watanabe, K. Inoue, M. Sakamoto, M. Kiriake & H. Honda, Shonan Institute of Technology, Japan; T. Nishimoto, Kyoto Institute of Technology, Japan; & T. Kamae, Stanford University, USA

#### Universal Access Design for Information Kiosks

H. Sagawa, Multi-Modal Functions Hitachi Laboratory, Japan; H. Ando, Hitachi Central Research Laboratory, Japan; M. Takeuchi, Multi-Modal Functions Hitachi Laboratory, Japan; & N. Hataoka, Hitachi Central Research Laboratory, Japan

## EP&CE

### Intelligent Human-computer Interfaces

#### Bayou 3

*Chair: Anthony F. Norcio, University of Maryland Baltimore County, USA*

#### Internationalization of Websites: The Next Great Challenge in Interface Design

L.E. Burgee, Loyola College, USA

#### An Exploratory Study of Situational Error on the Web

J. Lazar, Towson University, USA & A.F. Norcio, University of Maryland Baltimore County, USA

#### Designing for Effective Information Presentation: The Effects of Cultural Differences on Speed, Accuracy, and Perceptions on Usability and Aesthetics

J. Noiwan, Prince of Songkla University, Thailand & A.F. Norcio, University of Maryland Baltimore County, USA

#### Abstract Interfaces in Three-Dimensional Space

D.K. Jennings, University of Maryland Baltimore County, USA

#### Practical Approaches to Fuzzy Object-Oriented User Modeling

T. Piyawat, Prince of Songkla University, Thailand & A.F. Norcio, University of Maryland Baltimore County, USA

#### Color as Communication: Nontextual Methods for the Conveyance of Information

D. Denenberg, University of Maryland Baltimore County, USA

### Performance Recovery Nuclear Reactor

#### Rex Room

*Chair: TBA*

#### Performance Recovery and Goal Conflict

M. Kaarstad, OECD Halden Reactor Project, Norway

#### Cognitive Gearing: A Measure of System Effectiveness?

C.D.B. Deighton & I.S. MacLeod, Aerosystems International Ltd., United Kingdom

#### Basic Principles to Design an Advanced Human Adapted Supervisory System

B. Riera & S. Triki, University of Valenciennes, France

#### An Integrated Framework for Tactical Human-Machine Systems Engineering

A. Worm, Swedish Defence Research Agency, Sweden

# nical Sessions

THURSDAY • 3:30–5:30 pm

THU • 3:30–5:30 pm

## Intelligent Educational Systems

### Explorer's Room

Chair: *Antonija Mitrovic*,  
University of Canterbury, New Zealand

#### Design Issues of KDAEHS: An Adaptive Educational Hypermedia System Based on Structural Computing

J. Ni, X. Zhou & K. Wang,  
University of Science & Technology of China, P.R. China

#### Supporting Peer Help and Collaboration in a Mobile Environment

J. Vassileva & R. Deters, University of Saskatchewan, Canada

#### Graphical Interfaces for Constructionist Learning Environments

R.H. Kemp, T. Stewart & C. Allan,  
Massey University, New Zealand

#### Personalizing the Collaboration Between Students in a Web-based Adaptive Educational System

J.G. Boticario, E. Gaudioso & F. Hernandez, Univ. Nacional de Educacion a Distancia, Spain

#### Pen-Based Testing: Providing Learners with Customized Feedback and Instructors with a Powerful Tool for Constructing Tests

P. Zaharias, A. Poulymenakou & K. Samiotis, Athens University of Economics & Business, Greece

#### Designing an Intelligent Tutoring System for Database Modelling

P. Suraweera & A. Mitrovic,  
University of Canterbury, New Zealand

## Ergonomic Issues and Advanced Technology in HCI

### Emerald Room

Chair: *Atsuo Murata*, Hiroshima City University, Japan

#### Improvement of Understanding of Icons by Label and Context

T. Miyoshi & A. Murata, Hiroshima City University, Japan

#### An Attempt to Evaluate Cognitive Workload in Human-Computer Interaction

A. Murata, Y. Takahashi & T. Miyoshi, Hiroshima City University, Japan

#### Constructing 3D Virtual Environment Using Images and 2D Map

H. Kamigouchi & Y. Nakamura,  
Hiroshima City University, Japan

#### The Effect of Spatial Cues in Augmented Reality Video Conferencing

H. Kato, Hiroshima City University, Japan; M. Billingham, University of Washington, USA; K. Morinaga & K. Tachibana, Hiroshima City University, Japan

#### The Characteristics in Silent Reading Japanese Language of the Cerebral Palsy Patients

M. Karashima, Tokai University, Japan & H. Nishiguchi, Kyushu University, Japan

#### Analysis of Adaptive Driving Behavior under the Simulated Driving Environment

M. Okuwa, Aist Tsukuba Central, Japan; S. Doi, Tokyo Central R&D Labs Inc., Japan & M. Akamatsu, National Institute of Advanced Ind. Science & Technology, Japan

## Kansei Engineering and Its Applications

### Gold Room

Chair: *Mitsuo Nagamachi*, Hiroshima International University, Japan

#### Perspectives of Kansei Engineering/Kansei Ergonomics

M. Nagamachi, Hiroshima International University, Japan

#### Basic Kansei Database for Kansei Engineering

T. Nishino, M. Nagamachi & S. Ishihara, Hiroshima International University, Japan

#### An Analysis of Non-Linearity Characteristic on Kansei Data

S. Ishihara, K. Ishihara, M. Nagamachi & T. Nishino, Hiroshima International University, Japan & K. Komatsu, Kure National Institute of Technology, Japan

#### Evaluation of Food Advertisement in Terms of Genetic Algorithm

T. Tsuchiya, Shimomoseki City University, Japan; Y. Matsubara, Kagawa University, Japan; S. Ishihara & M. Nagamachi, Hiroshima International University, Japan

#### A Study of Kansei on Human Meal Tendency

T. Kanda, Bunri University of Hospitality, Japan

#### Suspension and Damping of a Lowlifter Platform—An Application of Kansei Engineering

J.R.C. Axelsson & J. Eklund, Linkoping University, Sweden; M. Nagamachi & S. Ishihara, Hiroshima International University, Japan; K. Rydman & J. Sandin, Linkoping University, Sweden

## The Human Element in Operations Management

### Wildcatter Room

Chair: *Nobuto Nakamura*, Hiroshima University, Japan

#### A Study on Team Effectiveness in Chemical Plant Operations

Myreshka, N. Nakamura, K. Takahashi & K. Morikawa,  
Hiroshima University, Japan

#### Task Selection Rules for Collaborative Work in Serial Production Lines

T. Ohno, K. Takahashi, K. Morikawa & N. Nakamura, Hiroshima University, Japan

#### A Human-Computer Interactive System for Collaborative Scheduling

K. Morikawa & N. Nakamura,  
Hiroshima University, Japan

#### Decision Support Using Activity-based Costing for the Coordination of Smaller Wholesale Firms

T. Kataoka, K. Morikawa, K. Takahashi & N. Nakamura,  
Hiroshima University, Japan

#### Designing of Web-based User Interface System for Remote Human Supervisory Control in Manufacturing Systems

T. Kamigaki, Hiroshima Kokusai Gakuin University, Japan & N. Nakamura, Hiroshima University, Japan

#### Design of Web-based Manufacturer-Supplier Negotiation Process

A. Cakravastia & N. Nakamura,  
Hiroshima University, Japan

## Adaptive and Adaptable Interfaces

### Mayor's Chamber

Chair: *Alexander Nikov*, Technical University of Sofia, Bulgaria

#### Adaptive Tutoring in Business Education Using Fuzzy Backpropagation Approach

Kinshuk, Massey University, New Zealand; A. Nikov & A. Patel, Technical University of Sofia, Bulgaria

#### An Algorithm and a System for User Interface Adaptation

A. Nikov, Technical University of Sofia, Bulgaria; S. Stoeva, Bulgarian National Library, Bulgaria; & M. Tzekov, Hypo Vereinsbank Bulgaria GmbH, Germany

#### WEDIS: A Toolkit for Adaptable Creation and Support of Workshop Production Structures

H. Enderlein, Chemnitz University of Technology, Germany; A. Nikov, Technical University of Sofia, Bulgaria & B. Keil, Chemnitz University of Technology, Germany

#### ISEDA: An Intelligent System for Adaptable Support of Ergonomic Design and Assessment

J.-H. Kirchner, Technical University Braunschweig, Germany & A. Nikov, Technical University of Sofia, Bulgaria

## Interaction Technology for Affective Computing 2

### Bayou 3

*Chair: Shogo Nishida, Osaka University, Japan*

#### Cooperative Ensemble System Based on Kansei Coordination

N. Saiwaki, A. Oda, C. Terashima, M. Nakatani & S. Nishida, Osaka University, Japan

#### Kansei Interaction in Art and Technology

H. Katayose, S. Hirai, C. Horii, A. Kimura, & K. Sato, Wakayama University, Japan

#### The Impact of Social Context on Perceptions of Computing Activities

D.C. Dryer, Adobe Systems, USA

#### Collaborative Work Support on Networked Heterogeneous Platforms—Shared Augmented Interior Design Space

K. Minami, Nara Institute of Science & Technology, Japan; T. Korpipaa, Nara Research Center/VTT Electronics, Finland; T. Shuzui, T. Kuroda, Y. Manabe, & K. Chihara, Nara Institute of Science & Technology, Japan

#### Extracting Relations Among Files by User's History

Y. Iwai, M. Yamada & M. Yachida, Osaka University, Japan

## Perspectives on HCI in Health Informatics: Insuring Quality in Health-care Decision-making

### Tulane Room

*Chair: Patricia Flatley Brennan, University of Wisconsin-Madison, USA*

#### HCI in Health Care: Meeting the Needs of the Clinical Care Team, Including Patients

P.F. Brennan, University of Wisconsin-Madison, USA

#### Cognitive Load for WebTV and PC Browser

G.J. Marmet, University of Wisconsin-Madison, USA; J.A. Jacko, Georgia Tech, USA; P.F. Brennan & K. Hamilton, University of Wisconsin-Madison, USA

#### The Relationship of Nurses' Cognitive and Demographic Characteristics with Reaction Times in GUI and Text-Based Clinical Information Systems

N. Staggars, University of Utah, USA & D.A. Kobus, Pacific Science & Engineering, USA

#### The Role of Information Presentation in Decision-Making During Anesthesia

F.A. Drews, J. Agutter, N.S. Syroid & D.R. Westenskow, University of Utah, USA

#### Patient Perspectives as a Source of Product Planning Data

D.M. Womack, Intel Corporation, USA

#### Enhancing the Report of Errors in Healthcare: A Systems Approach

D.A. Kobus, Pacific Science & Engineering Group, USA

## Speech/Voice Interface

### University Room

*Chair: Hong Tan, Purdue University, USA*

#### Speech Completion: New Speech Interface with On-demand Completion Assistance

M. Goto, K. Itou, T. Akiba & S. Hayamizu, National Institute of Advanced Ind. Science & Technology, Japan

#### A Support System for Visually Impaired Persons Using Acoustic Interface—Recognition of 3-D Spatial Information

Y. Kawai & F. Tomita, National Institute of Advanced Ind. Science & Technology, Japan

#### COMAP: A Content Mapper for Audio-Mediated Collaborative Writing

M. Masoodian, The University of Waikato, New Zealand & S. Luz, Trinity College Dublin, Ireland

#### An Experimental Study on Potentiality of Voice Input Device for Human-Machine Interface in Industrial Plants

M. Nakanishi & Y. Okada, Keio University, Japan

#### A Voice-Based Java Programming Environment

A. Bowers, C. Allen & M. Davis, Florida A&M University, USA

#### Feedback Requirements for a Direct Voice Input System

P.S.E. Farrell, M. Perlin & G.W. Ho, Defence & Civil Institute of Environmental Medicine, Canada

#### A Cognitive Linguistic Perspective on the User Interface

I. Lytje, Aalborg University, Denmark

#### Simulating Recognition Errors in Speech User Interface Prototyping

M. Peissner, F. Heidmann, J. Ziegler, Fraunhofer IAQ, Germany

## Web Site Designers

### Bayou 4

*Chair: TBA*

#### Panchronic for Active Media

F.V. Cipolla-Ficarra, F&F Multimedia Communic@tions Corporation, Italy

#### Promoting On-line Customer Confidence through Page Design

R. Montania & M. Resnick, Florida International University, USA

#### Navigability in Search Sites of Brazilian Internet

M.N. Medeira, L. Viana, V.M. Ehmman & C.R. Mont'Alvao, Centro Universitario Carioca, Brazil

#### Development and Evaluation of an Information Retrieval System for User Groups and the WWW

M. Mase & S. Yamada, Tokyo Institute of Technology, Japan

#### User Appropriate Plan Recognition for Adaptive Interfaces

M. Hofmann & M. Lang, Technical University of Munich, Germany

#### Interactive Discovery for Acquiring Trends of Web Information

W. Sunayama & M. Yachida, Osaka University, Japan

#### Assistance of Web Browsing by Indicating the Future Web Pages

N. Nagino & S. Yamada, Tokyo Institute of Technology

## User Diversity and User Participation 2

### Rex Room

*Chair: Julie Jacko, Georgia Institute of Technology, USA*

#### Applying User Dichotomies to the Design of Web User Interfaces

L. Dunckley, The Open University, United Kingdom; & M. Dunckley, United Business Media International, United Kingdom

#### Evaluation of User Customisation in E-mail and Mobile Telephones

M. Biemans, J.G. Schuurman & J. Swaak, Telematica Instituut, The Netherlands

#### Involving Chinese Users in Analyzing the Effects of Languages and Modalities on Computer Icons

S.H. Kurniawan, Wayne State University, USA; R. Goonetilleke & H. Shih, Hong Kong University of Science and Technology, Hong Kong

#### Using User Profiles to Customize the User Interface

M. Cabrera, M. Gea & J.C. Torres, Universidad de Granada, Spain

#### Age Differences and the Depth-Breadth Tradeoff in Hierarchical Online Information Systems

P. Zaphiris, Wayne State University, USA

#### Identifying Critical Interaction Scenarios for Innovative User Modeling

V.K. Emery, J. Jacko, T. Kongnakorn, V. Kuruchittham, S. Landry & G. Nickles III, Georgia Institute of Technology, USA; A. Sears, University of Maryland Baltimore County, USA; & J. Whittle, Georgia Institute of Technology, USA

# nical Sessions

THURSDAY • 3:30–5:30 pm continued

## UAHCI

### Interaction Technologies 2

#### Bayou 2

*Chair: Juergen Ziegler, Fraunhofer IAO, Germany*

#### Complexity Measures in Handwritten Signature Verification

M. Fairhurst, E. Kaplani & R. Guest, University of Kent, United Kingdom

#### Audio Augmenting Physical Navigation in Art Settings

A. Andreadis, G. Benelli & A. Bianchi, Universita degli Studi di Siena, Italy

#### Fischlar on a PDA: Handheld User Interface Design to a Video Indexing, Browsing and Playback System

H. Lee, A. Smeaton, N. Murphy, N. O'Connor & S. Marlow, Dublin City University, Ireland

#### User Interface and Usability for Phone Based Operation of Remittance Service in Automatic Teller Machine (ATM)

I. Kobayashi, Iwate Prefectural University, Japan; A. Iwazaki, Fujitsu, Ltd.; & K. Sasaki, Miyagi Prefectural School for the Blind, Japan

#### Bringing Gaze-based Interaction Back to Basics

J.P. Hansen, D.W. Hansen & A.S. Johansen, The IT University of Copenhagen, Denmark

#### Eye-Scan Patterns of Chinese When Searching Full Screen Menus

W.C. Lau, R. Goonetilleke & H. Shih, Hong Kong University of Science and Technology, Hong Kong

### Enabled by Design in the World of Ubiquitous Computers

#### Orleans Room

*Chair: Ing-Marie Jonsson, Dejima Inc., USA*

#### Natural Interaction Based on Host Agents, Profiles and Decoupling Modalities from Interaction Devices

I.-M. Jonsson & S. Hodjat, Dejima Inc., USA

#### Virtual Tourist Based on Peer-Ring—Communicating with People You Have Never Met

O. Carlvik, Ericsson Research, USA; & I.-M. Jonsson, Dejima Inc., USA

#### Approach-and-Use Technology

N. Scott, Stanford University, USA

#### Supporting Older Adults at the Interface

M. Zajicek, Oxford Brookes University, United Kingdom

#### Enhanced Facial Feature Tracking of Spontaneous and Continuous Expression

A. Goneid & R.E. Kaliouby, The American University in Cairo, Egypt

#### Design for Accessibility: Meeting the “Section 508 Challenge”

B. Cheikes, The MITRE Corporation, USA

### Continuity in HCI

#### Creole Room

*Chairs: Giorgio Faconti & Mieke Massink, CNR Istituto CNUCE, Italy*

#### Continuous Interaction with Computers: Issues and Requirements

G. Faconti & M. Massink, CNR Istituto CNUCE, Italy

#### Adaptation of Information Delivery to Support Task-Level Continuity

T. Rist, DFKI Saarbruecken, Germany; & S. Booth, Universita degli Studi di Parma, Italy

#### Continuity Through User Interface Adaptation: A Perspective on Universal Access

A. Paramythis, F. Leidermann, H. Weber & C. Stephanidis, Foundation for Research and Technology-Hellas, Greece

#### Issues in the Combination of Visual and Haptic Interaction

M. Bordegoni & U. Cugini, Universita di Parma, Italy; & P. Mussio, Universita di Brescia, Italy

#### A Control Centred Approach to Designing Interaction with Novel Devices

G. Doherty, CLRC Rutherford Appleton Laboratory, United Kingdom; T. Anderson, Drake Music Project, United Kingdom; M. Wilson, CLRC Rutherford Appleton Laboratory, United Kingdom; & G. Faconti, CNR Istituto CNUCE, Italy

#### Human-Computer Protocols

D. Duke, University of Bath, United Kingdom; D. Duce, Oxford Brookes University, United Kingdom; P. Barnard, MRC Cognition and Brain Sciences Unit, United Kingdom; & J. May, University of Sheffield, United Kingdom

## EP&CE

### Human Modeling and Cognitive Simulation

#### Bayou 1

*Chair: Thierry Bellet, INRETS, France*

#### Axiomatic and Pragmatic Approaches to Modelling of Cognition

E. Hollnagel, University of Linkoping, Sweden

#### Human Model Simulation of Plant Anomaly Diagnosis (HUMOS-PAD) to Estimate Time Cognitive Reliability Curve for HRA/PSA Practice

W. Wu & T. Nakagawa, Mitsubishi Electric Corporation, Japan & H. Yoshikawa, Kyoto University, Japan

#### Integration of a Driver Cognitive Model into a Traffic Micro-Simulation Tool

D. Delorme, University of California-Berkeley, USA

#### Modeling and Prediction of Human Driver Behavior

A. Liu, MIT, USA & D. Salvucci, Nissan Cambridge Basic Research, USA

#### Applications of Cognitive Architectures: Limits and Potential

C. Lebiere, Carnegie Mellon University, USA & D. Wallach, Basel University, Switzerland

#### Evolution of Socio-Cognitive Models Supporting the Co-Adaptation of People and Technology

G. Boy, EURISCO, France

THURSDAY 3:30-5:30 PM

## Knowledge Systems and Agents

### Tulane Room

*Chair: Aura Matias, University of the Philippines, The Philippines*

#### Task Analysis: The Best First Step in User Interface Design

G. Pearson & P. Weeks, AT&T Labs, USA

#### The Comovie Movie Recommended—An Interoperable Community Support Application

M. Koch & M.S. Lacher, Technical University of Munich, Germany

#### Usability Testing of Data Access Tools

J.J. Bosley & F.G. Conrad, BLS, USA

#### A Visual Development Environment for Meta-Computing Applications

P. Boulet, J.-L. DeKeyser, F. Devin & P. Marquet, Universite de Lille, France

#### Managing Human-Centered Design Artifacts in Distributed Development Environment with Knowledge Storage

M. Nieminen, Helsinki University of Technology, Finland

#### Acquiring Emotion Mappings Through the Interaction Between a User and a Life-Like Agent

S. Yamada, Tokyo Institute of Technology & T. Yamaguchi, Nara National College of Technology

#### Quantitative Evaluation of Effect of Embodied Conversational Agents on User Decisions

K. Shinozawa, J. Yamato, F. Naya & K. Kogure, NTT Communication Science Labs, Japan

#### A Distance Learning Case Study in Turkey: An Example from Istanbul Technical University

M.M. Yenisey, Istanbul Technical University, Turkey

## Web Usability Practices in Asia

### Bayou 3

*Chair: Pei-Luen Patrick Rau, Chung Yuan Christian University, Taiwan*

#### The Effect of Different Supplemental Navigation Types

C.-H. Chen & H.-M. Chang, National Cheng Kung University, Taiwan

#### The Usability of On-Line Shop in China

X. Fu & G. Zhou, Chinese Academy of Science, P.R. China & M.-P. Tham, Motorola Electronics Pte, Ltd., Singapore

#### A Study of Evaluating E-Commerce Web From the Viewpoint of Usability Engineering: A Case Study of Ticket-Selling System of Taiwan Railway Web

S.-S. Guan, National Yunlin University of Science & Technology, R.O.C.

#### The User Interface of an Engineering Data Management System on WWW

C.-C. Hsu, United Microelectronics Corp., Taiwan & S.-L. Hwang, National Tsing Hua University, Taiwan

#### Internationalization and Localization: Designing for Asian Users

P.-L.P. Rau, Chung Yuan Christian University, Taiwan & S.-F.M. Liang, Honeywell Singapore Lab, Singapore

#### Cultural Differences in Web Development

P.-L.P. Rau, Chung Yuan Christian University, Taiwan & X. Fang, DePaul University, USA

#### Cultural Differences in Information Search

P.-L.P. Rau, Chung Yuan Christian University, Taiwan & Y.-Y. Choong, GE Global Exchange Services, USA

## Interaction in Mixed Reality Environments

### Bayou 4

*Chair: Holger T. Regenbrecht, DaimlerChrysler AG, Germany*

#### Prop-based Interaction in Mixed Reality Applications

H.T. Regenbrecht & M.T. Wagner, DaimlerChrysler AG, Germany

#### Projection-Based Augmented Engineering

O. Bimber & A. Stork, Fraunhofer Institute for Computer Graphics, Germany & P. Branco, Fraunhofer Center for Research in Computer Graphics, USA

#### Issues for Application Development Using Immersive HMD 360 Degree Panoramic Video Environments

A. Rizzo, U. Neumann, T. Pintaric & M. Norden, University of Southern California, USA

#### Collaboration with Tangible Augmented Reality Interfaces

M. Billinghurst, University of Washington, USA; H. Kato, Hiroshima City University, Japan & I. Poupyrev, Sony Computer Science Lab, Japan

#### Converging User Interface Paradigms Using Collaborative Augmented Reality

D. Schmalstieg & G. Hesina, Vienna University of Technology, Austria

#### Augmented Reality Interface for Electronic Music Performance

I. Poupyrev, Sony Computer Science Lab, Japan; R. Berry, ATR MIC Research Labs, Japan; M. Billinghurst, University of Washington, USA; H. Kato, Hiroshima City University, Japan; K. Nakao, ATR MIC Research Labs, Japan; L. Baldwin, Redsmoke Inc., USA & J. Kurumisawa, ATR MIC Research Labs, Japan

## Computer Supported Learning

### Gold Room

*Chairs: Yasubumi Sakakibara & Hisao Koizumi, Tokyo Denki University, Japan*

#### Students Teach Students in Japanese-German Distance Learning Settings Including Video Conferences

K.-D. Graf, Freie Universitaet Berlin, Germany

#### Java Power Tools: A Foundation for Interactive HCI Exploration

V.K. Proulx, R. Rasala & J. Raab, Northeastern University, USA

#### Is the Indirect Learning Possible Through the UMM Assessment Tool for UI Designer

Y. Choi & E.-S. Lee, Sungkyunkwan University, Korea

#### SEGODON: A Distance Learning Support System Using Personal Computers via the Internet

J. Munemori & T. Yoshino, Wakayama University, Japan

#### An Interactive Distance Learning System and its Experiments in Domestic and Overseas Applications

H. Koizumi, Tokyo Denki University, Japan; T. Dasai, Mitsubishi Electric Corporation, Japan & K.D. Graf, Freie University Berlin, Germany

#### Methods of Visualizing Paper-Relation-Diagrams Based on the Viewpoints of Users

Y. Miyadera & A. Taji, Tokyo Gakugei University, Japan & J. Yaku, Nihon University, Japan

#### Agent-based Virtual Class Room

Y. Sakakibara & S. Naka, Tokyo Denki University, Japan

## Auditory Virtual Environments: Implementation, Validation, and Applications

### Rex Room

*Chairs: Barbara Shinn-Cunningham, Boston University, USA & Kay M. Stanney, University of Central Florida, USA*

#### Issues and Non-Issues in the Production of High-Resolution Auditory Virtual Environments

F. Wightman & D. Kistler, University of Wisconsin-Madison, USA & P. Zahorik, University of California Santa Barbara, USA

#### Rendering Sound Sources in High Fidelity Virtual Auditory Space: Some Spatial Sampling and Psychophysical Factors

S. Carlile, C. Jin & J. Leung, University of Sydney, Australia

#### Creating Three Dimensions in Virtual Auditory Displays

B. Shinn-Cunningham, Boston University, USA

#### Creating Auditory Presence

R.H. Gilkey, Wright State University, USA; B.D. Simpson, Veridian Inc., USA & J.M. Weisenberger, Ohio State University, USA

#### Using Virtual Auditory Environments to Study Sound Localization

K. Hartung, University of Connecticut Health Center, USA

#### The Role of System Latency in Multi-Sensory Virtual Displays for Space Applications

E.M. Wenzel, NASA Ames Research Center, USA

# nical Sessions

FRIDAY • 8–10 am continued

## Web Site Designers 3

## Sociotechnical Systems Design and Development

## HCI Medley 2

## Human Centered Design

## Visual Interface Aspects

### **Emerald Room**

### **Wildcatter Room**

### **Mayor's Chamber**

### **Explorer's Room**

### **Creole Room**

Chair: *TBA*

#### **Evaluating Visualizations: A Method for Comparing 2D Maps**

T. Mandl, University of Hildesheim, Germany & M. Eibl, Social Science Information Center, Germany

#### **Interaction with WWW Using Voice**

J. Poon, University of Queensland, Australia

#### **Visual Information Retrieval for the WWW**

H. Reiterer, T.M. Mann & G. Mussler, University of Konstanz, Germany

#### **Toward a Human-Web Interface**

K. Zhang, University of Texas at Dallas, USA & J. Cao, Hong Kong Polytechnic University, Hong Kong

#### **iScape: A Collaborative Memory Palace for Digital Library Search Results**

K. Borner, Indiana University, USA

#### **User Behavior in Hypertext Based Teaching Systems**

A. Naumann, J. Waniek, J.F. Krems & D. Hudson-Ettle, Chemnitz University of Technology, Germany

#### **Mutual Evaluation and Situation Map to Encourage the Participation in Web-based Conferencing**

Y. Shibuya & Y. Tsujino, Kyoto Institute of Technology, Japan

#### **MURBANDY: A Dynamic One-Screen User Interface to GIS Data**

M. Stempfhuber & B. Hermes, Social Science Information Center, Germany; L. Demicheli & C. Lavallo, SSSA Unit, Italy

Chair: *Eberhard Ulich, Swiss Federal Institute of Technology, Switzerland*

#### **Sociotechnical Systems Development and Concurrent Engineering**

P. Brodner, Institute for Work & Technology, Germany

#### **Sociotechnical Thinking for E-Business**

C. Clegg, University of Sheffield, United Kingdom

#### **Sociotechnical Systems Design in Hospitals**

S. Peter, Institute for Work Research & Organizational Consultancy, Switzerland

#### **Chaordic Thinking for Organizational Transformation: A Next Phase or Sudden Death for Sociotechnical Systems Design?**

F.M. Van Eijnatten, Eindhoven University of Technology, The Netherlands

#### **Means of Organizational Memory to Increase the Redundancy of Functions in Work Systems**

M. Vartiainen & J.J.J. Kasvi, Helsinki University of Technology, Finland

#### **Temporal Planning and Scheduling from a Sociotechnical Perspective—From HCI to OCI**

T. Waefler, Swiss Federal Institute of Technology, Switzerland

Chair: *TBA*

#### **Knowledge Coordination and Synchronization in Distributed Supervisory HCI**

B. Caldwell, Purdue University, USA

#### **Preserving the Freedom of Paper in a Computer-Based Sketch Tool**

C. Alvarado & R. Davis, MIT, USA

#### **Computer Method of Establishing the Foetus' and Infants' Age**

B. Gworys, Wroclaw Medical University, Poland

#### **Small User Interfaces: Challenges in Designing Holistic Mobile User Experience**

K. Konkka, Nokia Mobile Phones, Finland

#### **Flat Panel Potential for Conformance to the Display Location Requirements of ISO 9241 Parts 3 & 5**

D.R. Ankrum, Nova Solutions, Inc., USA

Chair: *Peter Kern, Fraunhofer IAO, Germany*

#### **Towards Human-Centred Requirements Management in Distributed Design**

M. Johnson, Helsinki University of Technology, Finland

#### **What do Users Actually Evaluate when Evaluating Computer Programs? Defining the Dimensions in HCI by Qualitative Attitude Research**

S. Tamminen, Software Business & Engineering Institute, Finland

#### **Toward a Human Factor Design Framework to Support the Design of Flight Decks**

F. Buratto, EADS Airbus SA, France; M. Chater & R. Israel, Eurisca, France

#### **EmuGen: A Generator for Multiple-User Interfaces**

A. Brandl, Technical University of Munich, Germany

#### **Finnish ERP Solutions—End-User Experiences on Implementation and Performance**

P. Makela, Helsinki University of Technology, Finland

#### **Analysis, Design and Evaluation of User-Centered Engineering Tools in Industrial Automation**

A. During, T. Komischke & C. Wittenberg, Siemens AG, Germany

Chair: *Takao Ohkubo, Nihon University, Japan*

#### **Life-Like Agent Interface on a User-Tracking Active Display**

H. Dohi & M. Ishizuka, University of Tokyo, Japan

#### **Realistic 3D Facial Expression Modeling for Man-Machine Interaction**

Y. Zhang & E. Sung, Nanyang Technological University, Singapore

#### **Integrated Multimedia Recognition and Motion Synthesis for Generation of 3D Sign-Language Animations**

T. Ozawa, Ryukoku University, Japan

#### **CRT Screens or TFT Displays? A Detailed Analysis of TFT Screens for Reading Efficiency**

M. Ziefle, RWTH Aachen, Germany

#### **Pictures in Mobile Communication**

P. Isomursu, Nokia Corporation, Finland & M. Makarainen, Solid, Finland

#### **Micro Teleoperation System Considering Visual Registration**

A. Sano, H. Fujimoto & T. Kitagawa, Nagoya Institute of Technology, Japan

UAHCI

Interface Issues

Learning and Education for Children

Intelligent Interfaces for Universal Access: Challenges and Promise  
1

Community, Culture and Society

University Room

Orleans Room

Bayou 1

Bayou 2

Chair: *Eui H. Park*, North Carolina A&T State University, USA

Chair: *Mark Lehto*, Purdue University, USA

Chairs: *Elisabeth Andre*, German Research Center for Artificial Intelligence GmbH, Germany; *Mark Maybury*, The MITRE Corporation, USA; & *Thomas Rist*, German Research Center for Artificial Intelligence GmbH, Germany

Chair: *Dino Giuli*, University of Florence, Italy

**Interface Design of Video Scout: A Selection, Recording, and Segmentation System for TVs**

J. Zimmerman, Philips Research, USA; G. Marmaropoulos & C. van Heerden, Philips Design, USA

**A Framework for Personalizable Community Web Portals**

M.S. Lacher, M. Koch & W. Worndl, Technical University of Munich, Germany

**Intelligent Interfaces for Universal Access: Challenges and Promise**

M. Maybury, The MITRE Corporation, USA

**Community on a Usenet Group**

H. Patterson-McNeill, Texas A&M University-Corpus Christi, USA

**A Pattern-Supported Approach to the User Interface Design Process**

A. Granlund, Ericsson Radio Systems AB, Sweden; D. Lafreniere, GESPRO Technologies, Canada & D.A. Carr, Lulea University of Technology, Sweden

**Is Interactivity a Good Thing? Assessing its Benefits for Learning**

N. Otero, Y. Rogers & B. du Boulay, University of Sussex, United Kingdom

**Maximizing Educational Opportunity for Every Type of Learner: Adaptive Hypermedia for Web-Based Education**

P. Brusilovsky, University of Pittsburgh, USA

**ELAI: An Interface "Model" Towards Fostering Universalisation of Interfaces**

M.V. Ananthakrishnan, Tata Consultancy Services, India

**Effects of Time Delay and Manipulator Speed on a Telerobotic Peg-in-Hole Task**

J. Corde Lane, C.R. Carignan & D.L. Akin, University of Maryland, USA

**Graduating Assistance to the User in a Multimodal Educational System**

E. Godbert & J.-L. Massat, University of Marseille, France

**Intelligent Affective Interfaces: A User-Modeling Approach for Telemedicine**

C. Lisetti, M. Douglas & C. LeRouge, University of South Florida, USA

**Information Society and Competencies: Challenges for Higher Educational System and Companies**

E. Jarvenpaa & S. Immonen, Helsinki University of Technology, Finland

**Absolute Thresholds of Perception for Changes in a Graphical User Interface**

J.R. Dabrowski & E.V. Munson, University of Wisconsin-Milwaukee, USA

**Software Development for Problem Solving in Learning Contexts**

J. Barojas, F. Lara & F. Gamboa, Ciudad Universitaria, Mexico & E. Jimenez, Colegio de Bachilleres, Mexico

**Information Access for the Disabled: The Section 508 Mandate and its Implications for Intelligent Interface Development**

M. Peet, The MITRE Corporation, USA

**An Investigation into Attitudes to, and Experience of, Internet Shopping**

M. Maguire & L.-J. Pearce, Loughborough University, United Kingdom

**Extending Kaindl's Scenario-based Requirements Derivation Technique for User Interface Design**

G. Raikundalia, Swinburne University of Technology, Australia

**Designing eTui, A Computational Toy for Learning Reflection**

J. Blat & D. Griffiths, Universitet Pompeu Fabra, Spain; R. Millwood, K. Popat, C. Torres & W. Wang, Anglia Polytechnic University, United Kingdom

**Web-Based Characters for Universal Access: Experience with Different Player Technologies**

E. Andre, German Research Center for Artificial Intelligence GmbH, Germany

**From the Individual to Technology Towards the Global Network**

D. Giuli, University of Florence, Italy

**Assessing Head-Tracking in a Desktop Haptic Environment**

C. Raymaekers, J. DeBoeck & K. Coninx, Limburg University, Belgium

**Human Subjectivity and Relation Profiling Factors in the Global Network**

M.C. Pettenati & D. Giuli, University of Florence, Italy

**EasyCom: Designing an Intuitive and Personalized Interface for Unified Realtime Communication and Collaboration**

H. Hohl & M. Burger, Siemens AG, Germany

# nical Sessions

FRIDAY • 10:30 am–12 pm

FRI • 10:30 am–12 pm

## Pen-based Interfaces and Applications

### Wildcatter Room

*Chair: Masaki Nakagawa, Tokyo University, Japan*

#### Practicality of Handwritten Japanese Input Interface with and without a Writing Frame

H. Tanaka & K. Ishigaki, Fujitsu Labs Ltd., Japan

#### Programming Education on an Electronic Whiteboard Using Pen Interfaces

T. Ohara, N. Kato & M. Nakagawa, Tokyo University of Agriculture & Technology, Japan

#### Supporting Individual and Cooperative Work Using Scalable Pen Interfaces

Y. Otsuki, H. Bandoh, N. Kato & M. Nakagawa, Tokyo University of Agriculture & Technology, Japan

#### Pen-based Electronic Mail System for the Blind

N. Ezaki, Toba National College of Maritime Technology, Japan; K. Kiyota, Kumamoto National College of Technology, Japan & S. Yamamoto, Toyohashi University of Technology, Japan

#### User Adaptation in Handwriting Recognition by an Automatic Learning Algorithm

T. Yokota, S. Kuzunuki, K. Gunji & N. Hamada, Hitachi, Ltd., Japan

## Human-computer Interaction for Adaptive Learning Systems

### Emerald Room

*Chair: Celestine A. Ntuen, North Carolina A&T State University, USA*

#### Evidence of Human Cognitive Bias with Human-Computer Interaction

M.E. McBride & C.A. Ntuen, North Carolina A&T State University, USA

#### Human-Centered Design of a Non-Linear Tactical Map Display

D. Mountjoy, North Carolina A&T State University, USA; S. Converse, North Carolina State University, USA; W. Marshak, Sytronics, Inc., USA; C. Ntuen, North Carolina A&T State University, USA & J.R. Wilson, North Carolina State University, USA

#### Using Ecotopic Display to Support Adaptive Interaction with Computer Agents

C. Ntuen & E.H. Park, North Carolina A&T State University, USA

#### A Functionalist Approach to Usability Evaluation of Adaptive Learning Environment

B. Okoye, IBM, USA; C. Ntuen, North Carolina A&T State University & C. Plaisant, University of Maryland, USA

#### Lessons Learned from Usability Analysis of Adaptive Learning Simulation Environment

W.W. Winchester III & C.A. Ntuen, North Carolina A&T State University, USA; C. Plaisant, University of Maryland, USA & L. Reeves, North Carolina A&T State University, USA

## Virtual Reality Interface Methodologies for HCI

### Bayou 3

*Chairs: Yukiharu Ohga, Hitachi Ltd., Japan & Hidekazu Yoshikawa, Kyoto University, Japan*

#### Development of a Visual Display System for Humanoid Robot Control

H. Hoshino, K. Suzuki, T. Nishiyama & K. Sawada, Matsushita Electric Works Ltd., Japan

#### Virtual Collaborator as Personalized Interface Agent for Visualizing Plant Operator's Cognitive Behavior in NPP Plant Control Room

W. Wu & T. Nakagawa, Mitsubishi Electric Corporation, Japan; H. Ishii & H. Yoshikawa, Kyoto University, Japan

#### A System for Synthesizing Human Motion in Virtual Environment

H. Ishii, K. Sharyo, D. Komaki, & H. Yoshikawa, Kyoto University, Japan

#### Development of a Group Training System for Plant Workers Using Networked Virtual Environment

T. Nagamatsu, Kobe University of Mercantile Marine, Japan; M. Yamamoto, Kyoto University, Japan; S. Shiba, Kobe University of Mercantile Marine, Japan; I. Dajji & H. Yoshikawa, Kyoto University, Japan

#### Open Simulator: Architecture for Simulating Networked Virtual Environment by Utilizing Online Resources

M. Yamamoto & Y. Osaka, Kyoto University, Japan; T. Nagamatsu, Kobe University of Mercantile Marine, Japan; H. Ishii & H. Yoshikawa, Kyoto University, Japan

## Macroergonomics 3

### Gold Room

*Chair: Christian Korunka, University of Vienna, Austria*

#### The Implementation of Chip Card Technologies: Management Control and Employee's Control Perceptions

C. Korunka, University of Vienna, Austria & C. Haiden, Vienna University of Technology, Austria

#### Experiences in the Use of Integrated Information Systems in Lean Organizations

P. Seppala & S. Klemola, Finnish Institute of Occupational Health, Finland

#### Lilienthal—An Approach to Distance Learning for European Pilot Training

O. Strauss & S. Frings, Fraunhofer IAO, Germany

#### Computer-Supported Usability Evaluation in Field Settings Based on Visualization of User Actions and Mission History

J. Fransson, Swedish Defence Research Agency, Sweden & M. Axelsson, Virtual System Technology in Linkoping AB, Sweden

#### Task and Information Modeling for Cooperative Work

C. Foltz, S. Killich, M. Wolf, L. Schmidt & H. Luczak, Aachen University of Technology, Germany

#### Influence of Top-Down and Bottom-Up Information in Mobile Phone Answering Situation

L. Repokari, V. Salmela & K. Hyypa, Helsinki University of Technology, Finland

## Human-computer Interaction in Health Care

### Bayou 2

*Chair: Francois Sainfort, Georgia Tech, USA*

#### Evaluating the Human and Organizational Aspects of Information Technology Implementation in a Small Clinic

P. Carayon, University of Wisconsin-Madison, USA & P. Smith, University of Wisconsin Medical School, USA

#### Do Electronic Medical Records Improve the Quality of Medical Records?

B.-T. Karsh, J.W. Beasley & M.E. Hagenauer, University of Wisconsin-Madison, USA & F. Sainfort, Georgia Tech, USA

#### The Foundation of a Conceptual Framework for Individuals with Disabilities

J.A. Jacko, Georgia Tech, USA & H.S. Vitense, University of Wisconsin-Madison, USA

#### Impact of Information Technology on Breast Cancer Patient Decision Making

F. Sainfort, Georgia Tech, USA; B. Booske, D.H. Gustafson, F. McTavish & W.C. Chen, University of Wisconsin-Madison, USA

# Parallel Tech

FRIDAY • 10:30 am–12 pm continued

## Coordination Quality of Human and Automation

### Creole Room

*Chairs: Tetsuo Sawaragi & Hidekazu Yoshikawa, Kyoto University, Japan*

### Co-Adaptation of Human and Machine Autonomies Mediated by Ecological Environment

T. Sawaragi, Y. Horiguchi & Y. Suzui, Kyoto University, Japan

### Using Time Windows to Aid Situation Comprehension in a Highly Automated Control Environment

D. Bejarano & L. Rothrock, Wright State University, USA & J. Warner, Army Research Lab, USA

### Team Intention Inference for Intelligent Interfaces

T. Kanno, K. Furuta & K. Nakata, University of Tokyo, Japan

### Virtual Dialogue in Human-Machine Cooperation

L.H. Tsoukalas & R. Gao, Purdue University, USA

### Controlling Material Flow in Complex Socio-Technical Systems: The OSTO-TOC Approach in Comparison to Others

T. Buro, EADS Deutschland GmbH, Germany

## Job Stress, Electromyography, and Musculoskeletal Problems in Computer Work

### Orleans Room

*Chair: Lawrence M. Schleifer, University of Maryland, USA*

### EMG Gaps and Musculoskeletal Disorders in Computer Work

J.R. Cram, Sierra Health Institute, USA; L.M. Schleifer, T.W. Spalding, B.D. Hatfield & S. Kerick, University of Maryland, USA

### Cardiac Signal Artifact and the Interpretation of Trapezius Muscle Activity During Computer Work

T.W. Spalding, S. Kerick, B. Hatfield & L.M. Schleifer, University of Maryland, USA & J.R. Cram, Sierra Health Institute, USA

### Measurement of Trapezius and Forearm EMG Gaps or Micro-momentary Pauses During Computer Work

B. Hatfield, L.M. Schleifer, T.W. Spalding & S. Kerick, University of Maryland, USA & J.R. Cram, Sierra Health Institute, USA

### Muscle Activity of the Upper Extremities Under High and Low Mental Demands During Computer Work: Preliminary Findings

L.M. Schleifer, T.W. Spalding, B.D. Hatfield & S. Kerick, University of Maryland, USA & J.R. Cram, Sierra Health Institute, USA

### Discussant

Jackie Agnew, USA

## Existing Tools and Tools Needed for the Anthropometry of the Future (Panel Session)

### Mayor's Chamber

*Chairs: Marvin J. Dainoff, Miami University, USA & Kathleen Robinette, USA*

### A Web-Based 3D Glossary for Anthropometry Landmarks

S. Ressler, National Institute of Standards and Technology, USA  
M. Rioux  
K. Robinette  
M.J. Dainoff

## Gesture Interface

### Bayou 4

*Chair: TBA*

### Unconstrained Gesture Recognition

J. Bellando & R. Kothari, University of Cincinnati, USA

### Intermodal Differences in Distraction Effects While Controlling Automotive User Interfaces

M. Geiger & M. Zobl, Technical University of Munich, Germany; K. Bengler, BMW AG, Germany & M. Lang, Technical University of Munich, Germany

### An Intuitive Pen-Gestural Interface for Syntactic-Semantic Annotation of Non-Cursive Handwritten Input

J. Hunsinger, Technical University of Munich, Germany

### An Automatic, Adaptive Help System to Support Gestural Operation of an Automotive MMI

R. Nieschulz & M. Geiger, Technical University of Munich, Germany; K. Bengler, BMW AG, Germany & M. Lang, Technical University of Munich, Germany

## Nonvisual Mathematical Interactive Systems and Applications

### Tulane Room

*Chair: Gerhard Weber, Harz University of Applied Studies and Research, Germany*

### Computer Based Communication on and About Mathematics by Blind and Sighted People

W. Schweikhardt, Universitaet Stuttgart, Germany

### The Development of a Tool to Enhance Communications Between Blind and Sighted Mathematicians, Students and Teachers: A Global Translation Appliance

A. Karshmer, University of South Florida, USA; G. Gupta, University of Texas at Dallas, USA; K. Miesenberger, University of Linz, Austria; E. Pontelli, New Mexico State University, USA; & H.-F. Guo, State University of New York at Stony Brook, USA

### Teaching LaTeX to Blind and Visually Impaired Students at the University of Applied Sciences Giessen-Friedberg

E. Meyer zu Bexten & M. Jung, University of Applied Sciences Giessen-Friedberg, Germany

### Bringing Interactive Audio Documents to Life on the WWW

T.V. Raman & A.L. Diaz, IBM Research, USA

### A Multimedia Editor for Mathematical Documents

G. Weber, Harz University of Applied Studies and Research, Germany

# nical Sessions

FRIDAY • 10:30 am–12 pm continued

## UAHCI

### Intelligent Interfaces for Universal Access: Challenges and Promise 2

#### Bayou 1

Chairs: *Elisabeth Andre*, German Research Center for Artificial Intelligence GmbH, Germany; *Mark Maybury*, The MITRE Corporation, USA; & *Thomas Rist*, German Research Center for Artificial Intelligence GmbH, Germany

#### Human-Computer Collaboration for Universal Access

C. Rich, C. Sidner & N. Lesh, Mitsubishi Electric Research Laboratories, USA

#### Decision-Theoretic Approaches to User Interface Adaptation: Implications on Universal Access

V. Zarikas, A. Paramythis & C. Stephanidis, Foundation for Research and Technology-Hellas, Greece

#### Distributed User Modelling for Universal Information Access

J. Vassileva, University of Saskatchewan, Canada

#### Adaptable and Intelligent User Interfaces to Heterogeneous Information

M. Stempfhuber, Social Sciences Information Centre, Germany

#### Towards Services that Enable Ubiquitous Access to Virtual Communication Spaces

T. Rist, German Research Center for Artificial Intelligence GmbH, Germany

### Guidelines and Standards

#### University Room

Chair: *Gregg Vanderheiden*, University of Wisconsin-Madison, USA

#### Accessibility Through Standardisation

J. Gulliksen, Uppsala University & Royal Institute of Technology, Sweden; C. Lutsch, Icon Medialab AG, Germany; & S. Harker, Loughborough University, United Kingdom

#### Can Standards and Guidelines Promote Universal Access?

J. Ziegler, Fraunhofer IAO, Germany

#### A Proposed Standard for Consumer Product Usability

N. Bevan, Serco Usability Services, United Kingdom; & R. Schoeffel, Designafairs GmbH, Germany

#### Accessibility Guidelines: Current Status and Future Prospects in Standardization

C. Stephanidis, D. Akoumianakis & A. Savidis, Foundation for Research and Technology-Hellas, Greece

#### Development of Generic Accessibility/Ability Usability Design Guidelines for Electronic and Information Technology Products

G. Vanderheiden, University of Wisconsin-Madison, USA

### Architectures and Tools

#### Rex Room

Chair: *Georgios Kouroupetroglou*, University of Athens, Greece

#### The Dialog Tool Set: A New Way to Create the Dialog Component

G. Texier, L. Guittet & P. Girard, LISI/ENSMA, France

#### Remote Access to Public Kiosk Systems

K. Richter, Zentrum fuer Graphische Datenverarbeitung e.V., Germany

#### Towards a New Multi-Layer Approach for the Global Network Architecture

G. Vannuccini, P. Bussotti, M.C. Pettenati, F. Pirri & D. Giuli, University of Florence, Italy

#### Achieving Universal Access Through Web Services Architectures

C. Wiecha, S. Boies, M. Gaitatzes, S. Levy, J. Macnaught, P. Matchen, S. McFaddin, D. Mundel & R. Thompson, IBM T.J. Watson Research Center, USA

#### Managing Accessible User Interfaces of Multi-Vendor Components Under the ULYSSES Framework for Interpersonal Communication Applications

G. Kouroupetroglou, A. Pino & C. Viglas, University of Athens, Greece

### Software Support for Universal Design

#### Explorer's Room

Chair: *Jean Vanderdonckt*, Universite catholique de Louvain, Belgium

#### Automated Evaluation of Accessibility Guidelines

M. Cooper, CAST, USA

#### Modeling Preference for Adaptive User-Interfaces

J. Eisenstein, RedWhale Software, USA

#### Towards a General Guidance and Support Tool for Usability Optimisation

C. Farenc, P. Palanque, University of Toulouse I, France; C. Bastien, INRIA & University of Rene Descartes, France; D. Scapin, INRIA, France; & M. Winckler, University of Toulouse I, France

#### Appliance Independent Specification of User Interfaces by XML—A Model-Based View

P. Forbrig, A. Mueller & C. Cap, University of Rostock, Germany

#### Mechanization of Web Design Guidelines Evaluation

C. Mariage & J. Vanderdonckt, Universite catholique de Louvain, Belgium

# Parallel Tech

FRIDAY • 1:30–3 pm continued

**Non-traditional Interfaces**

**Emerald Room**

*Chair: Aaron Steinfeld, Human Factors, USA*

**Knowledge Discovery in Human-Machine Systems**

J. Murray, Pacific Consultants LLC, USA; T.J. Ayres, Exponent, USA & M.M. Gross, EPRI, USA

**Designing Mobile Applications: Challenges, Methodologies, and Lessons Learned**

R. Longoria, Oracle Corporation, USA

**Lessons Learned in Developing Human-Computer Interfaces for Infantry Wearable Computer Systems**

T.V. Hromadka III, Exponent, USA

**Recent Investigations of User Interface Improvements for a Military Wearable Computer System**

L.E. Stallman, Exponent, USA

**Tools for Web Site Metrology**

**Explorer's Room**

*Chairs: Jean Vanderdonck, Universite catholique de Louvain, Belgium & Anke Ahrend, User Interface Design GmbH, Germany*

**The Relation of Usability and Branding of Financial Web Sites**

S. Duda, M. Schiessl & R. Fischer, Eye Square GmbH, Germany

**Log Files Analysis to Measure the Utility of an Intranet**

S. Vokar, C. Mariage & J. Vanderdonck, Universite catholique de Louvain, Belgium

**Too Many Tools—Overtooling the Web: A Usability Study on Internet Viewbars**

A. Ahrend, User Interface Design GmbH, Germany & S. Duda, Eye Square GmbH, Germany

**WebSCORE—A Structured Method for Evaluating Web Applications**

F. Heidmann, J. Ziegler & M. Peissner, Fraunhofer IAO, Germany

**Some Preliminary Investigation about the Organization of User Interface Design Guidelines**

Q. Limbourg, Universite catholique de Louvain, Belgium

**A Corpus of Design Guidelines for Electronic Commerce Web Sites**

C. Pribeanu, C. Mariage & J. Vanderdonck, Universite catholique de Louvain, Belgium

**Nonverbal Communication**

**Gold Room**

*Chair: Tomio Watanabe, Okayama Prefectural University, Japan*

**A Study on Real-time Gesture Classification Method**

H. Shimoda, T. Sasai & H. Yoshikawa, Kyoto University, Japan

**Facial and Head Movements of Sign Interpreters and Their Application to Japanese Sign Animation Synthesis**

S. Kawano & T. Kurokawa, Kyoto Institute of Technology, Japan

**Non-Verbal Communication System in Cyberspace**

S. Morishima, Seikei University, Japan

**Embodied Interface for Emergence and Co-share of "Ba"**

Y. Miwa, S. Wesugi, C. Ishibiki & S. Itai, Waseda University, Japan

**E-COSMIC: Embodied Communication System for Mind Connection**

T. Watanabe, Okayama Prefectural University, Japan

**Next Big Things That Weren't: Lessons for Human Factors Experts**

**Orleans Room**

*Chair: Thomas Whalen, Communications Research Center, Canada*

**North American Videotex: Bringing Computer Networks to the Public Too Soon**

E. Lee, St. Mary's University, Canada

**From Big Screen to Little Screen: What ITV (or VOD) Can Tell Wireless Devices**

K. Lynch, NerveWire Inc., USA

**From the Ashes of Disaster into a Human Factors Boom: The Legacy of Large Databases**

G. Lindgaard, Carleton University, Canada

**Political, Social and Commercial Problems of Rolling Out ISDN in the UK**

J. Griffiths, University of London, United Kingdom

**What is 3-D Good for Anyway?**

S.J. Mountford, IDBIAS, USA

**Next Big Things That Were Not**

T.E. Whalen, Communications Research Center, Canada

**Multi-media**

**Bayou 3**

*Chair: TBA*

**Why Do Experts Predict False Alarms? An Empirical Investigation into the Validity of Expert Evaluations of Instructional Multimedia Software**

M. Dimitrova, H. Sharp & S. Wilson, City University London, United Kingdom

**Role of Verbal Information in Multi-Media Communication**

T. Katsumi, Kyoto Institute of Technology, Japan

**Wireless Interaction for Large Screen Displays**

W.D. Bora, P.A. Jedrysik, J.A. Moore & T.A. Stedman, Air Force Research Lab, USA

**The AOF (Authoring on the Fly) System as an Example for Efficient and Comfortable Browsing and Access of Multimedia Data**

W. Huerst & R. Mueller, University of Freiburg, Germany

**Combining Speech with Sound to Communicate Information in a Multimedia Stock Control System**

D. Rigas, University of Bradford, United Kingdom; H. Yu, University of Exeter, United Kingdom; D. Memery & D. Howden, University of Bradford, United Kingdom

# nical Sessions

FRIDAY • 1:30–3 pm continued

UAHCI

News on Agent-based Information Retrieval

Software Interface

Macroergonomics  
2

Interaction Technologies  
3

University Room

Rex Room

Bayou 4

Bayou 1

*Chair: Vassillis Moustakis, Foundation for Research and Technology-Hellas, Greece*

### Information Agents in Astronomy

A. Accomazzi, M.J. Kurtz, G. Eichhorn, C.S. Grant & S.S. Murray, Harvard University, USA

### Interactive Visual User Interfaces to Databases

T. Taskaya, P. Contreras, T. Feng & F. Murtagh, Queens University Belfast, United Kingdom

### Textual Document Mining Using a Graphical Interface

G. Hubert, J. Mothe & A. Benammar, IRIT, France; T. Dkaki, Universite R. Schuman, France; B. Dousset & S. Karouach, IRIT, France

### Users Bootstrap Better Searching the Web Through Interactive Agents Supporting Personalisation and Experience Sharing

K. Englemeier, German Institute for Economic Research, Germany; J. Mothe, IRIT, France & B. Pauer, German Institute for Economic Research, Germany

### Mining Coherence in Time Series Data

G. Potamias, University of Crete & V. Moustakis, Foundation for Research and Technology-Hellas, Greece

### Using Analytic Hierarchy Process to Assess WWW Site Effectiveness

V. Moustakis, L. Tsironis, C. Litos & A. Dalivigas, Technical University of Crete, Greece

### How to Integrate Different Text Data and Fact Information: A Conceptual Transfer Problem in Digital Libraries and its Connection to Agent Theory

J. Krause, University of Koblenz-Landau, Germany

### User Interest Correlation Through Web Log Mining

F. Tao, P. Contreras, B. Pauer, T. Taskaya & F. Murtagh, University Belfast, United Kingdom

### Relationship Between Comprehensibility of Icon Pictures and Design Factors for Drawing Visual Objects

K. Morimoto, Kyoto Institute of Technology, Japan

### ACTIVE-UI: An Synthetic Approach of Personalization of Software Tools Using Stochastic Processes

A. Kunzer, C. Schlick & H. Luczak, Aachen University of Technology, Germany

*Chair: TBA*

### HCI Challenges in Designing for Users with Disabilities

J.C. Muzio & M. Serra, University of Victoria, Canada

### Mathaino: Simultaneous Legacy Interface Migration to Multiple Platforms

R.V. Kapoor & E. Stroulia, University of Alberta, Canada

### A User Interface for Accessing to Information Spaces by the Manipulation of Physical Objects

M. Sugimoto, University of Tokyo, Japan; F. Kusunoki, Tama Art University, Japan & H. Hashizume, National Institute of Informatics, Japan

### Relationship Between Comprehensibility of Icon Pictures and Design Factors for Drawing Visual Objects

K. Morimoto, Kyoto Institute of Technology, Japan

### ACTIVE-UI: An Synthetic Approach of Personalization of Software Tools Using Stochastic Processes

A. Kunzer, C. Schlick & H. Luczak, Aachen University of Technology, Germany

*Chair: James McGlothlin, Purdue University, USA*

### Information Economics Based Strategies of Protecting Intellectual Property in the Internet Age

M. Nippa & J. Hachenberger, Freiberg University of Mining & Technology, Germany

### Creating the Customer Experience: Holistic Interaction Design from Website to Call Center and Beyond

N. Millard, BtexasCT Research, United Kingdom

### Technology Makes You Feel Better? Attempts to Mediate Social Support Through Technology in Health Care

M. Jakala & L. Mikkola, University of Jyväskylä, Finland

### The Effect of Air/Ground Data Link on Communication within the Cockpit

T. Mueller, Technical University of Berlin, Germany

### Managing User Interface Specifications in Distributed Development Environment: A Case Study

T. Koskinen, M. Nieminen & L. Repokari, Helsinki University of Technology, Finland

### Elearning Leverages Ebusiness

M. Schaefer, Fraunhofer IAO, Germany

*Chair: Julita Vassileva, University of Saskatchewan, Canada*

### Structureless, Intention-Guided Web Sites: Planning Based Adaptation

M. Baldoni, C. Baroglio & V. Patti, Universita degli Studi di Torino, Italy

### Towards Emotive Captioning for Interactive Television

D. Fels, L. Polano, T. Harvey, S. Degan & C. Silverman, Ryerson Polytechnic University, USA

### Ubiquitous Access to Community Knowledge via Multiple Interfaces: Design and Experiences

A. Agostini, G. DeMichelis & M. Divitini, DISCO-University of Milano Bicocca, Italy

### Configuring Social Agents

C. Wiberg & M. Wiberg, Umea University, Sweden

### Affective Pedagogical Agents and User Persuasion

C. Okonkwo & J. Vassileva, University of Saskatchewan, Canada

# Parallel Technical Sessions

FRIDAY • 1:30–3 pm continued

UAHCI		EP&CE		
Transport Telematics	Design Methods for Universal Access in HCI and Their Applications	Non-visual Interaction 2	Call Center Design	Cognitive Processes
Creole Room	Wildcatter Room	Mayor's Chamber	Tulane Room	Bayou 2
<p><i>Chair: Angelos Bekiaris, Aristotle University of Thessaloniki, Greece</i></p> <p><b>In-Vehicle Trip Information for All</b> W. Bauer, H. Widroither, Fraunhofer IAO, Germany; &amp; E. Portouli, TRD S.A., Greece</p> <p><b>Evaluation of a Mobile Travel Information Service by Deaf and Mobility-Impaired Users</b> B. Peters, Linkoping Technical Institute &amp; Swedish National Road and Transport Research Institute, Sweden</p> <p><b>User Interfaces for Training E&amp;D Drivers</b> A. Naniopoulos, Aristotle University of Thessaloniki, Greece; &amp; M. Panou, TRUTH S.A., Greece</p> <p><b>In-Vehicle Telematic Systems HMI for Elderly Drivers</b> A. Coda, S. Damiani &amp; R. Montanari, Fiat Research Centre, Italy</p> <p><b>HCI Applications for Professional Driver Seats and Their Impact to Drivers' Health and Efficiency</b> A. Amditis, National Technical University of Athens, Greece; E. Bekiaris, Aristotle University of Thessaloniki, Greece; &amp; S. Sartor, ISRINGHAUSEN GmbH &amp; Co.KG, Germany</p>	<p><i>Chair: Toshiki Yamaoka, Wakayama University, Japan</i></p> <p><b>Case Study: Designing Universal Access for Intelligent Household Facilities</b> H. Kroemker, K. Kuhn &amp; N. Sandweg, Siemens AG, Germany</p> <p><b>Creating a New Approach to Design and a New Vision for Networked Appliances and Net-Based Services</b> N. Kihara, Matsushita Electric Industrial Co., Ltd., Japan</p> <p><b>Designing Multiuser Voice Control Interface for Home Entertainment System</b> S.-H. Hsu, L.-L. Chen, National Taiwan University of Science and Technology, Taiwan; &amp; Y.C. Chu, Philips Research East Asia, Taiwan</p> <p><b>Study on Menu Usability and Structural Analysis</b> T. Matsunobe, Wakayama University, Japan; &amp; H. Sato, Kyushu Institute of Design, Japan</p> <p><b>Making Products User-Friendly and Charming Using Human Design Technology</b> T. Yamaoka &amp; T. Matsunobe, Wakayama University, Japan</p>	<p><i>Chair: Anthony Savidis, Foundation for Research and Technology-Hellas, Greece</i></p> <p><b>Document Reader for the Blind</b> C. Asakawa, H. Takagi &amp; T. Itoh, IBM Japan Ltd., Japan</p> <p><b>Re-Inventing Icons: Using Animation as Cues in Icons for the Visually Impaired</b> S. Ludi &amp; M. Wagner, Arizona State University, USA</p> <p><b>The Practical Side of Teaching the Elderly Visually Impaired Users to Use the E-mail</b> T. Nishimoto, M. Araki &amp; Y. Niimi, Kyoto Institute of Technology, Japan</p> <p><b>Adapting Haptic Game Devices for Non-Visual Graph Rendering</b> P. Roth, University of Geneva, Switzerland; C. Giess, Deutsches Krebsforschungszentrum, Switzerland; L. Petrucci &amp; T. Pun, University of Geneva, Switzerland</p> <p><b>Page-Customization Allowing Blind Users to Improve Web Accessibility by Themselves</b> H. Takagi &amp; C. Asakawa, IBM Japan, Ltd., Japan</p> <p><b>Distance Communication System for the Blind Using Sound Images</b> M. Sugimoto, Nagano Prefectural College, Japan; K. Itoh, Shinshu University, Japan; &amp; M. Shimizu, Nagano Prefectural College, Japan</p>	<p><i>Chair: Erdmutha Meyer zu Bexten, Fachhochschule Giessen-Friedberg, BLIZ, Germany</i></p> <p><b>Ergonomic Design of Call Centers</b> D. Lorenz, University of Applied Sciences, Germany</p> <p><b>Noise in Call Centers</b> C. Sust, ABoVe Ltd., Germany</p> <p><b>Emotion and Stress in Call Centers</b> A. Utsch, ABoVe Ltd., Germany</p> <p><b>Considerations on Ergonomic Work Places for Blind and Visually Impaired Persons in Call Centers</b> M. Jung, University of Applied Sciences Giessen-Friedberg, Germany</p> <p><b>Call Centre—Vocational Integration and New Software Applications for Blind and Visually Handicapped People</b> K. Miesenberger, University of Linz, Austria; &amp; E. Meyer zu Bexten, Fachhochschule Giessen-Friedberg, BLIZ, Germany</p>	<p><i>Chair: Naomi Swanson, NIOSH, USA</i></p> <p><b>Development of a Real-time Thinking State Monitoring System for Plant Operation</b> H. Nishitani, Y. Yamashita &amp; T. Kurooka, Nara Institute of Science &amp; Technology, Japan</p> <p><b>Case Study: Incident Reporting in a Neonatal Intensive Care Unit</b> D.K. Busse, Glasgow University, United Kingdom</p> <p><b>Predicting Situation Awareness Errors Using Cognitive Modeling</b> T.D. Kelley, D.J. Patton &amp; L. Allender, Army Research Laboratory, USA</p> <p><b>Mental Prototyping in Developing Driving Assistance</b> M. van Ballgooy, Humboldt University, Germany</p> <p><b>Alarm Resolution Training and Job Aid for Explosives Detection System Operators</b> M.W. Dixon, Federal Aviation Administration, USA</p>

# Posters & Exhibition

WEDNESDAY & THURSDAY • 9 am–5:30 pm • FRIDAY • 9 am–3 pm • Imperial Room

All posters are on display during the three conference days.  
Authors will be present to discuss their posters at the day and times indicated.

## Exhibition

You are invited to visit the Exhibition Hall where the leading organizations and 140 posters will demonstrate the latest in HCI International 2001, universal access and cognitive ergonomics.

### Exhibitors

Human Systems IAC  
ICS-FORTH  
John Wiley & Sons  
Lawrence Erlbaum Associates  
Micro Analysis & Design  
Neutral Posture  
Siemens  
Taylor and Francis  
Trace R&D Center  
Usability Systems

## WEDNESDAY • 10–11:30 am & 2–3:30 pm

### A Dialog Model for Offering Task Completion for Complex Domains

M. Hofmann & Manfred Lang, Technical University of Munich, Germany

### Reaching Problem on Man Machine Interaction—Experiment Design About Checking Process

A. Tsubokura & N. Ashida, Osaka Electro-Communication University, Japan; K. Kozuki, Konami Co., Japan; & K. Tsushima, Osaka Electro-Communication University, Japan

### Gateway that Interconnects Heterogeneous Multi-Agent Systems

H. Suguri, Communication Technologies, Japan; E. Kodama & M. Miyazaki, Iwate Prefectural University, Japan

### Manufacturing Systems Focusing on Market Uncertainty and User Diversity

H. Fujimoto & A. Ahmed, Nagoya Institute of Technology, Japan

### Transparency of Meaning: Representative Heuristic Evaluation in Multimedia

F.V. Cipolla-Ficarra, F&F Multimedia Communications Corp., Italy

### A Study on the Population Stereotype of Korean Older People on Control Movement

K.-T. Jung, B.-H. Song & H.-K. Yun, Korea University of Technology and Education, Korea

### A New Mouse with Cursor Speed Control by Grasping Force

S. Sato & M. Kitajima, National Institute of Advanced Industrial Science and Technology, Japan; & Y. Fukui, University of Tsukuba, Japan

### Effects of the Visual Channel on Remote Cooperative Work

A. Obata & K. Watanabe, Fujitsu Laboratories, Ltd., Japan; & S. Kunifujii, Japan Advanced Institute of Science and Technology, Japan

### Man-Machine Interface in the Automation of Clinical Surgery

K. Shinohara, Y. Fujino, K. Shimomura, T. Hoshino & D. Hashimoto, Saitama Medical Center, Japan; & R. Kawano, Tokyo Electric Power Corporation, Japan

### The Limitations of the Capability of Human-Computer Interaction Methods in Support of the Analysis and Development of Interactive Systems

Y. Daabaj, The University of Salford, United Kingdom

### Usability Versus Actability: A Conceptual Comparative Analysis

P.J. Agerfalk, Orebro University, Sweden; & S. Cronholm, Linkoping University, Sweden

### Study on Design Method by Using Video User Scenario

K. Yamazaki, IBM Japan Ltd., Japan

### The Application of Ergonomics to the Design of Software for the Prediction of Human Physiological Limitations

P. Wadsworth & M. Llewellyn, Centre for Human Sciences, United Kingdom

### A Generic Operation Concept for an Ergonomic Speech MMI Under Fixed Constraints in the Automotive Environment

G. McGlaun & F. Althoff, Technical University of Munich, Germany; H.-W. Ruehl, Siemens VDO AG, Germany; M. Alger, Vodafone Pilotentwicklung GmbH, Germany; & M. Lang, Technical University of Munich, Germany

### Video Email for the Digital Set-top Box

A. Milewski, T. Smith, A. Basso, D. Weimer, B. Paul & G. Cash, AT&T Labs-Research, USA

### Implementation of a User Adapted UI Constructing System

T. Yamane, T. Mitsuishi, H. Ito, K. Sato, J. Sasaki & Y. Funyu, Iwate Prefectural University, Japan

### Developing a Decision Support Tool for Deciding Whether to Open a New Shop and How to Improve Existing Shops

Y. Taguchi, Shohoku College, Japan; & T. Tabe, Aoyama Gakuin University, Japan

continued on next page

## WEDNESDAY continued • 10–11:30 am & 2–3:30 pm

### **Factors Related to Computer Performance Among Middle-aged Learners**

H.L. Tsang & A.W.L. Chau, The University of Hong Kong, Hong Kong

### **Didactical Design of Web Based Communities of Learning**

T. Berger, Institute of Interdisciplinary Research, Germany; & L. Borgmann, University of Applied Sciences Koblenz/Remagen, Germany

### **Secretarious-Moderated, Collaborative Development of an Electronic Meeting Agenda**

G.K. Raikundalia, Swinburne University of Technology, Australia

### **Reading Online or on Paper: Which is Faster?**

S.H. Kurniawan & P. Zaphiria, Wayne State University, USA

### **Medical Incident Reporting and the Longitudinal Design Evaluation of Clinical Systems**

D.K. Busse, University of Glasgow, United Kingdom

### **Effect of Web Search Engine Design on User Performance and Preference**

D.N. Aurelio, Bose® Corporation, USA; & R.R. Mourant, Northeastern University, USA

### **The Color Placement Problem for Visualization and Conspicuity Model for Ease-of-Use Inference**

E. Cooper & K. Kamei, Ritsumeikan University, Japan

### **A Usability Study on Hand Gestures Controlled Operation of In-Car Devices**

M. Zobl & M. Geiger, Technical University of Munich, Germany; K. Bengler, BMW AG, Germany; & M. Lang, Technical University of Munich, Germany

### **Defining and Synthesizing Scenarios of Use**

K. Go & A. Imamiya, Yamaguchi University, Japan

### **Web-Based Information Management: An Open Portal Interface Solution**

L. Wroblewski, National Center for Supercomputing Applications, USA; & E.M. Rantanen, University of Illinois at Urbana-Champaign, USA

### **Effect of the Menstrual Cycle on Task Performance—Individual Difference and Temporal Variation for Workload**

K. Kasamatsu, S. Suzuki & M. Anse, Aoyama Gakuin University, Japan; M.F. Funada, Hakuoh University, Japan; & S.P. Ninomija, Aoyama Gakuin University, Japan

### **Effects of Disorientation on User Ability to Spatially Locate Objects: Comparing Human Spatial Information Processing in Virtual and Real Environments**

R.J. Brou, D.W. Carruth, R.J. Vickery, S.M. Doane & R.J. Moorhead, Mississippi State University, USA

### **Is It Possible to Measure Feelings Through ERPs?**

M.F. Funada, Hakuoh University, Japan; & S.P. Ninomija, Aoyama Gakuin University, Japan

### **An On-Road Investigation of Feedback and Cognitive Processing in Naturalistic Driving**

G.H. Walker, N.A. Stanton & M.S. Young, Brunel University, United Kingdom

### **Physiological and Psychological Evaluation of LCD, CRT and Different Sizes of Projected Displays on Users**

S. Chen, Tokyo Denki University, Japan; X. Ren, Kochi University of Technology, Japan; M. Hamatake, J. Fuse, S. Moriya & Y. Machi, Tokyo Denki University, Japan

### **A Recognition Method of Japanese Sign-Language Sentences Based on Head Movements**

H. Sagawa, A. Koizumi & M. Takeuchi, Multi-Modal Functions Hitachi Laboratory, Japan

### **A Proposal of a Retrieval Method Reflecting Individual Sensibility by Taste Analysis with Mediation Variables**

T. Mitsuiishi, K. Tada, J. Sasaki & Y. Funiyu, Iwate Prefectural University, Japan

### **Issues in the Handwriting Function of an On-Door Message Board on WWW**

N. Segawa, Tohoku University, Japan; Y. Murayama & M. Miyazaki, Iwate Prefectural University, Japan

### **Synchronous Management of Translation and Synonymy: Application—Construction of Bilingual Dictionaries French–Arabic and English–Arabic**

H. Achour, ISG, Tunisia; & F. Debili, IRMC Tunis, Tunisia

### **Does a Peripheral “Independent Visual Background” Reduce Scene-Motion-Induced Balance Disturbance in an Immersive Environment?**

H.B.L. Duh, D.E. Parker & T.A. Furness, University of Washington, USA

### **The Moving-Map Composer: A GUI-Based Map Design System for Navy Aviators**

S.A. Myrick, M.L. Gendron, M.C. Lohrenz & J.L. Watkins, Naval Research Laboratory, USA

### **The Effects of the Interactivity of On-Line Shopping on Consumer Choice**

M. Mizuno, Hakohodo Inc., Japan

### **Modernization in Air Traffic Control Systems—How to Increase Flight Safety**

L. Rebello, Univercidade, Brazil

### **Mobile Access to Travel Itinerary Information**

M. Masoodian & N. Lane, The University of Waikato, New Zealand

### **Ergonomics Training in Industrially Developing Countries (IDCs) via Online Learning**

M.E. Toro Troconis, Lulea University of Technology, Sweden & M.A. Rodriguez Iborras, ErgoWebDesigns Academy Ltd., United Kingdom

### **Using Analytic Hierarchy Process to Assess WWW Site Effectiveness**

V. Moustakis, L. Tsironis, C. Litos & A. Dalivigas, Technical University of Crete, Greece

### **A Scenario for the Role of Human-Computer Interaction in Providing Sustainable Accommodations for the New Economy**

U.-E. Haner, University of Stuttgart, Germany; J.W. Bakke, Telenor AS, Norway & P. Wheeler, DEGW plc, United Kingdom

### **A Model of Occupational Safety Management Based on Multimedia Technology: A Case of Machine Building Company**

G. Dahlke, A. Dahlke & Jasiak, Poznan University of Technology, Poland

### **An Evaluation of the Importance of Comprehension on Screen Legibility and Readability Tests**

L.E. Santa Maria, Pontifical Catholic University, Brazil

### **Developing a Package Program by Using Object-Oriented Programming Method Based on Air Quality Modeling of Sulphur Dioxide Pollution in Erzurum, Turkey**

Y.Z. Qyik, N. Demycyodlu & T. Tekyn, Ataturk University, Turkey

### **ImpactTV: Controlling Media with Physical Objects**

F. Mueller, MIT Media Lab, USA

### **Tele-show: A Multi-User Tele-Presence System via WWW**

Y. Xu, Zhejiang University, P.R. China

# Exhibition

Authors will be present to discuss their posters at the day and times indicated.

## THURSDAY • 10–11:30 am & 2–3:30 pm

### **The East European Sub-Group of International Forum of Educational Technology and Society: Problems and the Ways to Solve Them**

I. Galeev, V. Chepegin & S. Sosnovsky, Kazan State Technological University, Russia

### **Notational System and Statistical Analysis of NMS in JSL**

K. Kanda, Chukyo University, Japan; A. Ichikawa, Chiba University, Japan; Y. Nagashima, Kogakuin University, Japan; Y. Kato, TOPSL, Japan; M. Terauchi, Polytechnic University, Japan; D. Hara, Aichi Medical University, Japan; & M. Sato, Tokyo University of Technology, Japan

### **Evaluation of the Relaxation Effect of CG Image**

K. Tsuji, S. Niwa & K. Yokoyama, Nagoya City University, Japan

### **Third Generation Software for Learning Physics**

J. Barojas, F. Lara, F. Gamboa, J.L. Perez & N. Kemper, Ciudad Universitaria, Mexico; & G. Sierra, Institute of Engineering, UNAM, Mexico

### **Virtual Reality and Learning: Cognitive and Motivational Effects of Students' Sense of Presence**

R. Moreno, University of New Mexico, USA; & R.E. Mayer, University of California, USA

### **Software Agents in Multimedia: An Experimental Study of Their Contributions to Students' Learning**

R. Moreno, University of New Mexico, USA

### **Examination to Obtain the Optimum Auditory Presentation in Tele-Surgery System**

M. Ohkura & T. Oizuru, Shibaura Institute of Technology, Japan; & K. Mabuchi, The University of Tokyo, Japan

### **Accident Rates in Glass Cockpit Model U.S. Army Rotary-Wing Aircraft**

G.E. Adam, P.A. LeDuc, C.E. Rash & C.L. Suggs, U.S. Army Aeromedical Research Laboratory, USA; & S.D. Manning, U.S. Army Aviation Branch Safety Office, USA

### **Performance and Physiological Characteristics in Using a Pen-Tablet System During Pre and Post-Skill Processes**

K. Kotani, K. Horii & Y. Kitamura, Kansai University, Japan

### **Who's the User in User-Centred Design?**

P.J. Agerfalk, Orebro University, Sweden

### **A Generic User Interface Framework for Virtual Reality Applications**

F. Althoff, Technical University of Munich, Germany; T. Volk, Blaxxun Interactive, Germany; G. McGlaun & M.K. Lang, University of Munich, Germany

### **How Brazilian Web Sites Fail**

L.A. Caldas & A. Moraes, Pontificia Universidade Catolica do Rio de Janeiro, Brazil

### **Arab Proper Names Transcription**

E. Souissi & F. Debili, IRMC Tunis, Tunisia

### **Interactive Cardiovascular Tutoring Using Concept Map Construction**

I. Jeong, East-West University, USA; & M.W. Evens, Illinois Institute of Technology, USA

### **An Automated Testing Assistant Which Enforces Method Coverage in Testing Object-Oriented Programs**

I.S. Alkadi, Nicholls State University, USA; & G. Alkadi, Southeastern Louisiana University, USA

### **The Influence of a Wrongly Adjusted Table on the Firing Pattern in the Trapezius Muscle During Finger Tapping**

D. Zennaro, T. Laubli, P. Wellig, M. Schnoz & D. Krebs, Swiss Federal Institute of Technology, Switzerland; A. Klipstein, University Hospital Zurich, Switzerland; & H. Krueger, Swiss Federal Institute of Technology, Switzerland

### **Multimodal Interface for Supervisory Control Systems**

A. Zaatri, University of Constantine, Algeria

### **A System for Monitoring the Health Condition of Computer Users in Real Time**

C. Liu, Tokyo Denki University, Japan; X. Ren, Kochi University of Technology, Japan; & Y. Machi, Tokyo Denki University, Japan

### **Searching for a More Diversified View of Usability**

J. Syri & A. Salovaara, Nokia Research Center/Helsinki, Finland; S. Mizobuchi & F. Ichikawa, Nokia Research Center/Tokyo, Japan

### **Designing for Understanding: A Learner-Centered Approach to Multimedia Learning**

R. Moreno, University of New Mexico, USA

### **PC vs. MAC: How do the Users Adapt Themselves to a New Interface? A Case Study in Rio de Janeiro, Brazil**

M.A. dos Santos, F.J.S. Martins, R.C. do Rego & C.R. Mont'Alvao, Centro Universitario Carioca, Brazil

### **User Preferences for Web Sites**

L.A. Roberts & E.M. Silver, BellSouth, USA; C.A. Sikora & B. Kudrick, Lucent Technologies, USA; & M.C. Day, M.C. Day Consulting, Inc., USA

### **Interacting Through Multimedia**

M. Eibl, GESIS, Germany

### **Geogr'haptic: Using SVG and a Force Feedback Mouse to Enable Blind People to Access Geographic Web Based Documents**

B. Tornil & N. Baptiste-Jessel, IRIT-Equipe TOBIA, France

### **Measuring Presence in Virtual Environments**

R. Scheuchenpflug, Universitat Regensburg, Germany

### **A Proposal of Comfort-Structure Evaluation Method for Design of Products**

Y. Okada, Keio University, Japan; & K. Moriguchi, IBM Japan Ltd., Japan

### **Adapting to Context Through a Unified User Interface**

L.L. Davis, Tangis Corporation, USA

### **Virtual Table: Internet Tool for Personalized Interactive Learning**

T. Vladimir, G. Nikola & D. Davcev, University "St. Kiril & Metodij," Macedonia

### **Optimal Keyboard Layout for Handheld Devices**

J.Y.M. Chu, University of Wisconsin-Madison

### **Human Computer Interface and Persons with Special Needs**

K.Z. Ciantar, Malta

### **A Study on Media Retrieval Using Keywords Over WWW**

E. Kodama & M. Miyazaki, Iwate Prefectural University, Japan; M. Suzuki & S. Makino, Tohoku University, Japan

### **Online Course in Ergonomics: An Exploratory Study in Venezuela**

M.E. Toro Troconis, Lulea University of Technology, Sweden

### **Subtitles from Simultaneous Transdiction: Multi-Modal Interfaces for Generating and Correcting Real-Time Subtitles**

J. Hewitt & A. Bateman, University of Hertfordshire, United Kingdom; A. Lambourne, Synapsys Ltd., United Kingdom; K. Nobay & R. Hewitt, Nobay-Taylor Consulting, United Kingdom

### **A Magnetic Finger Tracker**

O. Cakmakci, Starlab NV/SA, Belgium

### **Enhanced Facial Feature Tracking for a Natural Model of Human Expressions**

A. Goneid & R. El Kaliouby, The American University in Cairo, Egypt

### **Analysis of Experimental Body Motions as a Basis for Nonverbal User Interfaces**

S. Watanabe & K. Nakamura, Nagaoka University of Technology, Japan

### **Distance Education in the Law Enforcement: Evaluating the First Steps**

F.L.G. da Silveira, Basic Education Division-PMSC, Brazil; J.L.G. da Silveira, Research Division-PMSC, Brazil; R.R. Schwarz, PPGEP/UFSC, Brazil; & N. Marcineiro, Research Division-PMSC, Brazil

### **Integrate User-Centered Design Approach into Software Development Lifecycle: Improving Usability of Interactive Software**

W. Xu, Intel Corporation, USA

### **Building an Online Community to Enhance a Digital Library for Cognitive Task Analysis**

L. Neal, EDS, USA; D. Anastasi & D. Miller, Aptima, Inc., USA

continued on next page

# Posters

WEDNESDAY & THURSDAY • 9 am–5:30 pm • FRIDAY • 9 am–3 pm • Imperial Room

THURSDAY continued • 10–11:30 am & 2–3 pm

## **Distance Education in the Police Enforcement Through Internet, in the Santa Catarina State—Brazil**

J.L.G. da Silva & N. Marcineiro, Research Division-PMSC, Brazil; L.H. de Mattos, PMSC/CEPM, Brazil; & F.L.G. da Silva, Basic Education Division-PMSC, Brazil

## **Cross-Devices Temporal and Spatial Continuity: Essential Aspects for Designing Everyday Digital Life**

Y. Kinoo, Hosei University, Japan

## **Bayesian Approach to Student's Knowledge Identification: Mathematical Model**

I. Galeev, V. Chepegin & S. Sosnovsky, Kazan State Technological University, Russia

## **An Application of Sociotechnical Systems Theory for Understanding User Centered Design of Information Systems**

J. Watson, University of Wisconsin-Madison

## **The Hidden Problems of Living with a CTD**

M. Kasdorf, University of Wisconsin-Madison, USA

## **Usability Testing Early in the Development Cycle**

D. Reed, California State University Long Beach, USA

## **Patterns of Internet Site Usage in a WebTV Health Recovery Environment**

B. Caldwell, Purdue University, USA & Michelle Rogers, University of Wisconsin-Madison, USA

## **On Research about Muscular Fatigue Using Indoor Thin Sole Shoes and Thick Sole Shoes**

H. Renshan, Aoyama Gakuin University, Japan

## **Design and Development of a Web Browser for the Internet Learning**

H. Sasaki, Takushoku University, Japan

## **Effects of Aesthetic Color Design of Graphical User Interfaces on Computer Users**

B. Laugwitz, Zuehlke Engineering GmbH, Germany

## **Evaluation Technique of Software Configuration Management**

J. Xizhe, Chungnam National University, South Korea

## **Heuristic Evaluation for Web Sites Interface Usability**

R. Santos & A. de Moraes, PUC-Rio, Brazil

FRIDAY • 10–11:30 am & 2–3 pm

## **Acquiring and Representing Know-How and Know-Why in On-Site Plant Operations**

O. Orapimpan, T. Kurooka, Y. Yamashita & H. Nishitani, Nara Institute of Science and Technology, Japan

## **A Method of Geometric Transformation for Spatial Partitioning Model**

K. Nishio, Toyohashi University of Technology, Japan; & K. Kobori, Osaka Institute of Technology, Japan

## **MEHEM for Quality in Multimedia System**

F.V. Cipolla-Ficarra, F&F Multimedia Communications Corp., Italy

## **Communication Quality in Multimedia**

F.V. Cipolla-Ficarra, F&F Multimedia Communications Corp., Italy

## **A Task- and Scenario-Based Analysis and Design Method for User-Centered Systems**

H. Kritzenberger & M. Herczeg, University of Luebeck, Germany

## **Internationalization and Localization of Products: Influences on the User Interface Engineering Process**

K. Roese, University of Kaiserslautern, Germany

## **Interface Redesign Issues for Intelligent Tutoring System**

A. Granic, University of Split, Croatia; & V. Glavinic, University of Zagreb, Croatia

## **Applying the ISO Software Ergonomic Standards: A Case History**

J.R. Williams, Telcordia Technologies, USA

## **CLASS/ROOM: An Interaction Architecture for Programming on Transferable Knowledge**

T. Harumoto & K. Kamejima, Osaka Institute of Technology, Japan

## **Participatory Design of an Online Greek Language Course**

P. Zaphiris, Wayne State University, USA; & G. Zacharia, MIT Media Laboratory, USA

## **Interface Usability and Human Computer Interaction: Ergonomics x Design x Informatics x Psychology x Semiotics**

A. de Moraes, Pontifical Catholic University, Brazil

## **SIG: Collective Intelligence via Robotic Communication**

K. Kamejima, Osaka Institute of Technology

## **Development of Usability Inventory for Chinese Webpages**

P.-H.P. Chan & A.W.L. Chau, University of Hong Kong, Hong Kong

## **Methods for Facilitation of Wizard-of-Oz Studies and Data Acquisition**

M. Geiger, R. Nieschulz, M. Zobl, R. Neuss & M. Lang, Technical University of Munich, Germany

## **Structure of In-Home Care Workers' Demands for Welfare Information**

M. Kato & H. Nishiguchi, Kyushu University of Nursing and Social Welfare, Japan

## **A New Theoretical Approach to Internet Applications Using the Holistic Concept of Man and the Theater Metaphor for Conscious Experience**

H. Vanharanta, Pori School of Technology and Economics, Finland; P. Pihlanto, Turku School of Economics and Business Administration, Finland; & A.-M. Chang, National Defense University, USA

## **Intellectual Property Protection for Program Code**

J.Y.M. Chu, University of Wisconsin-Madison, USA

# Exhibition

Authors will be present to discuss their posters at the day and times indicated.

## **Real Time Simplification in Polygon Environment**

T. Kanaya, Hiroshima International University, Japan; & K. Kobori, Osaka Institute of Technology, Japan

## **Human Interface for Motorcycle Safety Using Physiological Signals**

K. Maruyama, Nagoya City University, Japan; Y. Mizuno, Yamaha Motor Co. Ltd., Japan; K. Yokoyama & M. Yoshimura, Nagoya City University, Japan

## **To Partakement Communication—For Involved Organs in the Public Safety**

M. Pereira, CCI/PMSC-CEPM, Brazil; J.L.G. da Silveira, DIE/PMSC, Brazil; & F.L.G. da Silveira, PPGEP/UFSC, Brazil

## **Combining Multiple Input Modalities for Virtual Reality Navigation—A User Study**

F. Althoff, G. McGlaun, G. Spahn & M.K. Lang, Technical University of Munich, Germany

## **Usability Issues in the Development of an Immersive System for Visualization of 5D Sedimentation Models**

R.J. Vickery, R.J. Brou & D.W. Carruth, Mississippi State University; T.R. Keen, Naval Research Laboratory, USA; R.J. Moorhead & S.M. Doane, Mississippi State University, USA

## **The Use of a Focus Group to Supplement the Design of a Patient-Provider Web Resource**

S. Prady, Massachusetts General Hospital, USA; J. Lester, Massachusetts General Hospital & Harvard Medical School, USA; D. Norris, W. Waruingi & E. Schneider, Massachusetts General Hospital, USA

## **Navigation in Virtual Worlds via Natural Speech**

B. Schuller, F. Althoff, G. McGlaun & M. Lang, Technical University of Munich, Germany

## **PROCID Recommendations for Healthier Computer Work**

L. Sandsjo, National Institute for Working Life/West, Sweden; R. Kadefors, National Institute for Working Life/West & Chalmers University of Technology, Sweden; D. Zennaro, Swiss Federal Institute of Technology, Switzerland; & the PROCID Group

## **On a Method of the Reliability Analysis for HCI Task Based on the Relationship Between Fitts' Law and Accuracy**

S. Suzuki & K. Kasamatsu, Aoyama Gakuin University, Japan; M.F. Funada, Hakuoh University, Japan; Y. Yazu & S.P. Ninomija, Aoyama Gakuin University, Japan

## **Developing a Risk Analysis System for Ship Navigation Based on Cognitive Simulation**

T. Yamaguchi, Yamagata College of Industry and Technology, Japan; & K. Itoh, Tokyo Institute of Technology, Japan

## **Usability and Accessibility of Aging/Health-Related Web Sites**

P. Zaphiris & S.H. Kurniawan, Wayne State University, USA

## **Usability in Motion**

N.-B. Andersson, Boras University College, Sweden

## **An On-Line Evaluation of Cockpit Moving-Map Displays to Enhance Situation Awareness in Anti-Submarine Warfare and Mine Countermeasures Operations**

M.C. Lohrenz, M.E. Trenchard & S.S. Edwards, Stennis Space Center, USA

## **Usability Design for Information Systems for the Retrieval of Texts and Numerical Data**

D.-Wan Kim, PaiChai University, Korea; J. Krause, Social Science Information Centre & University of Koblenz-Landau, Germany; T. Mandl, University of Hildesheim, Germany; A. Schaefer & M. Stempfhuber, Social Science Information Centre, Germany

## **A Usability Designer at Work**

B. Goransson, Uppsala University, Sweden

## **A Study of Designing Graphical Display Based on Eye Movement**

K. Daiji, Science University of Tokyo, Japan

## **Incorporating Human Factors Engineering in System Analysis: A New Perspective**

Q. Chen, Montclair State University, USA

## **Interactive Simulation Implemented in Distributed Constraint-based Intelligent Conceptual Design**

Y. Xu, Zhejiang University, P.R. China

## **Research on Product Layout and Man-Machine Engineering Cooperative Design Model**

Y. Xu, Zhejiang University, P.R. China

## **The Hidden Problems of Living with Musculoskeletal Pain**

M. Kasdorf, University of Wisconsin-Madison, USA

## **The Design and Redesign of a Usable Web Site: A Case Study**

J. Sanchez, University of Chile, Chile

## **The Usability of Intelligent Vehicle Information Systems with Small Screen Interfaces**

C. Persaud, RCCL, USA

## **Web Based Software Architecture for Adaptable GUIs**

S. Schreiber-Ehle, Screen Paper Communication GmbH, Germany

# General Info

## Invitation-only Meetings

THURSDAY • 8:30 am–5:30 pm      FRIDAY • 8:30 am–5:30 pm

### Content Preparation

(Sponsored by Siemens)

### Loyola Room

Organizers & Chairs: **Robert Proctor** & **Gavriel Salvendy**, Purdue University, USA

### Organizational Learning Using the Intranet

(Sponsored by NASA)

### Loyola Room

Organizers & Chairs: **Julie Jacko**, Georgia Institute of Technical, USA & **Gavriel Salvendy**, Purdue University, USA

## Social Functions

Please bring your ticket(s) to board for each of the functions listed below. Most regretfully, without the ticket(s), you will not be able to participate. For all functions, buses will depart from the Baronne Street entrance of the hotel.

TUESDAY

### Conference Reception & Dinner Cruise: Rollin' on the River

Included in Conference registration fee. Extra tickets may be purchased for \$65 per person

Buses will depart for the boat between 6:45–7:15 pm and are scheduled to return to the hotel around 10:15 pm.

## Optional Excursions

Tickets are still available; please inquire at Registration.

WEDNESDAY

### Traditions of Mardi Gras

\$28.00 per person

Buses will depart at 9 am sharp and are scheduled to return to the hotel at 11:30 am.

WEDNESDAY

### Circling the Crescent City & Seafood Extravaganza

\$59.00 per person

Buses will depart at 5:45 pm sharp and are scheduled to return to the hotel at 9:45 pm.

THURSDAY

### Southern Country Plantations

\$59.00 per person

Buses will depart at 9 am sharp and are scheduled to return to the hotel at 4:30 pm

## HCI International 2003

The Tenth International Conference on Human-Computer Interaction, HCI International 2003, will take place jointly with the Symposium on Human Interface (Japan) 2003, the 5th International Conference on Engineering Psychology and Cognitive Ergonomics, and the 2<sup>nd</sup> International Conference on Universal Access in Human-Computer Interaction, in the island of Crete, Greece, 22-27 June 2003. The conference will cover a broad spectrum of HCI-related themes, including theoretical issues, methods, tools and processes for HCI design, new interface techniques and applications. The conference will offer a pre-conference program with tutorials and workshops, parallel paper sessions, panels, and exhibitions. For more information please visit the URL address: <http://hcii2003.ics.forth.gr>

### General Chair:

#### Prof. Constantine Stephanidis

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The proceedings will be published by Lawrence Erlbaum and Associates.

# Program Boards

## General Chair

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## Conference Administrator

### Kim Z. Gilbert

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## Program Chair

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## Program Administrator

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