

Final Program

# 2005 HCI International

11th International Conference on Human-Computer Interaction

jointly with

Symposium on Human Interface (Japan) 2005

6th International Conference on Engineering Psychology & Cognitive Ergonomics

3rd International Conference on Universal Access in Human-Computer Interaction

1st International Conference on Virtual Reality

1st International Conference on Usability and Internationalization

1st International Conference on Augmented Cognition

1st International Conference on Online Communities and Social Computing

**July 22–27, 2005**

**Caesars Palace • Las Vegas, Nevada USA**

Under the auspices of 9 distinguished international boards of 201 members from 31 countries



# Tutorials

Full Day

Half Day

Friday, July 22, 2005	8:30 am-5 pm	<p><b>1 Multimodal Interaction Design and Virtual Environments</b> Leah Reeves, Kay M. Stanney, Kelly Hale, and Satha Samman, University of Central Florida <b>Pisa</b></p> <p><b>2 HCI Innovations in Korea</b> Yong Gu Ji, Soongsil University; Wan C. Yoon, KAIST; Sung H. Han, POSTECH; Myung Hwan Yun, Seoul National University; Jiyoung Kwahk, Samsung Electronics Co., Ltd.; Changsu Kim, Samsung Advanced Institute of Technology; Sookyung, Cho, SK Telecom <b>Verona</b></p> <p><b>3 An Overview of Human Information Processing for Human-Computer Interaction</b> Robert W. Proctor, Purdue University; Kim-Phuong Vu, California State University <b>Palermo</b></p> <p><b>4 Augmented Cognition</b> Randy Pausch, Carnegie Mellon University; Dennis Proffitt, University of Virginia <b>Trevi</b></p>	Morning, 8:30 am-12 noon	<p><b>5 Introduction to Usability Testing</b> James R. Lewis, IBM <b>Milan</b></p> <p><b>6 Speech-Enabled Web Applications</b> James Larson, Intel Corporation <b>Messina</b></p>
		<p><b>7 Advanced Topics in Usability Testing</b> James R. Lewis, IBM <b>Milan</b></p> <p><b>8 Card-Sorting Method for Cluster Analysis of Information Architecture Design</b> Jianming Dong, eBay; Carol Righi, Righi Interface Engineering, Inc. <b>Messina</b></p>	Afternoon, 1:30-5 pm	
Saturday, July 23, 2005	8:30 am-5 pm	<p><b>9 A Practical Approach to Interactive System Design</b> Michael E. Atwood and Thomas T. Hewett, Drexel University <b>Trevi</b></p> <p><b>10 Mobile User-Interface Design: For Work, Home, and On the Way</b> Aaron Marcus, Aaron Marcus and Associates, Inc. <b>Milan</b></p> <p><b>11 Modeling Human Performance in Complex Information Systems</b> Ron Laughery and Dan Schunk, Micro Analysis and Design <b>Messina</b></p> <p><b>12 HCI Innovations in Japan</b> Katsunori Shimohara, Advanced Telecommunications Research Institute; Tomio Watanabe, Okayama Prefectural University; Kumiyo Nakakoji, University of Tokyo <b>Verona</b></p> <p><b>13 Setting Usability Performance Requirements Using the Common Industry Format</b> Nigel Bevan, Serco Usability Services <b>Pisa</b></p>	Morning, 8:30 am-12 noon	<p><b>14 Expediting the Usability Testing Process</b> Robert E. Bailey, Computer Psychology, Inc.; Kent N. Bailey, Mind Design Systems <b>Palermo</b></p> <p><b>15 An Introduction to Task Analysis</b> Neville A. Stanton, Brunel University <b>Turin</b></p>
		<p><b>17 The Disappearing Computer: Designing Interaction for Smart Artifacts</b> Norbert A. Streitz, Fraunhofer IPSI <b>Turin</b></p>	Afternoon, 1:30-5 pm	
Sunday, July 24, 2005	8:30 am-5 pm	<p><b>18 Cross-Cultural User-Interface Design: For Work, Home, and On the Way</b> Aaron Marcus, Aaron Marcus and Associates, Inc. <b>Milan</b></p> <p><b>20 Psychophysics for User Interface Design and Evaluation</b> Hong Z. Tan and Zygmunt Pizlo, Purdue University <b>Palermo</b></p> <p><b>21 Understanding Your Users</b> Kathy Baxter, Google; Catherine Courage, Salesforce <b>Verona</b></p> <p><b>23 HCI Themes for the Future: Social Creativity, Meta-Design, and End-User Development</b> Gerhard Fischer, University of Colorado-Boulder <b>Pisa</b></p>	Morning, 8:30 am-12 noon	<p><b>24 Designing for All: Methods, Tools, and Practice</b> Margherita Antona, Anthony Savidis, and Constantine Stephanidis, ICS-FORTH Greece <b>Turin</b></p>
		<p><b>26 Human Factors in Information Security</b> Eugene Schultz, University of California-Berkley; Robert Proctor, Purdue University; Kim Vu, California State University-Northridge <b>Turin</b></p>	Afternoon, 1:30-5 pm	

# Opening Session

Sunday, July 24, 2005 • 5:30–7 pm • **The Palace Ballroom**

Chair: *Ben Schneiderman* • University of Maryland, USA

## Keynote Address

Chair: *Dylan Schmorrow* • DARPA, USA

### **From Brain Dynamics to Consciousness: A Prelude to the Future of Brain-Based Devices**

**Dr. Gerald M. Edelman**

Nobel Laureate in Physiology/Medicine

Professor at The Scripps Research Institute

Chairman of the Department of Neurobiology  
at the University of California–San Diego

Author of over 500 research publications relating  
to the subject of the presentation.



## Movie Premier

Introduction by *Dylan Schmorrow* • DARPA, USA

### **The Future of Augmented Cognition** An Alexander Singer Film

A showcase of techniques soon to be improving  
performance on an exponential level everywhere.

### **Contents**

Conference at a Glance	2
Parallel Technical Sessions	
Monday	8
Tuesday	32
Wednesday	56
Special Interest Groups	81
Exhibition & Posters	82
Chairs & Program Boards	90
General Information	92
Registration	
Optional Tours	

## Gala Conference

# Reception

Sunday Evening • 7:15–9:15 pm • **Tiberius Ballroom**

Included in Conference registration fee. Extra tickets may be purchased for \$65 per person.

# Conference

Morning • 8–10 am

10:30 am–12:30 pm

Conference at a Glance

Monday, July 25, 2005

Registration • 7:30 am–6 pm					
AC	Multimodal Interfaces in the Human Computer Interaction • <b>Tiberius 7</b>	[8]	AC	Task Specific Information Processing in Operational and Virtual Environments • <b>Tiberius 7</b>	[14]
	Fundamentals of Augmented Cognition • <b>Tiberius 8</b>	[8]	AC	Context Modeling for Augmented Cognition • <b>Tiberius 8</b>	[14]
UAHCI	Computer Access for Impaired Users • <b>Claudius 2</b>	[8]	UAHCI	Design of Wireless and Mobile Services for Nomadic Users • <b>Claudius 2</b>	[14]
	Ergonomics and Computer • <b>Claudius 3</b>	[8]		Emerging Research Methods in UAHCI • <b>Claudius 3</b>	[15]
	Usability Testing of People with Disabilities • <b>Claudius 4</b>	[9]		User Interfaces for Real-Time Military Systems • <b>Claudius 4</b>	[15]
HCI	Designing an Aware Home • <b>Tiberius 1</b>	[9]	HCI	Interaction Design Education and Research: Current and Future Trends • <b>Tiberius 1</b>	[15]
	Designing Human-Centered Consumer Products and Services • <b>Tiberius 2</b>	[9]		Physiological Signals as Input in Human-Computer Interaction • <b>Tiberius 3</b>	[16]
	User Interface Design—Virtual & Web Design • <b>Tiberius 4</b>	[9]		Errors and Frustrations for Diverse User Populations • <b>Tiberius 2</b>	[16]
	Physi-Virtual Communities: Combining Virtual Communities with Periodic or Constant Face-to-Face Contact • <b>Tiberius 3</b>	[10]		Design of Mobile Devices • <b>Tiberius 4</b>	[16]
E&H	Use of ICT at Work and Well-Being • <b>Pisa</b>	[10]	E&H	Communication Systems and Security • <b>Tiberius 5</b>	[16]
	Satisfaction and Productivity • <b>Palermo</b>	[10]		Emotions in HCI • <b>Tiberius 6</b>	[17]
HIMI	Knowledge Management Tools 1 • <b>Turin</b>	[11]	E&H	Performance & Well-Being • <b>Palermo</b>	[17]
	Concepts for Knowledge Management • <b>Trevi</b>	[11]		HIMI	Work Organization Issues • <b>Pisa</b>
	Pen-Based UI and Applications • <b>Verona</b>	[11]	Knowledge Management Tools 2 • <b>Turin</b>		[17]
	Knowledge & Information • <b>Tiberius 6</b>	[12]	OCSC	Mobile Communities and their Place in the Online World: The User's Perspective • <b>Claudius 1</b>	[18]
Online Teaching Communities • <b>Claudius 1</b>	[12]	VR		Situational Awareness in Virtual Environments • <b>Trevi</b>	[18]
Real World Virtual Reality • <b>Tiberius 5</b>	[12]		Toward a Sickness-Free Virtual Environment • <b>Regalium</b>	[18]	
Portable Information Spaces: Architectures and Issues • <b>Majestium</b>	[12]		Ignoring Cybersickness Has Not Made It Go Away: Adverse Subjective, Physiological, Cognitive, or Performance Effects of Virtual Environments Exposure • <b>Majestium</b>	[19]	
U&I	Usability Engineering and VR • <b>Regalium</b>	[13]	U&I	Internationalization of Design and Usability Panel 1: Non-Usability Methods for Case Studies from the International Ethnography—Real Life Experiences in Industry • <b>Verona</b>	[19]
	International Requirements Engineering for Mobile Devices • <b>Naples</b>	[13]		Usability Practices in Asia • <b>Naples</b>	[19]
EPCE	Situation Awareness • <b>Genoa</b>	[13]	EPCE	Mobile Communication and Emotion • <b>Genoa</b>	[19]
SIG	Simulation Technology for Physical and Mental Health • <b>Forum Boardroom</b>				[81]

**AC** International Conference on Augmented Cognition • **UAHCI** International Conference on Universal Access in Human-Computer Interaction • **HCI** International Conference on Human-Computer Interaction • **VR** International Conference on Virtual Reality • **OCSC** International Conference on Online Communities and Social Computing • **E&H** Ergonomics & Health Aspects

# at a Glance

Afternoon • 1:30–3:30 pm

4–6 pm

Rooms are listed in **bold** • Session papers are listed on page in brackets [ ]

AC	Modulators of Human Information Processing in Realistic Environments • <b>Tiberius 7</b>	[20]	AC	Cognitive Foundations of Human Information Processing • <b>Tiberius 7</b>	[26]
	Issues of Trust in Adaptive Systems • <b>Tiberius 8</b>	[20]		Closed Loop Systems—Stability and Predictability • <b>Tiberius 8</b>	[26]
UAHCI	Facilitating Web Access for Older Adults • <b>Claudius 3</b>	[20]	UAHCI	Communication by Gaze Interaction—from AAC to Mainstream HCI • <b>Claudius 2</b>	[26]
	Building Bridges for All through Technology in Education and Testing • <b>Claudius 2</b>	[21]		Future Directions in Personalization and Context-Aware Access • <b>Claudius 3</b>	[26]
	Visual Information Acquisition and Cognition of Older Users • <b>Claudius 4</b>	[21]		Universal Access and Virtual Environments • <b>Claudius 4</b>	[27]
	The Trend of Universal Access Research in Asia • <b>Claudius 1</b>	[21]			
HCI	User Interface Design—Visual • <b>Tiberius 2</b>	[22]	HCI	Current Status of Usability Engineering in Japan • <b>Tiberius 1</b>	[27]
	Multimedia 1 • <b>Tiberius 3</b>	[22]		Theoretical and Practical Aspects of Advanced Interfaces • <b>Tiberius 2</b>	[27]
	Usability 1 • <b>Tiberius 4</b>	[22]		Towards Personalized HCI with the Use of Intelligent Agents • <b>Tiberius 3</b>	[27]
	The HCI of Information Visualization in Two- and Three-Dimensional Domains • <b>Tiberius 6</b>	[22]		Multimedia 2 • <b>Tiberius 4</b>	[28]
				Usability 2 • <b>Tiberius 5</b>	[28]
E&H	Telecommuting/Telework Programs: Benefits and Challenges of Working from Home • <b>Palermo</b>	[23]		Recognition Systems (Text, Graph, Tactile & Voice) • <b>Tiberius 6</b>	[28]
			E&H	Upper Extremity Disorders and Computer Work • <b>Palermo</b>	[28]
HIMI	Advanced Interfaces for Safety and Security 1 • <b>Turin</b>	[23]	HIMI	Interface Design • <b>Turin</b>	[29]
	Knowledge Management Tools 3 • <b>Trevi</b>	[23]		Mobile Device Interfaces • <b>Trevi</b>	[29]
	Knowledge Organization Tools • <b>Verona</b>	[23]		Advanced Interfaces for Safety and Security 2 • <b>Verona</b>	[29]
	Interface Design Concepts • <b>Pisa</b>	[24]			
OCSC	WWW-Based Communities • <b>Tiberius 5</b>	[24]	OCSC	Learning with Distant Collaborators in Higher Education • <b>Pisa</b>	[29]
				Social Computing • <b>Claudius 1</b>	[30]
VR	Virtual Design and Manufacturing • <b>Regalium</b>	[24]	VR	Virtual Environments as Training Tools • <b>Regalium</b>	[30]
	Panel: Using Game Engines to Build Virtual Training Applications for Education • <b>Majestium</b>	[24]		Perception and Interaction—Getting the Most out of a VR Application • <b>Majestium</b>	[30]
U&I	Cross-Cultural and Global User-Interface Design/Mobile UI Design • <b>Tiberius 1</b>	[25]	U&I	Usability, E-Learning Design and Internationalization • <b>Naples</b>	[31]
	Global Software Engineering Practices • <b>Naples</b>	[25]			
EPCE	Design of Personal Task Environments • <b>Genoa</b>	[25]	EPCE	Functionalist HCI • <b>Genoa</b>	[31]
SIG	Human Oriented Approach for Computer Embedded Environments • <b>Forum Boardroom</b>				[81]

Monday, July 25, 2005

Conference on Human-Computer Interface • **U&I** International Conference on Usability & Internationalization • **HIMI** Symposium on Human Interface (Japan) • of Work with Computers • **EPCE** International Conference on Engineering Psychology and Cognitive Ergonomics • **SIG** Special Interest Groups (panel discussions)

# Conference

Morning • 8–10 am

10:30 am–12:30 pm

		Registration • 7:30 am–6 pm	
Tuesday, July 26, 2005	AC	Human-Machine Symbiosis—Biological Interfaces • <b>Tiberius 7</b> [32] Neural Correlates of Cognitive State • <b>Tiberius 8</b> [32]	AC Adaptive User Interfaces • <b>Tiberius 7</b> [38] Augmented Cognition for Training Superiority and Education • <b>Tiberius 8</b> [38]
	UAHCI	Ambient Intelligence and Disability • <b>Claudius 2</b> [32] HCI for the Mobile Users • <b>Claudius 3</b> [33] Web Accessibility Methodologies and Tools • <b>Claudius 4</b> [33] Universal Interfaces • <b>Claudius 1</b> [33]	UAHCI Automatic and Manual Evaluation of Web Site Accessibility • <b>Claudius 1</b> [38] Inclusive Cognition: Exploring Cognitive Barriers to Universal Access • <b>Claudius 2</b> [38] Universal Access in Educational Human-Computer Interaction • <b>Claudius 3</b> [39] Universal Access Applications • <b>Claudius 4</b> [39]
	HCI	Cognitive Architectures in HCI • <b>Tiberius 1</b> [34] Virtual Engineering • <b>Tiberius 3</b> [34] User Interface Design—Motion • <b>Tiberius 4</b> [34] Intelligent/Adaptive Systems/Software • <b>Tiberius 5</b> [34] Explicit Comparisons of Mobile and E-Commerce from the User's Perspective • <b>Tiberius 2</b> [35] Usability 3 • <b>Tiberius 6</b> [35]	HCI Communicating with Computers: Natural Interaction • <b>Tiberius 1</b> [39] Display Design & Usability • <b>Tiberius 2</b> [39] Web Accessibility and Usability • <b>Tiberius 3</b> [40] User Interface Design—Display • <b>Tiberius 4</b> [40] Technology Interaction • <b>Tiberius 5</b> [40]
	E&H	Technology and Patient Safety • <b>Palermo</b> [35]	E&H Health Effects of Choices in the Office Work • <b>Palermo</b> [40]
	HIMI	Improving Usability • <b>Turin</b> [35] Examining a Variety of Interfaces • <b>Trevi</b> [36] Advanced Human Interface Technologies • <b>Verona</b> [36]	HIMI Patterns and Models for the Development of Interactive Systems • <b>Verona</b> [41] ECommerce/Shopping Concepts • <b>Turin</b> [41] HCI in Medical Environments and the Classroom • <b>Pisa</b> [41] Mobile Interactions • <b>Trevi</b> [42]
	OCSC	Experiencing the Online Community • <b>Pisa</b> [36]	OCSC Health Support Communities • <b>Tiberius 6</b> [42]
	VR	Multimodal Interaction • <b>Majestium</b> [37] VR and Emotional Content • <b>Regalium</b> [37]	VR Multimodal Virtual Environments • <b>Majestium</b> [42] VR Design and Manufacturing • <b>Regalium</b> [42]
	U&I	Ethnography and International Usability • <b>Naples</b> [37]	U&I Cross Cultural Design • <b>Naples</b> [43]
	EPCE	Human Factors in Broadcast • <b>Genoa</b> [37]	EPCE Human Factors Integration for Military Applications • <b>Genoa</b> [43]
	SIG	eWork: Trends and Challenges from the European Perspective • <b>Forum Boardroom</b> [81]	

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# at a Glance

Afternoon • 1:30–3:30 pm

4–6 pm

Rooms are listed in **bold** • Session papers are listed on page in brackets [ ]

AC	Neuroergonomics—Cognitive Human Factors • <b>Tiberius 7</b> [44]	AC	Wireless, Wearable & Rugged Sensors for Operational Environments • <b>Tiberius 7</b> [50]
	Engineering Modular Augmented Cognition Systems • <b>Tiberius 8</b> [44]		Affective Computing • <b>Tiberius 8</b> [50]
UAHCI	Accessing Learning Resources in Mobile Scenarios • <b>Claudius 2</b> [44]	UAHCI	Advances in New Learning • <b>Claudius 2</b> [50]
	Language Technologies in the Scope of Universal Access • <b>Claudius 3</b> [44]		Methods & Technologies for Personalized and Adaptive Web Interaction • <b>Claudius 3</b> [51]
	Speak Up and Be Heard: Speech in Human Computer Interfaces • <b>Claudius 4</b> [45]		Towards an Information Society for All • <b>Claudius 1</b> [51]
	Sensory Interfaces • <b>Claudius 1</b> [45]		Universal Design for Specific Situations • <b>Claudius 4</b> [51]
HCI	Non-Visual Access of Complex Document Components 1 • <b>Tiberius 1</b> [45]	HCI	Non-Visual Access of Complex Document Components 2 • <b>Tiberius 1</b> [52]
	Internet and Web • <b>Tiberius 2</b> [45]		Service Engineering & Decision Making • <b>Tiberius 2</b> [52]
	Robotics • <b>Tiberius 3</b> [46]		Audio/Visual Interaction and the Digital Arts • <b>Tiberius 3</b> [52]
	User-Centered Design 1 • <b>Tiberius 4</b> [46]		User Interface Design—Searching & Learning • <b>Tiberius 4</b> [52]
	Biometric Interfaces • <b>Tiberius 5</b> [46]		Input Device Design & Usability • <b>Tiberius 5</b> [53]
	Software Design & Usability • <b>Tiberius 6</b> [46]		User-Centered Design 2 • <b>Tiberius 6</b> [53]
E&H	Knowledge Work Ambience—Solutions for Better Quality and Performance • <b>Palermo</b> [47]	E&H	Methods of Work Environment Analysis • <b>Palermo</b> [53]
HIMI	Embodied Interaction and Communication • <b>Turin</b> [47]	HIMI	Information Life-Cycle in Collaborative Business Activities • <b>Turin</b> [53]
	Collaborative and Participative Processes • <b>Trevi</b> [47]		Delivering Health Care through Interactive Computer Technology • <b>Verona</b> [54]
	Case Studies of Human Factors R&D in the Far East • <b>Verona</b> [48]		The Connected Home—from an Organizational and Psychosocial Perspective Across Cultures • <b>Trevi</b> [54]
OCSC	Creativity and Innovation • <b>Pisa</b> [48]	OCSC	Cross-Cultural Online Communities • <b>Pisa</b> [54]
VR	VR And Mental Health Applications • <b>Regalium</b> [48]	VR	Conveying Emotion and Information with Sound • <b>Majestium</b> [55]
	Collaborative Virtual Environments • <b>Majestium</b> [49]		VR: Research and Development in China • <b>Regalium</b> [55]
EPCE	Human Performance in Safety-Critical Systems • <b>Genoa</b> [49]	EPCE	Modeling Driver Behavior for Human Centered Design in Advanced Assistance Automotive Environments • <b>Genoa</b> [55]
SIG	Information in Three Dimensional Space: Visuo-Spatial Cognition in New Media • <b>Forum Boardroom</b> [81]		

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# Conference

Morning • 8–10 am

10:30 am–12:30 pm

Wednesday, July 27, 2005

## Registration • 7:30 am–6 pm

AC	Functional Near Infrared Technologies for Assessing Cognitive Function • <b>Tiberius 7</b>	[56]	AC	EEG for Functional Operator State Assessment • <b>Tiberius 7</b>	[62]		
	Stress in the Computing Environment • <b>Tiberius 8</b>	[56]		Augmented Cognition and Its Influence on Decision Making • <b>Tiberius 8</b>	[62]		
	UAHCI	Older Adults, Speech Based Information Systems and Driving Safety • <b>Claudius 1</b>		[56]	UAHCI	On the Quest for Omnipresent Education • <b>Claudius 3</b>	[62]
		Accessibility for Users with Special Needs 1 • <b>Claudius 2</b>		[57]		Accessibility in the Context of Software Development Processes • <b>Claudius 2</b>	[62]
		Multilingual, Multimodal User Interfaces and Avatars • <b>Claudius 3</b>		[57]		Personalization Meets Accessibility • <b>Claudius 4</b>	[63]
		When Computer Games Meet Universal Access • <b>Claudius 4</b>		[57]		Generic Universal Design Methods • <b>Claudius 1</b>	[63]
	HCI	Human, Computer and Environment • <b>Tiberius 2</b>		[57]	HCI	Web Tools for Universal Access • <b>Pisa</b>	[63]
		Performance • <b>Tiberius 1</b>		[58]		User-Centered Design (for IT Industry) • <b>Tiberius 1</b>	[63]
		Internet/Web—Quality & Usefulness • <b>Tiberius 3</b>		[58]		Internet/Web—Visual & Audio • <b>Tiberius 2</b>	[64]
		HCI Learning/Education 1 • <b>Tiberius 4</b>		[58]		Mobile Commerce and Users • <b>Tiberius 3</b>	[64]
	E&H	Creating and Sustaining Ergonomic Programs in the Workplace • <b>Palermo</b>		[59]	E&H	User Interface Design • <b>Tiberius 4</b>	[64]
		Health and Psychosocial Aspects of Telework • <b>Palermo</b>		[65]		HCI & Learning/Education 2 • <b>Tiberius 5</b>	[64]
	HIMI	Methods and Techniques for the Analysis and Synthesis of Natural Modalities • <b>Turin</b>		[59]	HIMI	Health and Psychosocial Aspects of Telework • <b>Palermo</b>	[65]
		Knowledge Processes • <b>Verona</b>		[59]		Human Computer Interaction in Knowledge Management • <b>Verona</b>	[65]
		HCI in the Automotive Industry • <b>Trevi</b>		[60]		Accessibility in Japan—Technical Trend and Activity in Japanese Enterprises • <b>Trevi</b>	[65]
	OCSC	Computer Mediated Collective Action • <b>Tiberius 5</b>		[60]	OCSC	Networked Collaboration & Cooperation in Education • <b>Turin</b>	[66]
Virtual Reality—Learning Systems • <b>Tiberius 6</b>		[60]	Creating a Sense of Presence in Hybrid Spaces • <b>Tiberius 6</b>	[66]			
Benefits of Virtual Environments • <b>Majestium</b>		[60]	VR	Effective Use of VR • <b>Naples</b>		[66]	
VR Simulation & Modeling • <b>Regalium</b>		[61]		Beyond Sight & Sound: Virtual Representation and Multimodal Integration of Cutaneous, Kinesthetic, or Vestibular Cues • <b>Regalium</b>		[67]	
U&I	Simulated and Virtual Environments • <b>Pisa</b>	[61]	U&I	Virtual Reality—Modeling & Simulation • <b>Majestium</b>	[66]		
	Cultural Studies • <b>Naples</b>	[61]		EPCE	Cognitive Design Models • <b>Genoa</b>	[67]	
EPCE	Uninhabited Vehicles: Intelligent Behaviour and the Integration of the Human Element • <b>Genoa</b>	[61]	SIG		User Interface Development • <b>Forum Boardroom</b>	[81]	

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# at a Glance

Afternoon • **1:30–3:30 pm**

**4–6 pm**

Rooms are listed in **bold** • Session papers are listed on page in brackets [ ]

AC	Psycho-Physiological Sensor Technologies • <b>Tiberius 7</b>	[68]	AC	Transforming Sensors into Cognitive State Gauges • <b>Tiberius 7</b>	[74]
	Team Cognition • <b>Tiberius 8</b>	[68]		Future Applications of Augmented Cognition • <b>Tiberius 8</b>	[74]
UAHCI	Quality Models for Human-Computer Interaction • <b>Claudius 2</b>	[68]	UAHCI	Physiologically Based Human-Computer Interfaces • <b>Claudius 3</b>	[74]
	Personalised Interaction for Universal Access • <b>Claudius 3</b>	[68]		Accessibility for Users with Special Needs 2—Enhancing Lifestyles for the Elderly • <b>Claudius 2</b>	[75]
	Realizing Universal Design Based on Human Centered Design • <b>Claudius 4</b>	[69]		Rich User Interactions with Mobile Devices and Systems • <b>Claudius 4</b>	[75]
HCI	HCI & Special Populations • <b>Claudius 1</b>	[69]	HCI	HCI in the Medical Field • <b>Tiberius 1</b>	[75]
	Accessing Digital Libraries • <b>Tiberius 1</b>	[69]		Interactive Edutainment Applications • <b>Tiberius 2</b>	[76]
	Industrial Perspectives of HCI • <b>Tiberius 2</b>	[69]		Transportation • <b>Tiberius 3</b>	[76]
	Information Visualization • <b>Tiberius 3</b>	[70]		Modeling 2 • <b>Tiberius 4</b>	[76]
	User Interface Development • <b>Tiberius 4</b>	[70]		Ergonomics and Health Aspects of Work with Computers • <b>Naples</b>	[76]
	Modeling 1 • <b>Tiberius 5</b>	[70]			
E&H	Vision-Based Perceptive Interfaces for PC Interaction • <b>Tiberius 6</b>	[70]	E&H	Activity Theory • <b>Palermo</b>	[77]
	Does Visual Stress Influence Optometric Parameters and Muscle Load? • <b>Palermo</b>	[71]			
HIMI			HIMI	Measurement and Analysis of Driver's Behavior • <b>Turin</b>	[77]
	Human Factors Considerations in Web and Application Design • <b>Turin</b>	[71]		Human Interfaces for Risk Communication • <b>Trevi</b>	[77]
	Applications of Knowledge Tools • <b>Trevi</b>	[71]		HCI in MIS 2 • <b>Verona</b>	[78]
OCSC	HCI in MIS 1 • <b>Verona</b>	[71]	OCSC	Community Informatics: Beyond "Users" to "Communities": Designing Systems as though "Communities" Matter • <b>Claudius 1</b>	[78]
	Collective Creativity in Knowledge Work • <b>Pisa</b>	[72]			
VR			VR	Virtual Reality—Design • <b>Majestium</b>	[78]
	3D User Interface Design and Interaction Techniques in VE • <b>Majestium</b>	[72]		Virtual and Immersive Environments • <b>Regalium</b>	[79]
U&I	VR Applications • <b>Regalium</b>	[72]	U&I	VR Models • <b>Pisa</b>	[79]
	Cross-Cultural User-Centered Design • <b>Naples</b>	[73]		Cultural Difference and Ergonomic Design • <b>Tiberius 5</b>	[79]
EPCE			EPCE	Usability and Internationalization • <b>Tiberius 6</b>	[80]
	Cognitive Work Analysis and Design • <b>Genoa</b>	[73]		Engineering Psychology • <b>Genoa</b>	[80]

Wednesday, July 27, 2005

## AC

## Multimodal Interfaces in the Human Computer Interaction

### Tiberius 7

*Chair: Dennis Proffitt, University of Virginia, USA*

#### Implications of Compatibility and Cuing Effects for Multimodal Interfaces

Robert Proctor & Hong Tan, Purdue University, USA, Kim-Phuong Vu, California State University, Northridge, USA, Rob Gray, Arizona State University East, USA & Charles Spence, University of Oxford, United Kingdom

#### Multimodal Interfaces Improve Memory

Jeanine Stefanucci & Dennis Proffitt, University of Virginia, USA

#### Multi-Modal Interfaces for Future Applications of Augmented Cognition

Jack Vice, Anna Lockerd & Corinna Lathan, AnthroTronix, Inc., USA

#### Monitoring of Dual Coded Information: The Impact of Task Switching

David Kobus & Christine Brown, Pacific Science & Engineering Group, USA

#### Assessing Influences of Verbal and Spatial Ability on Multimodal C2 Task Performance

Leah Reeves, University of Central Florida & Design Interactive, Inc., Ali Ahmad, University of Central Florida, USA & Kay Stanney, University of Central Florida & Design Interactive, Inc., USA

#### Directing Visual Attention with Spatially Informative and Noninformative Haptic Cues

John Young & Hong Z. Tan, Purdue University, USA

## Fundamentals of Augmented Cognition

### Tiberius 8

*Chair: Amy Kruse, DARPA, USA*

#### Foundations of Augmented Cognition

Amy Kruse, DARPA, USA & Dylan Schmorrow, DARPA/IPTO, USA

#### Overview of the DARPA Augmented Cognition Technical Integration Experiment

Mark St. John & David Kobus, Pacific Science & Engineering Group, USA, Jeffrey Morrison, SPAWAR/SYSCEN-SD, USA & Dylan Schmorrow, DARPA/IPTO, USA

#### Performance Augmentation Through Cognitive Enhancement (PACE)

Nick Morizio, Michael Thomas & Patrice Tremoulet, Lockheed Martin, USA

#### Building Honeywell's Adaptive System for the Augmented Cognition Program

Patricia Ververs, Steven Whitlow, Michael Dorneich & Santosh Mathan, Honeywell Laboratories, USA

#### The Boeing Team Fundamentals of Augmented Cognition

Richard Barker & Richard Edwards, The Boeing Company, USA

#### DaimlerChrysler's Closed Loop Integrated Prototype: Current Status and Outlook

Wilhelm Kincses, DaimlerChrysler, Germany

#### The Cognitive Cockpit—A Test-Bed for Augmented Cognition

Blair Dickson, QinetiQ Ltd., United Kingdom

## UAHCI

## Computer Access for Impaired Users

### Claudius 2

*Chair: Simeon Keates, IBM TJ Watson Research Center, USA*

#### Using Pointing Devices: Difficulties Encountered and Strategies Employed

Jessica Paradise, Georgia Institute of Technology, USA, Shari Trewin & Simeon Keates, IBM TJ Watson Research Center, USA

#### Using Pointing Devices: Quantifying Differences Across User Groups

Simeon Keates & Shari Trewin, IBM TJ Watson Research Center, USA & Jessica Paradise, Georgia Institute of Technology, USA

#### A Model of Cursor Movement for Multiple Haptic Targets

Faustina Hwang, Patrick Langdon & P. John Clarkson, University of Cambridge, United Kingdom, & Simeon Keates, IBM TJ Watson Research Center, USA

#### Usable Personal Information Management Techniques for People with Low Vision

Silas Brown & Peter Robinson, University of Cambridge, United Kingdom

#### The Use of Computers in Rehabilitation

Ray Adams & Gill Whitney, Middlesex University, United Kingdom

#### Designing Usable and Accessible Public Information Systems

Rachel McCrindle, Aiden Caffrey, Mark Foyle, Julie Barrett, Darren Booy & Geoff Cook, The University of Reading, United Kingdom

## Ergonomics and Computer

### Claudius 3

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

#### Investigation of the CRM System in an Enterprise

Ewa Gorska & Jerzy Lewandowski, Warsaw University of Technology, Poland

#### Throw-Away Society and the Urban Explorer E-Capsule-Improvement of Reusable Building Structures Management

Leszek Swiatek, Technical University of Szczecin, Poland

#### The State of Ergonomics Consciousness of Participants of Didactic Process in Individual Assessment

Teresa Musiol, Silesian University of Technology, Poland

#### A Set of Rules Verifying the Appropriate Construction of Urban Space Elements in the Context of their Accessibility for the Disabled as an Ergonomic Checklist

Pawel Witczak, Technical University of Lodz, Poland

#### The Influence of Color on the Efficiency of the Work at the Computer

Edward Kowal & Slawomir Miedziarek, National University for Professional Education, Poland

#### "DOWNLOADING"—Computer Information System as a Factor of SME's Development

Mariusz Szczubelek, University of Kiel, Germany & Jerzy Olszewski, University of Economics, Poland

#### Forms of Necropolises in the Era of Computers

Tomasz Lewandowski, Technical University of Lodz, Poland & Jerzy Charytonowicz, Wroclaw University of Technology, Poland

#### Economic and Social Condition of the Software Quality Assessment

Katarzyna Lis & Jerzy Olszewski, University of Economics, Poland

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## HCI

### Usability Testing of People with Disabilities

#### Claudius 4

*Chairs: Chris Law & Andrew Sears, University of Maryland Baltimore County, USA & Julie Jacko, Georgia Tech, USA*

#### Issues in the Categorization of Disabilities for User Testing

Chris Law, Andrew Sears & Kathleen Price, University of Maryland Baltimore County, USA

#### Conducting Empirical Experiments Involving Participants with Spinal Cord Injuries

Jinjuan Feng, Andrew Sears & Chris Law, University of Maryland Baltimore County, USA

#### An Evaluation Framework Incorporating User Interface Accessibility

Alexandros Mourouzis, Margherita Antona, Evangelos Boutsakis & Constantine Stephanidis, FORTH-ICS, Greece

#### Remote User Testing of People with Disabilities

Mike Paciello, The Paciello Group, USA

#### Focus Groups with Participants who have Disabilities

Molly Story, Human Spectrum Design, USA

#### Conducting Simple Usability Studies with Users with Disabilities

Kara Pernice Coyne, Nielsen Norman Group, USA

### Designing an Aware Home

#### Tiberius 1

*Chair: Elizabeth Mynatt, Georgia Institute of Technology, USA*

#### The Aware Home Research Initiative: Charting a Multi and Interdisciplinary Research Agenda

Elizabeth Mynatt & Gregory Abowd, Georgia Institute of Technology, USA

#### Designing a Technology Coach for Older Adults

Anne Collins McLaughlin, Wendy Rogers, Arthur Fisk & Irfan Essa, Georgia Institute of Technology, USA

#### Where Scrapers Become Slingers: The Boundaries of Low and High Tech in Scrapbooking

Molly Stevens, Georgia Institute of Technology, USA

#### How an Older and a Younger Adult Adopted a Cooking Memory Aid

Quan Tran, Gina Calcaterra & Elizabeth Mynatt, Georgia Institute of Technology, USA

#### How Do Families Remember: An Initial Analysis of Diary and Interview Data

Jessica Paradise & Elizabeth Mynatt, Georgia Institute of Technology, USA

#### Designing Context-Aware Communication Mediators for Busy Families

Kristine Nagel & Gregory Abowd, Georgia Institute of Technology, USA

### Designing Human-Centered Consumer Products and Services

#### Tiberius 2

*Chair: Pei-Luen Patrick Rau, Tsinghua University, China*

#### A Collaborative Design Approach for Application Integration

Mayuresh Ektare & Yanxia Yang, Trend Micro, Inc., USA

#### Measuring Web Search Experience

Pei-Luen Patrick Rau & Aizhi Yang, Tsinghua University, China

#### Application of Gaze Analysis for Usability Testing of Information Appliances

Ki-Won Sung & Kun-Pyo Lee, KAIST, S. Korea

#### Multi-Mode Pointing Device for Mobile Terminals

Yang Wanli Winnie, Li Yan & Zheng Jinya, User Research Center of Legend, China

#### Dual-Modal Presentation of Hierarchical Relationship in Texts

Shuang Xu, Xiaowen Fang, Jacek Brzezinski & Susy Chan, DePaul University, USA

### User Interface Design—Virtual & Web Design

#### Tiberius 4

*Chair: Sebastiano Bagnara, Politecnico di Milan, Italy*

#### Search Information: A Case Study of the User Experiences with e-Library at Iowa State University

Shunghyun Kang, Iowa State University, USA

#### Towards a Generic Model for Specifying Different Views on the Dialog of Web-Applications

Stefan Betermieux, Birgit Bomsdorf & Patrick Langer, University of Hagen, Germany

#### Using Clusters on the Vivisimo Web Search Engine

Sherry Koshman & Amanda Spink, University of Pittsburgh, USA & Bernard Jansen, The Pennsylvania State University, USA

#### Development of a Usability Checklist for the 3D Interactive Contents on the Web Sites

Eun Ha Kim, Ingan Information Company, S. Korea & Jae Hee Park, Hankyong National University, Japan

#### Research on the Design of Pleasurable Website User Interface

Chien-Hsiung Chen & Bo-Ching Chiou, National Taiwan University of Science & Technology, Taiwan

#### How to Keep a Tourism Business Running by Taking Advantage of the Internet—The Case of “Pousadas de Portugal”

Adriana Corfu & Carlos Costa, University of Aveiro, Portugal

#### Flexible User Interfaces for the B2C Systems Using Booking as a Case Study

Kai Olsen, Molde College, Norway & Alessio Malizia, University of Rome, Italy

## HCI

### Physi-Virtual Communities: Combining Virtual Communities with Periodic or Constant Face-to-Face Contact

**Tiberius 3**

*Chair: Jonathan Lazar, Towson University, USA*

#### Lessons Learned in Implementing the CHIplace Online Community

Nishikant Kapoor, Dan Frankowski, Joseph Konstan & Loren Terveen, The University of Minnesota, USA

#### Can You Go Home Again?

**Trends of a Physi-Virtual Community over a 6-Year Period**  
Jonathan Lazar & Jason Kleinman, Towson University, USA

#### Using Delphi Method to Enhance Collaboration in Semi-Virtual Learning Communities

Yuanqiong Wang, Towson University, USA, Zheng Li, Pace University, USA, Murray Turoff, Starr Roxanne Hiltz & Xiang Yao, New Jersey Institute of Technology, USA

#### Recapturing What Was Lost: Re-Emphasizing Locality in Social Interactions on the Net

Wayne Lutters & Weimin Hou, University of Maryland Baltimore County, USA

#### Beyond W3C Guidelines: Building a Virtual Community for Blind and Seeing Children

Vanessa Evers & Christiaan Luteijn, University of Amsterdam, The Netherlands, Phia Damsma & John Norgaard, Sonokids.com, The Netherlands

#### Investigating the Impact of Usability of Hybrid Virtual and Physical Learning Environments

Gabriele Meiselwitz & Jonathan Lazar, Towson University, USA

## E&H

### Use of ICT at Work and Well-Being

**Pisa**

*Chairs: Kari Lindstrom, Finnish Institute of Occupational Health, Finland & Eila Jarvenpaa, Helsinki University of Technology, Finland*

#### eWork: Trends and Challenges from European Perspective

Pekka Huuhtanen, Finnish Institute of Occupational Health, Finland

#### Information and Communication Technologies (ICT) and Communication in Virtual Organizations

Eila Jarvenpaa, Eerikki Maki & Kirsi Ziegler, Helsinki University of Technology, Finland

#### Technology-Enabled Job ReDesign: The Perspectives of Job-Design Models and Stress Theories

Niina Rintala, Helsinki University of Technology, Finland

#### Empowerment Dimensions in the Use of Mobile Information Technology

Gunvor Gard, Lulea University, Sweden, Anita Melander-Wikman, Lulea University of Technology, Sweden & Marja-Liisa Majamaa, KemiTornio Polytechnic, Finland

#### IT System Changes During a Hospital Merger and Well-Being

Kari Lindstrom, Finnish Institute of Occupational Health, Finland

#### Implementation of a New Editorial System and Employees' Well-Being—A Follow-Up Study

Seppo Tuomivaara & Pentti Seppala, Finnish Institute of Occupational Health, Finland

#### Work Stressors of Women VDT Operators in Call Centers and Telecom Exchanges

Pranab Nag, Era Poddar & Anjali Nag, National Institute of Occupational Health, India

### Satisfaction and Productivity

**Palermo**

*Chair: Marvin Dainoff, Miami University, USA*

#### Does Playing with a Companion Animal During a Break Period Reduce Job Stress and Improve Work Performance for Computer Operators?

Ijii Ogawa, Teikyo University of Science & Technology, Japan

#### Using a More Complex Task to Compare Anisotropic Effects of LCD-TFT and CRT Screens

Thomas Groeger, Martina Ziefle & Sophie Oetjen, RWTH Aachen University, Germany

#### End User Perceptions of Electronic Medical Record Technology Implementation in Two Family Medicine Clinics

Folasade Sobande, Pascale Carayon, Paul Smith & Ann Schoofs Hundt, University of Wisconsin-Madison, USA

#### Job and Organizational Characteristics, QWL and Turnover Intention in the IT Work Force: The Role of Minorities

Peter Hoonakker, Pascale Carayon & Jen Schoepke, University of Wisconsin-Madison, USA

#### The Prevalence of Work Related Musculoskeletal Disorders

Sonja Pavlovic, Mirajub Grozdanovic & Dragutin Grozdanovic, University of Nis, Serbia and Montenegro

#### Prevalence of Musculoskeletal Disorders Among Office Workers in Singapore and its Relationship with Gender, Job Satisfaction and Perceived Work Stress

Patrick Ker, Singapore General Hospital, Singapore

#### Associated Effects of Shiftwork on Productivity & Health in Outbound Call Center Operations in the Philippines

Aura Matias, University of the Philippines, Philippines & Lualhati dela Cuesta, Qinteraction Philippines, Inc., Philippines

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

HIMI

## Knowledge Management Tools 1

### Turin

Chair: *Bernhard Zimolong, Ruhr University Bochum, Germany*

#### **A Hierarchical User-Driven Method for Association Rules Mining**

Olivier Couturier & Engelbert Mephu Nguifo, CRIL-Universite d'Artois, France & Brigitte Noiret, CEPDC-Caisse d'Epaigne du Pas de Calais, France

#### **Development of a Quake-Proof Information Inference System by Using Data Mining Technology**

Yufei Shu & Norihiro Nakajima, Japan Atomic Energy Research Institute, Japan

#### **Articulation Between Content and Document to Create Digital Documents**

Nicolas Esposito, University of Technology of Compiègne, France

#### **Development of Townscape Evaluation System for Colour Planning Support**

Yuichiro Kinoshita, Eric Cooper, Yukinobu Hoshino & Katsuari Kamei, Ritsumeikan University, Japan

#### **Intelligent Human Behavior Learning System for Smart Home**

Hyong-Euk Lee, Young-Min Kim & Z. Zenn Bien, KAIST, S. Korea

#### **An Accident Diagnosis Advisory System for Nuclear Power Plant Operation Support**

Seung Jun Lee & Poong Hyun Seong, Korea Advanced Institute of Science & Technology, Korea

#### **Synchronous Online Scheduling**

Lu Xiao, Pennsylvania State University, USA, Aaron Powell, Virginia Polytechnic Institute & State University, USA & Mary Beth Rosson, The Pennsylvania State University, USA

## Concepts for Knowledge Management

### Trevi

Chair: *Michelle Robertson, Liberty Mutual Research Institute for Safety, USA*

#### **Ontology-Based Information Retrieval to Support Patient Simulation in a Problem-Based Learning**

Injoo Kim, East-West University, USA, Yeongkwun Kim, Western Illinois University, USA & Martha Evens, Illinois Institute of Technology, USA

#### **Usability Engineering in the Area of Computerized Physician Order Entry**

Tobias Komischke, Siemens Medical Solutions, Germany

#### **Preliminary Findings on the Clinical Utility of an Unobtrusive Home Health Monitoring System**

Peter Woodbridge, Rousebush Veteran Affairs Medical Center, USA, J.P. Mellor, Rose-Hulman Institute of Technology, COUNTRY & Michael Weiner, Regenstrief Institute, Inc., COUNTRY

#### **Towards a Mapping Principle in Graphical Reasoning**

Erol Ozelik & Hasan Gurkan Tekman, Middle East Technical University, Turkey

#### **A Development of Pocket Museum for Spontaneous Learning over Cross Disciplinary Fields**

Naoyuki Abe, Yuki Higuchi & Takashi Mitsuishi, Tohoku University, Japan & Roberto Okada, Miyagi University, Japan

#### **Dynamic Action Inquiry: A Systems Approach for Knowledge Based Organizational Learning**

Anita Mirijamdotter, Lulea University of Technology, Sweden & Mary Somerville, California Polytechnic State University, USA

#### **Ergo-Monitor: Web Sites Environment Usability Monitoring Using the Log Files Analysis**

Marcelo Morandini & Andre Luiz Schwerz, State University of Maringa, Brazil, Walter Abreu Cybis, Federal University of Santa Catarina, Brazil & Heloisa Vieira da Rocha, State University of Campinas, Brazil

## Pen-Based UI and Applications

### Verona

Chair: *Masaki Nakagawa, Tokyo University, JAPAN*

#### **Qualitative Analysis of Effects of Handwritten Annotation on Intelligent Work**

Muhd Dzulkhiflee Hamzah, Shun'ichi Tano, Mitsuru Iwata & Tomonori Hashiyawa, University of Electro-Communications, Japan

#### **Implementation and Practical Evaluation of Memo-Based Information-Input Interface for Receptionists**

Kenji Nakajima, Naomi Iwayama, Hiroshi Tanaka, Katsuhiko Akiyama & Kazushi Ishigaki, Fujitsu Labs Ltd., Japan

#### **Pen-Based Notepad System for Visually Impaired Persons**

Nobuo Ezaki, Toba National College of Maritime Technology, Japan, Kimiyasu Kiyota, Kumamoto National College of Technology, Japan, Kousuke Nagano & Shinji Yamamoto, Toyohashi University of Technology, Japan

#### **Pen-Based Menu System for Visually Impaired**

Kimiyasu Kiyota & Risa Hirasaki, Kumamoto National College of Technology, Japan & Nobuo Ezaki, Toba National College of Maritime Technology, Japan

#### **User Interface for Accumulated -Ink Search**

Hideto Oda & Masaki Nakagawa, Tokyo University of Agriculture & Technology, Japan

#### **Distant Lecturing on an Electronic Whiteboard with Summary and Search Features**

Takeshi Sakurada, Hideto Oda & Masaki Nakagawa, Tokyo University of Agriculture & Technology, Japan

#### **An Evaluation of Pen-Based Security System Using Biological Information**

Norihisa Segawa & Yoshiaki Hayasaka, Iwate Prefectural University, Japan, Kiyoyuki Yamazaki & Tatsuhiko Kimura, Tokai University, Japan & Yuko Murayama, Iwate Prefectural University, Japan

# Parallel Tech

Monday, July 25, 2005 • Morning 8–10 am

HIMI

## Knowledge & Information

### Tiberius 6

*Chair: Francois Sainfort, Georgia Institute of Technology, USA*

#### How to Present Awareness Information on Large Public Displays?

Carsten Roecker, Maral Memisoglu & Norbert Streitz, Fraunhofer IPSI, Germany

#### Organizational Aspects of the Introduction of a User Centered Design Process

Natalie Woletz, University of Paderborn, Germany & Dirk Zimmermann, Siemens Medical Solutions, USA

#### Visualizing Textual Knowledge about Risks to Aid Risk Communication

Gary McKeown & Noel Sheehy, Queen's University Belfast, United Kingdom

#### Using a Shared Whiteboard for Cooperative Visualization

Frank Goetz, Otto-von-Guericke University of Magdeburg, Germany, Bernd Essmann & Thorsten Hampel, University of Paderborn, Germany

#### Ambient Art: Information without Attention

Russell Beale, University of Birmingham, United Kingdom

#### Knowledge Acquisition and Information Retrieval with Hypertext: Navigation Strategies

Anja Naumann & Josef Krems, Chemnitz University of Technology, Germany

OCSC

## Online Teaching Communities

### Claudius 1

*Chair: Chadia Abras, Goucher College, USA*

#### Cross-Cultural Computer-Mediated Communication and Online Learning: Assessing the Impact of Web Designer Cognitive Style on Information Design

Anthony Faiola, Indiana University-IUPUI, USA & Sorin Adam Matei, Purdue University, USA

#### Online Teaching Communities: Separating Myth from Reality

Howard Rosenbaum, Indiana University, USA

#### Teamwork Skills Training for Medical Practitioners

Lisa Neal, eLearn Magazine, USA, Eileen Entin, Fuji Lai, Jason Sidman, Gilbert Mizrahi & Tad Brunye, Aptima, Inc., USA

#### To Learn is to Know: Teaching, Communities, Social Capital and Knowledge Management Technologies

Christopher Hoadley, Penn State University, USA

#### Facilitating Change Through Faculty Refocus on Distance Education Possibilities in Web-Based Course Work

Carole Redline & Lauren Hoehn, Goucher College, USA

#### Integrated Teaching Experiment

Diane Maloney-Krichmar & Mozine Lowe, Bowie State University, USA

#### Exploring Guidelines for Building e-Learning Communities: A Case Study

Chadia Abras, Goucher College, USA

VR

## Real World Virtual Reality

### Tiberius 5

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

#### Real World Video Avatar

Tomohiro Tanikawa, National Institute of Information and Communication Technology, Japan & Michitaka Hirose, The University of Tokyo, Japan

#### Projected Applications—Taking Applications from the Desktop onto Real World Objects

Jochen Ehnes, Koichi Hirota & Michitaka Hirose, The University of Tokyo, Japan

#### The Effect of Tangible Avatar Interface on Virtual Space Navigation

Hideaki Kuzuoka, Chiaki Fujimori & Jun Yamashita, University of Tsukuba, Japan & Michitaka Hirose, The University of Tokyo, Japan

#### Multimedia Virtual Laboratory

Tetsuro Ogi, University of Tsukuba, Japan

#### K-eXplorer: K-Tai (Smart Phone) Interface for Mixed Reality

Yasushi Ikei, Tokyo Metropolitan Institute of Technology, Japan, Daisuke Hashimoto, Xanavi Informatics Corp., Japan, & Hiroyuki Eguchi, Tokyo Metropolitan Institute of Technology, Japan

#### PUI (Perceptual User Interface) for Wearables

Koichi Hirota & Michitaka Hirose, The University of Tokyo, Japan

#### Virtual Time Machine

Ryoko Ueoka & Michitaka Hirose, The University of Tokyo, Japan

## Portable Information Spaces: Architectures and Issues

### Majestium

*Chairs: Nicholas Polys, Virginia Tech, USA & Sandy Ressler, National Institute of Standards & Technology, USA*

#### Interactive Geometry in Distributed Virtual Environments

Paul Brewster, NASA Langley Research Center, USA

#### A Scalable Sensor Approach for Immersive and Desktop VR Application

Johannes Behr, Fraunhofer IGD, Germany, Patrick Dahne, ZGDV Computer Graphics Center, Germany & Christian Knopfle, Fraunhofer IGD, Germany

#### An Approach to Formal Description of User Interfaces Based on X3D Content

Denis Gracanin & Jianghui Ying, Virginia Tech, USA

#### The Integration and Display of Architectural Information Using XML and X3D Technologies

Robina Hetherington & Brian Farrimond, Liverpool Hope University College, United Kingdom

#### Extrusion, NURBS and Animation Array Data Attributes in X3D Coupled to MathML by XSLT and Runtime-Compiled Java Bindings

Roger Martin, State College, USA

#### Explorative Information Spaces with the Virtual TeXt-o-Graphic Library (VTEXGL)

Emanuele Ruffaldi, Carlo Alberto Avizzano & Massimo Bergamasco, PERCRO-SSSA, Italy

#### 3D Visualization of Semantic Networks

Julian Gomez, RIACS/NASA Ames Research Center, USA

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## Usability Engineering and VR

### Regalium

*Chairs: Deborah Hix & Joe Gabbard, Virginia Polytechnic Institute & State University, USA*

#### **Can VR be Useful and Usable in Real-World Contexts? Observations from the Application and Evaluation of VR in Realistic Usage Conditions**

Maria Roussou, University College London, United Kingdom & George Drettakis, INRIA, France

#### **Successes and Struggles: Finding Where VR Fits in the Industrial World**

Carolina Cruz-Neira, Iowa State University, USA, Jerry Duncan, Deere & Company, USA & Joseph Kitching, Procter and Gamble, USA

#### **Lessons Learned in Assessing Human-Virtual Human Interaction**

Catherine Zanbaka, Paula Goolkasian & Larry Hodges, University of North Carolina at Charlotte, USA & Benjamin Lok, University of Florida, USA

#### **Breaks in Presence Usability Issues**

Anthony Steed, Andrea Brogni & Vinoba Vinayagamoorthy, University College London, United Kingdom

#### **Survey of User-Based Experimentation in Augmented Reality**

J. Edward Swan II, Mississippi State University, USA & Joseph Gabbard, Virginia Polytechnic Institute & State University, USA

#### **Input Devices and Interaction Techniques to Minimize Visual Feedback Requirements in Augmented and Virtual Reality**

Gabor Blasko & Steve Feiner, Columbia University, USA

### U&I

## International Requirements Engineering for Mobile Devices

### Naples

*Chair: Pia Quaet-Faslem (Honold), SIEMENS AG, Germany*

#### **Getting the “Right Requirements”—Challenges and Obstacles in the Context of Mobile Device Design**

Pia Quaet-Faslem, Siemens AG, Germany

#### **Mobile User Experience: Challenges in International End-User Needs Research and Design**

Katja Konkka & Sanna Koskinen, Nokia Oyj, Finland

#### **Lessons Learned: How Ethnographic Methods can Contribute to Cross-Cultural Design of Mobile Devices**

Christian Sturm, arolis, Germany

#### **Usability Testing with Cultural Groups in Developing a Cell Phone Navigation System**

Young Seok Lee, Young Sam Ryu, Tonya Smith-Jackson, Dong Jae Shin, Maury Nussbaum & Kei Tomioka, Virginia Tech, USA

#### **Increasing Ease and Fun of Mobile Phone Use Through Avatars**

Martin Böcker & Bernd Holz auf der Heide, Siemens, Germany

### EPCE

## Situation Awareness

### Genoa

*Chair: Kenji Itoh, Tokyo Institute of Technology, Japan*

#### **Improved Situation Awareness with Augmented Reality**

Charlotte Skourup & John Pretlove, ABB AS Corporate Research Center, Norway

#### **Experimental Method for Assessment of Team Situation Awareness**

Yufei Shu, Japan Atomic Energy Research Institute, Japan

#### **“Reading You Loud and Clear”: Analysing the Role of Communications Technology to Support Situational Awareness in Live C4i Applications**

Guy Walker, Brunel University, United Kingdom, Huw Gibson, University of Birmingham, United Kingdom, Neville Stanton, Brunel University, United Kingdom, Chris Baber, The University of Birmingham, United Kingdom, Mark Yang & Damian Green, Brunel University, United Kingdom

#### **Evaluating Computerized Decision Support Systems for Teams: Using Cognitive Load and Metacognition Theory to Develop Team Cognition Measures**

Stephen Fiore, University of Central Florida, USA, Joan Johnston & Carol Paris, Naval Air Warfare Center, USA & C.A.P. Smith, Colorado State University, USA

#### **Product Innovativeness: A Case Study on Limits of User Acceptance**

Kerem Kuleli, UTEST Product Usability Unit, Turkey & Cigdem Erbug, Middle East Technical University, Turkey

#### **Design of a Communication Service for SOHO Workers that Creates Feelings of Fellowship and Solidarity**

Kazuhiro Takaya & Takumi Watanabe, NTT Energy and Environment Systems Labs, Japan

# Parallel Tech

Monday, July 25, 2005 • Morning 10:30 am–12:30 pm

AC

## Task Specific Information Processing in Operational and Virtual Environments

Tiberius 7

Chair: Klaus Mathiak, University of Aachen, Germany

### Task Specific Information Processing in Operational and Virtual Environments

Klaus Mathiak, RWTH Aachen University, Germany

### Mobile Infospaces: Personal and Egocentric Space as Psychological Frames for Information Organization in Augmented Reality Environments

Frank Biocca, Arthur Tang & Charles Owen, Michigan State University, USA, Weimin Mou, University of Maryland Baltimore County, USA & Fan Xiao, Michigan State University, USA

### Cognitive Influences on Self-Rotation Perception

Daniel Berger, Max Planck Institute for Biological Cybernetics, Germany, Markus von der Heyde, Bauhaus-Universität Weimar, Germany & Heinrich Buelthoff, Max Planck Institute for Biological Cybernetics, Germany

### Relationships Among Visual Perception, Psychomotor Performance, and Complex Motor Performance in Military Pilots During an Overnight Air-Refueling Simulated Flight: Implications for Automated Cognitive Workload Reduction Systems

Michael Russo, Athena Kendall, Dagny Johnson, Helen Sing, Sandra Escolas, Saul Santiago, Dwight Holland, Stanley Hall & Daniel Redmond, U.S. Army Aeromedical Research Laboratory, USA

### Neural Correlates of Driving

Wilhelm Kincses, DaimlerChrysler Corporation, Germany

### Maintaining Optimal Challenge in Computer Games Through Real-Time Physiological Feedback

Pramila Rani, Nilanjan Sarkar & Changchun Liu, Vanderbilt University, USA

### fMRI of Virtual Social Behavior: Brain Signals in Virtual Reality and Operational Environments

Klaus Mathiak, RWTH Aachen University, Germany & Rene Weber, Michigan State University, USA

## Context Modeling for Augmented Cognition

Tiberius 8

Chair: J. Chris Forsythe, Sandia National Labs, USA

### Look Who's Talking: Audio Monitoring and Awareness of Social Context

Paul Heisterkamp, Julien Bourgeois, Juergen Freudenberger, Klaus Linhard, Xavier Lacot & Guillaume Masson, DaimlerChrysler AG, Germany

### Exploring Human Cognition by Spectral Decomposition of a Markov Random Field

Monte Hancock, Jr. & John Day, Essex Corporation, USA

### Bayesian Context Modeling with Non-Geometric Dwell Times

Hamilton Link & Terran Lane, University of New Mexico, USA & Joseph Magliano, Northern Illinois University, USA

### Context Modelling as an Aid to the Management of Operator State

Andrew Belyavin & Chris Ryder, QinetiQ Ltd., United Kingdom

### Automatic Event Structure Parsing for Context Modeling: A Role for Postural Orienting Responses

Carey Balaban, Jarad Prinkey, Greg Frank & Mark Redfern, University of Pittsburgh, USA

### Modeling Human Recognition of Vehicle-Driving Situations as a Supervised Machine Learning Task

Kevin Dixon, Carl Lippitt & J. Chris Forsythe, Sandia National Laboratories, USA

### Automated Context Modeling Through Text Analysis

Travis Bauer, Sandia National Laboratories, USA

### Context Modeling for Augmented Cognition

J. Chris Forsythe, Sandia National Laboratories, USA

UAHCI

## Design of Wireless and Mobile Services for Nomadic Users

Claudius 2

Chair: Alessandro Andreadis, University of Siena, Italy

### Driving Emotions: The Design of a Car Navigation System for Anxious People

Oronzo Parlangei, Francesca Bettini & Steefano Guidi, University of Siena, Italy

### DAMA: A Proactive Service Broker in Support of Nomadic Users

Alessandro Andreadis, University of Siena, Italy & Pasquale Fedele, Agora ICTG S.R.L., Italy

### Just Follow Me—Examining the Use of a Multimodal Mobile Device in Natural Settings

Pascal Salembier, Universite Paul Sabatier, France, Julien Kahn, France Telecom R&D, France, Guillaume Calvet, Universite Paul Sabatier, France, Moustapha Zouinar & Marc Relieu, France Telecom R&D, France

### Interacting by Meaningful Actions

Maurizio Caporali, Antonio Rizzo & Elisa Rubegni, University of Siena, Italy

### The Usability of Enlarging Techniques on a Mainstream Cellular Phone by Individuals with Low Vision

Jennifer Wagner, Gregg Vanderheiden & Mary Sesto, University of Wisconsin-Madison, USA

### Developing Multi-Modal Interfaces for Visually Impaired People to Access the Internet

Wai Yu, Graham McAllister, Emma Murphy, Ravi Kuber & Philip Strain, Queen's University of Belfast, United Kingdom

### Mobile User Interfaces in Support of the Education of Children with Special Needs

Maria Virvou & Alepis Eythimios, University of Piraeus, Greece

Monday • 10:30 am – 12:30 pm



# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## Emerging Research Methods in UAHCI

**Claudius 3**

*Chair: Ray Adams, Middlesex University, United Kingdom*

### Research Methods for Supporting the Design of Interfaces for Universal Access

Simeon Keates, IBM TJ Watson Research Center, USA

### Exploring Cognitive Factors for Universal Access (UA)

Ray Adams, Middlesex University, United Kingdom & Patrick Langdon, University of Cambridge, United Kingdom

### Emerging Research Methods for Universal Access

Ray Adams & A. Serengul Smith-Atakan, Middlesex University, United Kingdom

### Evaluating Choice in Universal Access

Anthony White, Ray Adams & Stephen Prior, Middlesex University, United Kingdom

### Research Methods for Universal Access Technology

Ray Adams & A. Serengul Smith-Atakan, Middlesex University, United Kingdom

### Cross-Cultural Factors of Physical-Shopping and eShopping

Jainaba Jagne, A. Serengul Smith-Atakan & Elke Duncker, Middlesex University, United Kingdom & Paul Curzon, University of London, United Kingdom

## User Interfaces for Real-Time Military Systems

**Claudius 4**

*Chair: Philippe Palanque, Universite Paul Sabatier, France*

### Multimodal Output Simulation Platform for Real-Time Military Systems

Cyril Rousseau, LIMSI-CNRS, France, Yacine Bellik, University of Paris XI, France, Frederic Vernier, LIMSI-CNRS, France & Didier Bazalgette, DGA/DSP/STTC, France

### The ICARE Component-Based Approach for Multimodal Interaction: Application to Real-Time Military Aircraft Cockpits

Jullien Bouchet & Laurence Nigay, University of Grenoble 1, France & Thierry Ganille, THALES Avionics, France

### Supporting INTUITION Through Formal Specification of the User Interface for Military Aircraft Cockpit

Remi Bastide, Eric Barboni, Xavier Lacaze, David Navarre, Philippe Palanque & Amelie Schyn, Universite Toulouse III, France & Didier Bazalgette, DGA/DSP/STTC, France

### Can We Rationalise the Design and Construction of Air Traffic Management Systems?

Remi Bastide, Xavier Lacaze, David Navarre & Philippe Palanque, Universite Toulouse III, France & Michel Galindo, University Paul Sabatier, France

### The INTUITION Design Process: Structuring Military Multimodal Interactive Cockpits Design According to the MVC Design Pattern

Remi Bastide, University Toulouse III, France, Laurence Nigay, University of Grenoble I, France, Didier Bazalgette, DGA/DSP/STTC, France, Yacine Bellik, University of Paris, France & Christian Nouvel, THALES-Avionics, France

### Using Formal Methods in Safety-Critical Interactive System Design: From Architecture-Based Approaches to Tool-based Development

Patrick Girard & Mickael Baron, LISI/ENSMA, France & Francis Jambon, CLIPS-IMAG, France

## HCI

## Interaction Design Education and Research: Current and Future Trends

**Tiberius 1**

*Chair: Anthony Faiola, Indiana University IUPUI, USA*

### Managing Design Knowledge: A New Pedagogical Framework for HCI

Anthony Faiola, Indiana University-IUPUI, USA

### Designing Design: Establishing a New Common Ground for Collaboration

Shelley Evenson, Carnegie-Mellon University, USA

### Beyond Contextual Inquiry: Conducting User Studies for Complex Problem-Solving

Barbara Mirel, University of Michigan, USA

### The Explanation for Design Explanations

Eli Bleviss & Martin Siegel, Indiana University, USA

### User Experience as a Business Unit: Implications for the HCI Profession

William Gribbons, Bentley College, USA

### It's Art, but is it HCI?—Testing the Boundaries

Stephen Boyd Davis, Middlesex University, United Kingdom

## Physiological Signals as Input in Human-Computer Interaction

### Tiberius 3

*Chair: Armando Barreto, Florida International University, USA*

#### An Inexpensive Brain-Computer Interface Based on Spatial and Temporal Analysis of EEG

Charles Anderson, James Knight & Michael Kirby, Colorado State University, USA

#### Designing a Biocontrol Interface for Commercial and Consumer Mobile Applications: Effective Control within Ergonomic and Usability Constraints

Benjamin Knapp & Hugh Lusted, BioControl Systems, LLC, USA

#### The Use of Near Infrared Brain Imaging Methods to Monitor Cognitive State

Monica Fabiani, Gabriele Gratton & Arthur Kramer, University of Illinois at Urbana-Champaign, USA

#### Is Neuron Discrimination Preprocessing Necessary for Linear and Nonlinear Brain Machine Interface Models?

Justin Sanchez, Jose Principe & Paul Carney, University of Florida, USA

#### Signal Processing Approaches for EMG-based Hands-off Cursor Control

Craig Chin & Armando Barreto, Florida International University, USA

#### Affective Intelligent Car Interfaces with Emotion Recognition

Christine Lisetti, Institut EURECOM, France & Fatma Nasoz, University of Central Florida, USA

#### Concurrent Analysis of Physiologic Variables for the Assessment of the Affective State of a Computer User

Jing Zhai & Armando Barreto, Florida International University, USA

## Errors and Frustrations for Diverse User Populations

### Tiberius 2

*Chair: Jonathan Lazar, Towson University, USA*

#### How Do I Find Blue Books about Dogs? The Errors and Frustrations of Young Digital Library Users

Hilary Hutchinson, Allison Druin, Benjamin Bederson, Kara Reuter, Anne Rose & Carlson Weeks, University of Maryland, USA

#### Math Readers for Blind Students: Errors, Frustration and the Need for a Better Technique

Arthur Karshmer, University of South Florida, USA & Doug Gillan, New Mexico State University, USA

#### Human Factors in Medicine—Task and Error Analysis of Baker and Marchman Act Individuals

Deborah Carstens, Florida Institute of Technology, USA

#### Reducing User Frustration in Designing Data-collection Forms for Internet Users: Can We Improve Performance and Satisfaction?

Elizabeth Murphy, U.S. Census Bureau, USA

#### Methodological Issues in Using Time Diaries to Collect Frustration Data from Blind Computer Users

Jonathan Lazar, Aaron Allen, Jason Kleinman & Jessica Lawrence, Towson University, USA

#### Older Users and the Web

Sanjay Koyani, Department of Health & Human Services, USA, Michael Ahmadi, Marcia Changkit & Kim Harley, National Cancer Institute, USA & Robert Bailey, Computer Psychology, Inc., USA

## Design of Mobile Devices

### Tiberius 4

*Chair: John Eklund, Access Testing Centre, Australia*

#### Multimodal Interaction on Mobile Devices

Birgit Otto & Fritjof Kaiser, Siemens AG, Germany

#### Requesting Services by Touching Objects in the Environment

Jukka Riekkii, Timo Salminen & Simo Hosio, University of Oulu, Finland & Ismo Alakarppa, University of Lapland, Finland

#### The Development of User Observation Method and Analysis Tool in Mobile Environment—With Emphasis on the Development of Observation Method at User's Point of View by Wearable Micro-Camera and Analysis Tool

Oh Young Suk & Kun-Pyo Lee, KAIST, S. Korea

#### A Bluetooth-Enabled Location-Based Advertising Application

Hao Wang, NCS Communication Engineering Pte Ltd. & Heng Xu, National University of Singapore, Singapore

#### Personalization of Multi-Modal Interface for Mobile Phone—Adaptation to “Noticeable,”

“Understandable,” and

“Memorable” for Each User

Takahiro Iijima, Chuo University, Japan, Isao Shinohara, Kyodo Printing Co., Ltd., Japan & Toshikazu Kato, Chuo University, Japan

#### Applications Designing Mona: User Interactions with a Multimodal Mobile Game

Lynne Baillie, Raimund Schatz, Rainer Simon, Florian Wegscheider, Hermann Anegg, Michael Pucher & Georg Niklfeld, FTW, Austria & Alexander Gassner, Siemens, Austria

## Communication Systems and Security

### Tiberius 5

*Chair: Nancy Lightner, South University, USA*

#### Effectiveness of VRML Building Models for Direction Finding

Pietro Murano & Dino Mackey, University of Salford, United Kingdom

#### Situated Privacies: Do You Know Where Your Mother [Trucker] Is?

Ken Anderson, Intel Corporation, USA & Paul Dourish, University of California, Irvine, USA

#### An Alternative GUI Interface Using Air Propagated Ultrasonic Waves and Sounds in Mouth

Masami Hashimoto, Yoshimichi Yonezawa & Kazunori Itoh, ShinShu University, Japan

#### An Improved 2.4kbs Mixed Excitation Linear Prediction Vocoder

Xin Ma, Li Wenyuan, Liu Changshu & Zhang Yuzhong, Tianjin University, Japan

#### Synchronism and Diachronism into Evolution of the Interfaces for Quality Communication in Multimedia Systems

Francisco Cipolla Ficarra, F&F Multimedia Communications Corporation & Università degli Studi di Bergamo, Italy

#### 1 Bit Communication Network for Remote Interaction

Kenji Suzuki & Shuji Hashimoto, Waseda University, Japan

#### Auditory Experiments Using the MUSCOS Experimental Platform

Dimitris Rigas & Ibrahim Bahadur, University of Bradford, United Kingdom

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

E&H

HIMI

## Emotions in HCI

### Tiberius 6

Chair: *Chang S. Nam*, University of Arkansas, USA

#### EmoTetris for Recognition of Affective States

Karina Oertel, Randolph Schultz & Michael Blech, Fraunhofer IGD Rostock, Germany, Oliver Herbolt, University of Wurzburg, Germany, Jorg Voskamp & Bodo Urban, Fraunhofer IGD, Germany

#### Emotional Design—Designing for Satisfaction and Pleasure

Soraia Cardoso, University of Rotterdam, The Netherlands

#### Aesthetic and Emotional Evaluations of Computer Interfaces

Jari Laarni, Niklas Ravaja & Timo Saari, Helsinki School of Economics, Finland

#### EmoTV1: Annotation of Real-Life Emotions for the Specification of Multimodal Affective Interfaces

Sarkis Abrilian, Laurence Devillers, Stephanie Buisine & Jean-Claude Martin, LIMSI-CNRS, France

#### A Corpus-Based Approach for the Modeling of Multimodal Emotional Behaviors for the Specification of Embodied Agents

Sarkis Abrilian, Jean-Claude Martin & Laurence Devillers, LIMSI-CNRS, France

#### Negative Emotions in E-Business

Diana Horn, Purdue University, USA & Kristen Oldenburger, Independence Air, USA

## Performance & Well-Being

### Palermo

Chair: *Alvaro Taveira*, University of Wisconsin-Whitewater, USA

#### Comparative Evaluation of Keyboarding Speed, Accuracy, and Comfort: Fixed-Angle Split Versus QWERTY

Tim Greenleaf, Universal Technical Institute, Inc., USA, Alvaro Taveira, Sang Choi & Andrew Kapp, University of Wisconsin-Whitewater, USA

#### Load of Hand and Task Performance of Children in the Lower Grade by Using Mouse Input Device

Kazunari Morimoto, Takao Kurokawa & Masayuki Yutani, Kyoto Institute of Technology, Japan

#### Psychomotor User Characteristics as Predictors for a Successful Usage of Small Input Devices

Christine Sutter & Martina Ziefle, RWTH Aachen University, Germany

#### Comparing Speed and Force Control of Keystroke Actions in Symptomatic and Asymptomatic Office Workers

Grace Szeto, The Hong Kong Polytechnic University, Hong Kong, Leon Straker & Peter O'Sullivan, Curtin University of Technology, Australia

#### Control of Surgical Gesture Under Lingual Electro-Tactile Stimulation

Fabien Robineau, TIMC-IMAG, France, Frederic Boy & Jean-Pierre Orliaguet, Neurocognition Labs/CNRS 5105/UPMF, France, Jo. Vazquez-BuenosAiresa, J. Demongeota & Y. Payan, TIMC-IMAG, France

#### Age, Muscular Complaints and Strain: How User Characteristics Interact with Ergonomic Factors in the VDU Workplace

Katrin Breman & Martina Ziefle, RWTH Aachen University, Germany

## Work Organization Issues

### Pisa

Chair: *Michelle Rogers*, VA GAPS Center, USA

#### User Acceptance and Usage of Employee Self-Services

Timo Christophersen, Ute Schaeffer-Kuelz & Udo Konradt, University of Kiel, Germany

#### Distributed Participatory Design: A Case Study

Karin Danielsson, Umea University, Sweden & Ulrika Danielsson, Mid Sweden University, Sweden

#### Empowering Workplace eLearning Program Design: The Key Role of Training Needs Assessment

Vassilis Karamanis, Angeliki Poulmenakou & Spiros Borotis, Athens University of Economics & Business, Greece

#### Empowering Service Organizations by Integrating Creativity and Knowledge Management into the Service Development Process—Solutions for an Integrated Management of Creativity and Knowledge in the Service Process

Thomas Schlegel & Alexander Karapidis, Fraunhofer-IAO, Germany, H. Holger Rath, Empolis GmbH, Germany & Carsten Ritterskamp, Ruhr University of Bochum, Germany

#### Participatory Design of an Electronic Medical Record System for Handheld Devices Using Surrogate Users

Michael Scott Orr, Sharon Straus, Melanie Baran, Maryam Tohidi & Mark Chignel, University of Toronto, Canada & Robert Wu, University Health Network, Canada

#### The Socio-Technical Impact of Electronic Medical Records on the Work Activities and Work Processes in a Small Clinic

Michelle Rogers, VA GAPS Center, USA

## Knowledge Management Tools 2

### Turin

Chair: *Janice Marconi*, Marconi Works International, USA

#### Collaborative Views for Structuring Knowledge—Our Experiences

Thorsten Hampel, University of Paderborn, Germany

#### Knowledge Exchange: Exploring the Role of Context in Collaborative Learning

Michael Atwood & Francisco Soria, Drexel University, USA

#### DIF Knowledge Management System: Bridging Viewpoints for Interactive System Design

Eui-Chul Jung, Keiichi Sato, Yong Chen & Xiaoshan He, Illinois Institute of Technology, USA, Tom MacTavish & Deborah Cracchiolo, Motorola, USA

#### Success Factors of Knowledge Sharing in Virtual Cooperation

Paivi Poyry, Helsinki University of Technology, Finland & Saija Maki-Komski, Nokia Oyj, Finland

#### Knowledge Management for Virtual Collaborative Product Development

Qiu Yuan Fu, Yoon Ping Chui & Martin Helander, Nanyang Technological University, Singapore

#### An Evaluation of Immediate Instant Messaging

Jeffrey Campbell & Zhenxue Zhang, University of Maryland Baltimore County, USA

# Parallel Tech

Monday, July 25, 2005 • Morning 10:30 am–12:30 pm

## OCSC

### Mobile Communities and Their Place in the Online World: The User's Perspective

**Claudius 1**

*Chair: Asim Ant Ozok, University of Maryland Baltimore County, USA*

**The Impact of Short Messaging Systems on Building Online Communities: Comparative Study of Turkish and American Cultures**  
Gulcin Buyukozkan, Galatasaray University, Turkey & Asim Ant Ozok, University of Maryland Baltimore County, USA

**Mobile Users Make it Easier**  
Anxo Cereijo Roibas, University of Brighton, United Kingdom

**Community Aspects in Electronic and Mobile Commerce: A Preliminary Study of American and Chinese Cultures**  
Michael Carlin & Asim Ant Ozok, University of Maryland Baltimore County, USA

### Exploring Mobile Information Systems for Adolescent Cancer Patients

Jan Marco Leimeister, Uta Knebel & Helmut Krcmar, Technische Universitat Munchen, Germany

### Ubiquitous Computing: A Research for Mobile Communication

Canan Akoglu, Yildiz Technical University, Turkey

### A Behaviouristic Interpretation of the Popularity of Mobile Text Messaging

Gunnvald Svendsen, Telenor R&D, Norway & Frode Svartdal, University of Tromso, Norway

## VR

### Situational Awareness in Virtual Environments

**Trevi**

*Chairs: Kelly Hale & Laura Milham, Design Interactive, Inc., USA*

### Measuring Situation Awareness in a Virtual Urban Environment for Dismounted Infantry Training

David Kaber, North Carolina State University, USA, Jennifer Riley & Mica Endsley, SA Technologies Inc., USA & Donald Lampton, Army Research Institute for the Social & Behavioral Science, USA

### Situation Awareness in an Augmented Reality Cockpit: Design, Viewpoints and Cognitive Glue

David Foyle, NASA Ames Research Center, USA, Anthony Andre & Becky L. Hooley, San Jose State University at NASA Ames Research Center, USA

### Using Virtual Environment to Understand Situation Awareness in Human Agent Teams

Stephen Fiore, University of California, Berkeley, USA & Florian Jentsch, University of Central Florida, USA

### Assessing the Relationship of Situation and Subjective Telepresence in a Virtual Landmine Disposal Task

Jennifer Riley, SA Technologies, Inc., USA & David Kaber, North Carolina State University, USA

### Selection of Metaphoric and Physical Fidelity Multimodal Cues to Enhance Virtual Environment (VE) Performance: Benefits and Issues

Laura Milham & Kelly Hale, Design Interactive, Inc., USA, Kay Stanney, University of Central Florida and Design Interactive, Inc., USA & Joseph Cohn, U.S. Naval Research Laboratory, USA

### Toward a Sickness-Free Virtual Environment

**Regalium**

*Chairs: Tohru Kiryu, Niigata University, Japan; Mieko Ohsuga, Osaka Institute of Technology, Japan & Makoto Yoshizawa, Tohoku University, Japan*

### Factors Causing Variations in Magnitude and Speed Perception of Visually Induced Self-Motion

Mieko Ohsuga, Yumiko Inoue, Kensuke Takahashi & Yusuke Isobe, Osaka Institute of Technology, Japan & Seiji Inokuchi, Takarazaka University of Art & Design, Japan

### Effects of Rotational Components of Yaw, Roll and Pitch on Visually-Induced Motion Sickness

Hiroyasu Ujike, Ryo Kozawa, Takashi Yokoi & Shinya Saida, National Institute of Advanced Industrial Science & Technology, Japan

### Virtual Simulation Sickness and Neural Expectation

Peter Howarth, Loughborough University, United Kingdom

### A Study on Autonomic Indices for Assessment of Visually-Induced Motion Sickness

Chizuru Nakagawa, Railway Technical Research Institute, Japan, Mieko Ohsuga, Osaka Institute of Technology, Japan & Takashi Takeda, Kyusyu University, Japan

### Biphasic Effect of Visually-Induced Motion Sickness Revealed by Time-Varying Correlation of Autonomic Nervous System

Norihiro Sugita, Makoto Yoshizawa & Makoto Abe, Tohoku University, Japan, Akira Tanaka, Fukushima University, Japan, Tomoyuki Yambe & Shin-ichi Nitta, Tohoku University, Japan & Shigeru Chiba, Sharp Company, Japan

### Time-Frequency Structure of Image Motion Vectors Under Vection-Induced Cybersickness

Tohru Kiryu, Eri Nomura, Astuhiko Iijima & Takehiko Bando, Niigata University, Japan

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## U&I

### Ignoring Cybersickness Has Not Made It Go Away: Adverse Subjective, Physiological, Cognitive, or Performance Effects of Virtual Environments Exposure

#### Majestium

*Chairs: Roberto Champney, University of Central Florida, USA, Kay Stanney, University of Central Florida and Design Interactive, Inc., USA & Ben Lawson, Naval Aerospace Medical Research Lab, USA*

### Adapting to Virtual Environments: Visual-Motor Skill Acquisition Versus Perceptual Recalibration

Robert Welch, NASA Ames Research Center, USA & Anthony Sampanes, University of California, Santa Cruz, USA

### Motion Sickness and Console Video Games

Thomas Stoffregen & Omar Merhi, University of Minnesota, USA

### Aftereffects on the Vestibular System from Virtual Reality Exposure

Erik Viirre, University of California, San Diego, USA & Mark Draper, Air Force Research Laboratory, USA

### Effects of Exposure to HMD and Dome VR Systems on Postural Control

Deborah Harm, NASA Johnson Space Center, USA & Laura Taylor, Wyle Laboratories, USA

### Effects of Motion Exposure on Physiological, Cognitive, and Subjective Measures of Sickness and Fatigue

Robert Kennedy, RSK Assessments, Inc., USA, Jonathan French, Embry-Riddle Aeronautical University, USA, Julie Drexler & Daniel Compton, RSK Assessments, Inc., USA

### Physiological Aftereffects and Subjective VR Immersion Limits: the Effects State of Health

Roberto Champney, University of Central Florida, USA, Kay Stanney, University of Central Florida and Design Interactive, Inc., USA, Robert Kennedy & Daniel Compton, RSK Assessments, Inc., USA

### Internationalization of Design and Usability Panel 1: Case Studies from the International Ethnography—Real Life Experiences in Industry

#### Verona

*Moderators: Lynn Shade & Sheryl Ehrlich, Adobe Systems, USA*

### The Rest-of-World Problem Thinking Critically About Culture

Genevieve Bell, Intel Corporation, USA

### Incorporating International Field Research into Software Product Design

Tracey Lovejoy & Nelle Steele, Microsoft Corporation, USA

### User Research in Japan and the U.S.

Yuuki Hara, Hitachi Ltd., Japan

### Cross-Cultural Design: Communicating Between Cultures

Lynn Shade, Adobe Systems, USA

### Designing for International Markets: Between Ignorance and Cliches

Pia Quaet-Faslem, Siemens AG, Germany

### Usability Practices in Asia

#### Naples

*Chair: Apala Lahiri Chavan, Human Factors International Pvt, India*

### Usability in Japan—New Perspectives

Masaaki Kurosu, National Institute of Multimedia Education, Japan

### Usability in Singapore: Experience of Building a Cross Border Human Interface Technology Laboratory in Singapore

Adrian David Cheok, National University of Singapore, Singapore & Thomas Furness, University of Washington, USA

### Design and Usability for Indian Middle Tier: How to Tackle Cultural Differences?

Girish Prabhu, HP Labs India, India

### Usability in India, Is It Different?

Apala Lahiri Chavan, Asia Human Factors International, India

### How Do Web Sites Appear in Different Cultures?

### A Comparative Study with Korean and German Users

Do Wan Kim, Palchai University, S. Korea, Maximilian Eibl, GESIS, Germany & Thomas Mandl, University of Hildesheim, Germany

## EPCE

### Mobile Communication and Emotion

#### Genoa

*Chair: Guy Boy, EURISCO International, France*

### A Quest for Product Messages—Explorative Research Setting for Analyzing the Communicative Design Aspects of Mobile Phones in the Usability Laboratory

Toni-Matti Karjalainen & Lauri Repokari, Helsinki University of Technology, Finland

### The Way Forward for Cognitive Environments: Improving the Design Process of Mobile Applications or Services

Masja Kempen, DECIS Lab, The Netherlands & Alfons Salden, Telematics Institute, The Netherlands

### The Use of Mobile Devices by West Nile Virus Field Workers

Ivanna Terrell, Michael McNeese, Haiyan Huang, Sven Fuhrmann & Alan MacEachren, The Pennsylvania State University, USA

### Emotion Studies in HCI—A New Approach

Antje Herbon, Humboldt University at Berlin, Germany, Christian Peter, Fraunhofer-IGD, Germany, Lydia Markert & Elke van den Meer, Humboldt University at Berlin, Germany & Jorg Voskamp, Fraunhofer-IGD, Germany

### Development of a Conceptual Model of Product Emotion in the Pre-Purchase Context

Rosemary Seva, Henry Been-Lirn Duh & Martin Helander, Nanyang Technological University, Singapore

### Psychosocial Aspects of New Technology Implementation

Dennis Jones & Michael Smith, University of Wisconsin-Madison, USA

### Design Rationale—Bridging the Gap Between User Requirements and Implementation

Jaana Leikas, Antti Vaatanen, Tytti Virtanen & Raisa Suihkonen, VTT Information Technology, Finland

# Parallel Tech

Monday, July 25, 2005 • Afternoon 1:30–3:30 pm

AC

## Modulators of Human Information Processing in Realistic Environments

**Tiberius 7**

*Chair: Mark Scerbo, Old Dominion University, USA*

### **Biocybernetic Systems: Information Processing Challenges that Lie Ahead**

Mark Scerbo, Old Dominion University, USA

### **Using Modes of Cardiac Autonomic Control to Assess Demands upon Processing Resources During Driving**

Richard Backs, Jonathan Shalley & John Lenneman, Central Michigan University, USA

### **Sensor-Based Cognitive State Assessment in a Mobile Environment**

Santosh Mathan, Natalia Mazaeva & Stephen Whitlow, Honeywell Laboratories, USA, Andre Adami, Deniz Erdogmus, Tian Lan & Misha Pavel, Oregon Health Sciences University, USA

### **Augmentation of Pilot Cognition and Perception Through Advanced Synthetic Vision Technology**

Lawrence Prinzell III, Lynda Kramer, Randall Bailey, Jarvis Arthur, Steve Williams & Jennifer McNabb, NASA Langley Research Center, USA

### **Cellulars, Cars, and Cortex—A Neurophysiological Study of Multi-Task Performance Degradation**

Curtis Ponton, Compumedics Neuroscan, USA & Elais Ponton, University of British Columbia, Canada

### **The Communications Scheduler: A Task Scheduling Mitigation for a Closed Loop Adaptive System**

Michael Dorneich, Stephen Whitlow, Santosh Mathan, James Carciofini & Patricia Ververs, Honeywell Laboratories, USA

### **Some Implications and Challenges for “Augmented Cognition” from the Perspective of the Theory of Complex and Cognitive Systems**

Robert Hoffman, Institute for Human & Machine Cognition, USA

## Issues of Trust in Adaptive Systems

**Tiberius 8**

*Chair: Chris Miller, Smart Information Flow Technologies, USA*

### **Trust in Adaptive Automation: The Role of Etiquette in Tuning Trust Via Analogic and Affective Methods**

Christopher Miller, Smart Information Flow Technologies LLC, USA

### **Automation Etiquette in the Augmented Cognition Context**

Santosh Mathan, Michael Dorneich & Stephen Whitlow, Honeywell Laboratories, USA

### **Assisted Focus: Heuristic Automation for Guiding Users’ Attention Toward Critical Information**

Mark St. John, Harvey Smallman & Daniel Manes, Pacific Science & Engineering Group, USA

### **UCAR Command and Control—Developing Trust of Highly Automated Systems**

Thomas Spura, & Erin Accettullo, Lockheed Martin Systems Integration, USA, Jerry Franke & Vera Zaychik, Lockheed Martin Advanced Technology Laboratory, USA

### **PACT: Enabling Trust in Adaptive Systems Through Contracted Delegation of Authority**

Robert Taylor, Defence Science & Technology Laboratory, United Kingdom

### **The Impact of Operator Trust on Monitoring a Highly Reliable Automated System**

Nathan Bailey & Mark Scerbo, Old Dominion University, USA

### **Human Interaction with Adaptive Automation: Strategies for Trading of Control Under Possibility of Over-Trust and Complacency**

Toshiyuki Inagaki, Hiroshi Furukawa & Makoto Itoh, University of Tsukuba, Japan

UAHCI

## Facilitating Web Access for Older Adults

**Claudius 3**

*Chair: Vicki Hanson, IBM TJ Watson Research Center, USA*

### **Web Usability and Aging: Cognitive Aging and Health Care Information**

Raymond Ownby, University of Miami, USA

### **A New Model for Understanding Older Adults as Web Users**

Dana Chisnell, UsabilityWorks, USA, Janice Redish, Redish & Associates, Inc., USA & Amy Lee, AARP Services, Inc., USA

### **How to Improve Web Usability for Older Users**

Ann Chadwick-Dias, Marguerite Bergel, Lori LeDoux & Thomas Tullis, Fidelity Investments, USA

### **Adapting Web Pages for Older Adults**

Vicki Hanson, IBM TJ Watson Research Center, USA

### **Not Browsing, but Drowning: Designing a Web Browser for Novice Older Users**

Scott Milne, Anna Dickinson, Peter Gregor, Lorna Gibson, Louise McIver & David Sloan, University of Dundee, United Kingdom

Monday • 1:30–3:30 pm

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## Building Bridges for All Through Technology in Education and Testing

### Claudius 2

*Chairs: Dimitris Toliás & George Exadaktylos, Hellenic American Union, Greece*

#### Taking Learner Characteristics into Consideration: Improving Development and Use of Technology Supported Learning

Dianna Newman, University at Albany/State University of New York, USA

#### Varieties of Interactive Experience in Web-Based Education

Diana Slattery, Rensselaer Polytechnic Institute, USA & George Exadaktylos, Hellenic American Union, Greece

#### The Visualization of On-Line Help for Active User Support in an Engaging and Communicative Learning Environment

Vassiliki Kourbani & Dimitris Toliás, Hellenic American Union, Greece

#### Technology is Not the Most Important Aspect of e-Learning

Antonio Herrera, CISCO Systems, Spain

#### Effective Teacher Education Through Distance Learning

Michael Robbs, Hellenic American Union, Greece

#### The e-Learning Experience and its Future in a Small Non-English Speaking Country Like Greece—The Rule or the Exception in Similar Countries of Southern Europe

Evangelos Athanasopoulos, Hellenic American Union, Greece

#### Virtual Reality Worlds for Real Time e-Learning Environments

Nicholas Harkiolakis, Hellenic American Union, Greece & Panos Kypros Chrysanthis, University of Pittsburgh, USA

## Visual Information Acquisition and Cognition of Older Users

### Claudius 4

*Chair: Hiroyuki Umemuro, Tokyo Institute of Technology, Japan*

#### Cognitive Aging and Response Interface in Time-Sharing

Pamela Tsang, Wright State University, USA

#### Incorporating User Ability Test in Evaluating Pointing Devices

Murni Mahmud & Sri Hastuti Kurniawan, University of Manchester, United Kingdom

#### Eye Movement of Older Web-Users

Ryoko Fukuda, Keio University, Japan

#### Age Differences in Visual Searches

Hiroyuki Umemuro & Jun Sato, Tokyo Institute of Technology, Japan

#### Cognitive Abilities and Individual Differences in the Visual Search of the Elderly

Jun Sato & Hiroyuki Umemuro, Tokyo Institute of Technology, Japan

#### Study on Roles of Visual Field in Walking and their Age Effects

Nana Itoh, National Institute of Advanced Industrial Science & Technology, Japan

#### Even Better Than Reality: The Development of a 3-D Online Store that Adapts to Every User and Every Platform

Antonio Robles, Jose Molina Masso, Victor Lopez-Jaquero & Arturo Garcia Jimenez, University of Castilla-La Mancha, Spain

## The Trend of Universal Access Research in Asia

### Claudius 1

*Chair: Hirotada Ueda, Keihanna Human Info-Communication Research Center, Japan*

#### Japanese Web Content Accessibility Guidelines and International Standard Harmonization

Takayuki Watanabe, Tokyo Woman's Christian University, Japan

#### Towards More Open Academic Societies—Information Accessibility for Research Meetings

Akira Okamoto, Tsukuba College of Technology, Japan, Akio Ando, NHK Science & Technology Research Labs, Japan, Masayuki Inoue, Seiko Epson Corporation, Japan & Tomohiro Haraikawa, Shizuoka University, Japan

#### Universal Access to PDA by Modular I/O Design

Seongil Lee, Sang Hyuk Hong & Jaewook Jeon, Sungkyunkwan University, Korea

#### Sharing Up-to-Date Accessibility Information Using a Mobile Phone with GPS and a Camera

Tomoko Imai, Naoki Sakakibara & Chika Sekine, UDIT Inc., Japan, Takeshi Hoshino, Yukinobu Maruyama & Junji Nakata, Hitachi Ltd., Japan, Masaaki Kurosu & Hideaki Takahashi, National Institute of Multimedia Education, Japan

#### Cognitive Problems of Web Accessibility for Seniors—An Empirical Study on Information Searches and Form Input on the Web

Yuuki Hara & Kaori Kashimura, Hitachi, Ltd., Japan

#### What is Information Accessibility for All?—Development of New Communication Tool for People with Severe Disabilities Using Mobile Phones

Kenryu Nakamura, Kagawa University, Japan, Mamoru Iwabuchi, Hiroshima University, Japan & Norman Alm, University of Dundee, United Kingdom

## User Interface Design—Visual

### Tiberius 2

*Chair: Nong Ye, Arizona State University, USA*

#### Development of an Information-Task-Interface Framework for Informative UI

Seunghun Yoo & Wan Yoon, KAIST, Korea

#### VisualHaptics: A New Interaction Technique for Expressing Subtle Senses by Changing States of a Cursor

Keita Watanabe, Koji Tsukada & Michiaki Yasumura, Keio University, Japan

#### On the Use of Colors in the Visualization of Shared Annotations

Miguel Villarroel, University of Zaragoza, Spain, Pablo De la Fuente, University of Valladolid, Spain, Alberto Pedrero, Universidad Pontificia de Salamanca, Spain & Joaquin Adiego, University of Valladolid, Spain

#### Training Wheels for the Command Line

David Herrera & Nigel Ward, University of Texas at El Paso, USA

#### Alternative User Interface Designs for Visual Skimming of Large Documents

Wolfgang Huerst, Philipp Jarvers & Georg Goetz, Albert-Ludwigs-Universität Freiburg, Germany

#### Visual Analysis of Behaviour of Agents

David Rehor & Pavel Slavik, Czech Technical University in Prague, Czech Republic

## Multimedia 1

### Tiberius 3

*Chair: Xiaowen Fang, DePaul University, USA*

#### Blended Maps and Layered Semantics for a Tourist Mobile Guide

Kris Luyten, Karin Coninx, Geert Houben & Frederik Winters, Limburgs Universitair Centrum, Belgium

#### ubiNEXT: A New Approach to Support Visitor's Learning Experience in a Museum

Aya Masuoka, Takugo Fukaya, Toru Takahashi, Machi Takahashi & Sadanori Ito, Advanced Telecommunications Research Institute, Japan

#### Uniformity of the Graphic Design in the Office Type User Interfaces

Matiss Kulis, University of Latvia, Latvia

#### Ergonomic Design of User Guides in Multimedia Environments with Remote Controls and Onscreen Displays

Stefan Lutherdt & Peter Kurtz, Technische Universität Ilmenau, Germany

#### Phasic Psychophysiological Responses to Video Game Events: New Criterion Variables for Game Design

Niklas Ravaja, Jari Laarni, Timo Saari, Kari Kallinen & Mikko Salminen, Helsinki School of Economics, Finland

#### Children's Gesture and Speech in Conversation with 3D Characters

Stephanie Buisine & Jean-Claude Martin, LIMSI-CNRS, France & Niels Ole Berssen, University of Southern Denmark, Denmark

#### Research on Users' Mental Models in Interface Icons of Portable Media Player

Chieh-Yu Chan, Tatung Company, Taiwan, Chien-Hsiung Chen, National Taiwan University of Science & Technology, Taiwan, Gung-Min Hsu, Yueh-Chi Wang & Shih-Chieh Chen, Tatung Company, Taiwan

## Usability 1

### Tiberius 4

*Chair: Tadashi Kobayashi, Fujitsu Info Software Technologies Ltd., Japan*

#### Using a Single Usability Metric (SUM) to Compare the Usability of Competing Products

Jeff Sauro, Oracle, Inc., USA & Erika Kindlund, Intuit, Inc., USA

#### Usefulness of Nonverbal Cues from Participants in Usability Testing Sessions

Karen Long, Lara Styles, Terence Andre & William Malcolm, U.S. Air Force Academy, USA

#### Development of Usability Questionnaire Items for Mobile Products and Content Validity

Young Sam Ryu & Tonya Smith-Jackson, Virginia Tech, USA

#### Usability Estimation of Quality Management System Software

Krzysztof Hankiewicz & Waldemar Prussak, Poznan University of Technology, Poland

#### Challenges in Usability Evaluation of Expert Domain Products

Johanna Viitanen, Sami Karjalainen, Heli Kautonen & Anna Laukkanen, Helsinki University of Technology, Finland

#### Guidelines for Describing Usability Problems

Davide Bolchini, University of Lugano, Switzerland & Sebastiano Colazzo, Politecnico di Milano, Italy

#### Usability Engineered Products and Services

Tadashi Kobayashi, Tokyo University of Science, Japan

## The HCI of Information Visualization in Two- and Three-Dimensional Domains

### Tiberius 6

*Chair: Anthony Faiola, Purdue University, USA*

#### Design and Evaluation of the Tightly Coupled Perceptual-Cognitive Tasks in Knowledge Domain Visualization

Marie Synnæstvedt & Chaomei Chen, Drexel University, USA

#### HCI Issues in Catalyst Design by Discovery Informatics Visualization

Laura Arns, Gary Bertoline & James Caruthers, Purdue University-ITaP, USA

#### Use and Reuse in Information and Interaction Design

D. Scott McCrickard, Shahtab Wahid, Jason Chong Lee & Nicholas Polys, Virginia Tech, USA

#### Integrating the Visualization of Personal Histories of File Usage into 3D Landscapes: Enhancing Desktop File Searching Using TerraSearch+

Anthony Faiola, Indiana University-IUPUI, USA, Timothy Altom, IUPUI, USA & Dennis Groth, Indiana University, USA

#### Exploring the Benefits of Immersion for Information Visualization

Doug Bowman, Dheva Raja, John Lucas & Ameya Datey, Virginia Tech, USA



# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## E&H

### Telecommuting/Telework Programs: Benefits and Challenges of Working from Home

#### Palermo

Chair: Naomi Swanson, NIOSH, USA

#### Historical Perspective—Early Telecommuting Programs and their Evolution

Michelle Robertson, Liberty Mutual Research Institute for Safety, USA

#### Summary of Demographic Information on U.S. Telecommuters and Associated Work Organization and Health Findings from a Nationally Representative Data Set

Steven Sauter, NIOSH, USA, Jennifer Schmit, University of Cincinnati, USA, Kellie Pierson, NIOSH, USA, Naomi Swanson, NIOSH, Dennis Hanseman, University of Cincinnati, USA & Lawrence Murphy, NIOSH, USA

#### Summary of Findings from a Survey of Company Telecommuting Practices and Evaluations of Telecommuting Programs

J. Steven Moore, SRPH, TAMUSHSC, USA

#### Legal/Liability Concerns with Telecommuting

William Werner, University of Nevada, Las Vegas, USA

#### Security Concerns (e.g., Encryption, Equipment or Data Theft, Equipment Damage, etc.)

Pascale Carayon, University of Wisconsin-Madison, USA

#### How to Implement and Manage Remote Workers

Andrea Jackson Toney, IBM, USA

## HIMI

### Advanced Interfaces for Safety and Security 1

#### Turin

Chairs: Shogo Nishida, Osaka University, Japan & Yoshio Nakatani, Ritsumeikan University, Japan

#### Support System for Decision Maker in Multiplex Risk Communicator

Hiroshi Yajima, Tomohiro Watanabe & Ryoichi Sasaki, Tokyo Denki University, Japan

#### 3D Geographical Display of Disaster Information for Disaster Countermeasures Office

Hirokazu Kato, Kennichi Hayashi, Yoshiyuki Mizuno & Shogo Nishida, Osaka University, Japan

#### A Study on Predicting Driving Hazard Factors for Driver Assistant Systems

Hiroshi Takahashi, Nissan Motor Company, Ltd., Japan, Kazuhiko Kawamoto, Youichi Natori, Naoyori Tanzawa & Kaoru Hirota, Tokyo Institute of Technology, Japan

#### Analysis of Information Presentation from the Standpoint of a Sense of Security

Mie Nakatani, Kosuke Takahashi & Shogo Nishida, Osaka University, Japan

#### Evacuation Route Guidance via Mobile Phones Based on Three-Dimensional Geographical Information Delivery

Satoshi Hisanaga, Yuko Suganuma, Hideaki Maehara, Koji Wakimoto & Satoshi Tanaka, Mitsubishi Electric Corporation, Japan

#### Embedded Action Detector to Enhance Freedom from Care

Kyohei Koyama, Ritsumeikan University, Japan, Kouichi Nakagawa, Mitsubishi Electric Corporation, Japan & Hiromitsu Shimakawa, Ritsumeikan University, Japan

#### Support System for Reconstructing Fond Memories Lost in Disasters

Yoshio Nakatani, Ritsumeikan University, Japan

### Knowledge Management Tools 3

#### Trevi

Chair: Vincent Duffy, Mississippi State University, USA

**Giving the Main Role to Web Documents in a Distributed Text-Based Persistent Conversation**  
Henry Rodriguez, GRIHO University of Lleida, Spain & Kerstin Eklundh, NADA The Royal Institute of Technology, Sweden

#### Collaborative Structuring of Knowledge in Daily Teaching Practice—Our Experiences with Synchronous Web Based Technologies

Thorsten Hampel, Klaus Bertelt, Silke Vilt & Frank Goetz, University of Paderborn, Germany

#### Media Tray: The Cafeteria-style Viewing Environment for Digital Contents and Its Evaluation

Kiyoshi Tanaka, Tsutomu Sasaki, Yoshinobu Tonomura & Tadashi Nakanishi, NTT Cyber Solutions Labs, Japan & Noboru Babaguchi, Osaka University, Japan

#### Information Acquiring Support System Based on Keyword Continuity and Informational Difficulty

Yuko Nishihara, Osaka University, Japan, Wataru Sunayama, Hiroshima City University, Japan & Masahiko Yachida, Osaka University, Japan

#### Scientist-Centered Graph-Based Models of Scientific Knowledge

George Chin, Eric Stephan, Debbie Gracio, Olga Ann Kuzhar, Paul Whitney & Karen Schuchardt, Pacific Northwest National Laboratory, USA

#### Interaction with Semantic Spaces: Effectiveness of User Strategies

Maximilian Eibl, GESIS, Germany, Thomas Mandl, University of Hildesheim, Germany & Michael Kluck, GESIS, Germany

#### The Role of Working Memory in Multimedia Learning

Chang Nam & Amrutraj Pujari, University of Arkansas, USA

### Knowledge Organization Tools

#### Verona

Chair: Sheue-Ling Hwang, National Tsing Hua University, Taiwan

#### IDFinder: Data Visualization for Checking Reidentifiability in Microdata

Hyunmo Kang, University of Maryland College Park, USA, Sam Hawala & Laura Zayatz, The Bureau of Census, USA

#### The Analysis of the PM Checklist Design of the Etch Equipment Maintenance System for the Semiconductor Industry

Ya-Han Hsu, You-ren Wue & Sheue-Ling Hwang, National Tsing-Hua University, Taiwan

#### ubiFloorII: User Tracking and Identification System Using Photo Interrupters

Jaeseok Yun, Jeha Ryu & Woontack Woo, Gwang-Ju Institute of Science & Technology, S. Korea

#### Authentication Using Graphical Passwords: Basic Results

Susan Wiedenbeck & Jim Waters, Drexel University, USA, Jean-Camille Birget, Rutgers University, USA, Alex Broditskiy & Nasir Memon, Polytechnic University, USA

#### Age and Male/Female Estimation System Based on Facial Textures

Hironori Takimoto, The University of Tokushima, Japan, Yasue Mitsukura, Okayama University, Japan & Norio Akamatsu, University of Tokushima, Japan

#### Using Electronic Personal Data to Identify the Person and Prevent Identity Theft

Ann Nossier, Strathclyde University, United Kingdom

#### The Influence of Data Representation on End User Database Queries

Laurel King & Martha Crosby, University of Hawaii at Manoa, USA

# Parallel Tech

Monday, July 25, 2005 • Afternoon 1:30–3:30 pm

## KIMI

### Interface Design Concepts

Pisa

*Chair: Alvaro Taveira, University of Wisconsin-Whitewater, USA*

#### Setting up a Multimodal Database for Multi-Study Emotion Research in HCI

Michael Blech, Christian Peter, Rene Stahl, Jorg Voskamp & Bodo Urban, Fraunhofer-IGD, Germany

#### A Methodology for the Design of Multimedia Ludic Artifacts with the Active Participation of Children

Ana Isabel Veloso, Conceicas Lopes & Oscar Mealha, University of Aveiro, Portugal

#### NetWork Oasis: Creativity Supporting Hybrid Space

Evgenia Chernenko & Tatiana Glotova, Joensuu Science Park, Finland & Esko Marjomaa, University of Joensuu, Finland

#### An Integrated Approach for Semantics-Driven Information Retrieval

Christoph Kunz, Fraunhofer-IAO, Germany

#### An Evaluation of Meaning and Content Quality in Hypermedia

Francisco Cipolla Ficarra, Universita degli Studi di Bergamo, Italy

#### User Interfaces for Service Oriented Architectures

Wolfgang Beinhauer & Thomas Schlegel, Fraunhofer-IAO, Germany

#### Rethinking the Experience of Enterprise Reporting Solutions

Joelle Carignan, Manik Singh & Benjamin Tomsky, SAP Labs, USA

## OCSC

### WWW-Based Communities

Tiberius 5

*Chairs: Piet Kommers, University of Twente, The Netherlands & Jennifer Preece, University of Maryland, College Park, USA*

#### Virtuality and Realism in WWW-Based Communities

Piet Kommers, University of Twente, The Netherlands

#### Creation of Large-Scale Learning Conversations in Loose Cross-Cultural Communities of Interest

Friedrich Scheuermann, Institute for Future Studies, Austria & Nick Kearney, Florida Centre de Formacio, Spain

#### Respecting Difference: Developing Governance of International Online Student Collaboration

Frances Bell, Elena Zaitseva & Nicola Coates, University of Salford, United Kingdom

#### Synthesizing a Superorganization Out of Community Processes

Nick Flor, University of New Mexico, USA

#### Computational Support for Realism in Virtual Environments

Meurig Beynon, University of Warwick, United Kingdom

#### The Roles and Effects of Active Lurking in In-House Online Communities

Masamichi Takahashi, Masakazu Fujimoto & Nobuhiro Yamasaki, Fuji Xerox Co. Ltd., Japan

#### Analyzing Activity Levels in Online Health Communities with a Mixed Methodology

Gilberto Munoz-Cornejo & Stephen Holden, University of Maryland Baltimore County, USA & Jennifer Preece, University of Maryland, USA

#### Sociability and Usability for Contribution Based on Situated Informal Learning and Consensus Knowledge Building in Online Communities

Niki Lambropoulos, Intelligenesis Consultancy, United Kingdom

## VR

### Virtual Design and Manufacturing

Regalium

*Chairs: Pat Banerjee, University of Illinois at Chicago, USA & Zhi-geng Pan, Zhejiang University, China*

#### Free Form Sketching in 3D Using Uniform Spherical Reference Points

Hang Yu & Ali Akgunduz, Concordia University, Canada

#### Virtual Clay Modeler Using a Force/Position Input Glove

Ameya Kamerkar, University of Buffalo, USA, Thenkurussi Kesavadas, SUNY, Buffalo, USA & Ajay Anand, University of Buffalo, USA

#### Calligraphic Interfaces for Modeling Constrained Objects in CAD and Medical Domain

Joaquim Jorge & Bruno De Araujo, INESC, Portugal & Pedro Santos, Fraunhofer-IGD, Germany

#### Virtual Presentation of Products Based on Virtual Human

Tian Chen, GE (China) R&D Center Co., Ltd., China & Zhi-geng Pan, Zhejiang University, China

#### Research on Scalable Active Interest Management

Bei Jia, Yeyi Cui, Zeng Dinghao & Pan Jingui, Nanjing University, China

#### EasyHouse-I: A Virtual House Presentation System Based on Internet

Jianhao Ding, Lingyun Yu & Yigang Wang, HZIEE, China & Zhi-geng Pan, Zhejiang University, China

#### Design of the Immersive Touch™: A High-Performance Haptic Augmented Virtual Reality System

Cristian Luciano, Pat Banerjee, Lucian Florea & Greg Dawe, University of Illinois at Urbana-Champaign, USA

#### A Virtual Reality Based Interface for Effective Layout Design of Flexible Manufacturing Systems

Amarnath Banerjee & Bikram Sharda, Texas A&M University, USA

### Panel: Using Game Engines to Build Virtual Training Applications for Education

Majestium

*Moderators: Perry McDowell & Joe Sullivan, Naval Postgraduate School, USA*

Rudolph Darken, The MOVES Institute, USA

Marc Prensky, Games2Train.com, USA

J.C. Herz, Joystick Nation, USA

Kurt Squire, University of Wisconsin-Madison, USA

Ben Sawyer, DigitalMill, USA

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## U&I

### Cross-Cultural, Global, and Mobile User-Interface Design

#### Tiberius 1

*Chair: Aaron Marcus, Aaron Marcus and Associates, USA*

#### Questioning the Implicitness: Issues in Developing and Testing Mobile Devices for International Markets

Christian Sturm, arolis—international ease of use, Germany, Mario Alberto Morenzo Rocha, Universidad Tecnologica de la Mixteca, Mexico & Pia Quaet-Faslem, Siemens AG, Germany

#### Mobile Phone Usage in Japan by Japanese Brazilian People Working in Japan Compared to Japanese People

Masaaki Kurosu, National Institute of Multimedia Education, Japan

#### Using Cultural Theories to Design Websites

Emilie Gould, Acadia University, Canada

#### Cultural Dimensions: Who is Stereotyping Whom?

Gabrielle Ford, University of Kwazulu-Natal, Africa, Paula Kotze, University of South Africa, S. Africa & Aaron Marcus, Aaron Marcus & Associates, Inc., USA

#### Wrist-Top User-Interface Design

Aaron Marcus, Aaron Marcus and Associates, Inc., USA & Seonghee Park, Illinois Institute of Technology, USA

#### Mobile Applications for the Enterprise Market

Roman Longoria, Computer Associates, USA

#### Banking through Text Messaging

Marta Rey-Barbarro, University of Michigan, USA

### Global Software Engineering Practices

#### Naples

*Chair: Allen Milewski, Monmouth University, USA*

#### Software Engineering for Global Markets—A “System Test” Cultural and Regional Perspective

Patrick O’Sullivan, IBM Dublin Software Lab, Ireland

#### Solitary Collaboration Across Cultures: A Qualitative Examination

Allen Milewski & Bonnie Mullinix, Monmouth University, USA

#### Towards Usable Visual Data Mining Environments

Edwige Fangseu Badjio & Francois Poulet, ESIEA Recherche, France

#### Cross-Cultural Study of Information Seeking

Anita Komlodi, University of Maryland Baltimore County, USA

#### Web Site Usability Issues in Children and Children with Disabilities

Jorian Clarke, SpectraCom, Inc., USA & Jonathan Lazar, Towson University, USA

## EPCE

### Design of Personal Task Environments

#### Genoa

*Chair: Mark Neerincx, TNO Human Factors, The Netherlands*

#### Designing Collaborative Environments for Older Adults

Julian Sanchez, Neta Ezer, Wendy Rogers & Arthur Fisk, Georgia Institute of Technology, USA

#### An IP Continuum for Adaptive Interface Design

Charles Isbell, Jr. & Jeffrey Pierce, Georgia Institute of Technology, USA

#### Personal Mobile Support for Crisis Management Using Ad-Hoc Networks

Leon Rothkrantz, Dragos Datcu, Siska Fitrianie & Bogden Tatomir, Delft University of Technology, The Netherlands

#### A User Based Framework to Support Multitasking on a Mobile Device

Stacey Nagata & Herre van Oostendorp, Utrecht University, The Netherlands & Mark Neerincx, TNO Human Factors, The Netherlands

#### Personal Attentive User Interfaces for Mobile Police Officers

Jan Willem Streefkerk, Myra van Esch-Bussemaekers & Mark Neerincx, TNO Human Factors, The Netherlands & Stacey Nagata, Utrecht University, The Netherlands

#### “What was Discussed by Whom, How, When and Where?”

#### Personalized Browsing of Annotated Multimedia Meeting Recordings

Anita Cremers & Bart Hilhorst, TNO Human Factors, The Netherlands

# Parallel Tech

Monday, July 25, 2005 • Afternoon 4–6 pm

AC

## Cognitive Foundations of Human Information Processing

**Tiberius 7**

*Chair: James Patrey, NAVAIR, USA*

### The Cognitive Pyramid—Fundamental Components that Influence Human Information Processing

James Patrey, Naval Air Warfare Center Aircraft Division, USA & Amy Kruse, DARPA, USA

### Computation of the Correlation Between Consciousness and Physiology in Stress Environments

Tadashi Kitamura, Akihiro Nanjoh & Kohji Hirakoba, Kyushu Institute of Technology, Japan

### Training Effects on the Neural Circuits that Support Attention and Multi-Task Performance

Paige Scalf, Kirk Erickson, Stan Colcombe, Jenny Kim, Maritza Alvarado, Ruchika Wadhwa & Arthur Kramer, University of Illinois at Urbana-Champaign, USA

### Nonlinear Dynamics Model and Simulation of Spontaneous Perception Switching with Ambiguous Visual Stimuli

Norbert Fuerstenau, German Aerospace Center, Germany

### Augmented Cognition and Time Perception

Gisela Bahr, NAVAIR Orlando TSD, USA, Beth Wheeler Atkinson, JHT, Inc., USA, Melissa Walwanis Nelson, NAVAIR Orlando TSD, USA & Eric Stewart, JHT, Inc., USA

### Change Blindness: What You Don't See is What You Don't Get

Paula Durlach, U.S. Army Research Institute, USA

### Stress, Cognition & Human Performance: A Conceptual Framework

Mark Staal, Multi-National Force-Iraq HQ, USA

## Closed Loop Systems—Stability and Predictability

**Tiberius 8**

*Chair: Blair Dickson, QinetiQ Ltd., United Kingdom*

### Closed Loop Systems—Stability and Predictability

Blair Dickson, QinetiQ Ltd., United Kingdom

### Statistical Process Control as a Mathematical Model for Closed Loop Stability

Richard Barker, The Boeing Company, USA

### Enabling Improved Performance Through a Closed Loop Adaptive System Driven by Real-Time Assessment of Cognitive State

Michael Dorneich, Santosh Mathan, Janet Creaser, Stephen Whitlow & Patricia Ververs, Honeywell Laboratories, USA

### The Future of Augmentation Managers

Tom Diethel, QinetiQ Ltd., United Kingdom

### Cybernetics of Augmented Cognition as an Alternative to Information Processing

Thomas Smith, University of Minnesota, USA & Robert Henning, University of Connecticut, USA

### Implementation of a Closed Loop Real-Time EEG-Based Drowsiness Detection System: Effects of Feedback Alarms on Performance in a Driving Simulator

Chris Berka, Daniel Levendowski, Philip Westbrook, Gene Davis & Michelle Lumicao, Advanced Brain Monitoring Inc., USA, Richard Olmstead, Psychopharmacology and Nicotine, USA, Miodrag Popovic, University of Belgrade, Serbia & Montenegro, Vladimir Zivkovic & Caitlin Ramsey, Advanced Brain Monitoring Inc., USA

### The Challenges of Designing an Intelligent Companion

Masja Kempen, Manuela Viezzer, Pascal Bisson & Kees Nieuwenhuis, DECIS Laboratory, The Netherlands

UAHCI

## Communication by Gaze Interaction—from AAC to Mainstream HCI

**Claudius 2**

*Chair: John Paulin Hansen, IT University of Copenhagen, Denmark*

### Is it Better to Gaze and Frown or Gaze and Smile When Controlling User Interfaces?

Veikko Surakka, Poika Isokoski, Marko Illi & Katri Salminen, University of Tampere, Finland

### Multiple Low-Cost Cameras for Effective Head and Gaze Tracking

Fulvio Corno & Alessandro Garbo, Politecnico di Torino, Italy

### Mainstreaming Gaze Interaction Towards a Mass Market for the Benefit of All

John Paulin Hansen, Dan Witzner Hansen & Anders Sewerin Johansen, IT University of Copenhagen, Denmark & John Elevesjo, Tobii Technology AB, Sweden

### Segmentation of Object-Based Video of Gaze Communication

Shankar Manuel Aghito, Soren Forchhammer, Mikkel B. Stegmann & Bjarne Ersboell, Technical University of Denmark, Denmark

### Towards Emotion Modeling Based on Gaze Dynamics in Generic Interfaces

Martin Vester-Christenson, Denis Leimberg, Bjarne Ersboell & Lars Kai Hansen, Technical University of Denmark, Denmark

### From Gaze Control to Attentive Interfaces

Aulikki Hyrskykari, Paivi Majaranta & Kari-Jouko Raiha, University of Tampere, Finland

### Learning to Type Japanese Text by Gaze Interaction in Six Hours

Hirota Aoki & Kenji Itoh, Tokyo Institute of Technology, Japan & John Paulin Hansen, IT University of Copenhagen, Denmark

### Fly Where You Look: Enhancing Gaze Based Interaction in 3D Environments

Richard Bates & Howell Istance, De Montfort University, United Kingdom, Mick Donegan & Lisa Oosthuizen, ACE Centre, United Kingdom

## Future Directions in Personalization and Context-Aware Access

**Claudius 3**

*Chairs: Claudia Niederee, Fraunhofer-IPSI, Germany, Giovanni Semeraro, University of Bari, Italy; Matthias Hemmje, Fern Universitat Hagen, Germany & Pasquale Lops, University of Bari, Italy*

### Adaptive Personalization for Mobile Content Delivery

Daniel Billsus, FX Palo Alto Lab, USA, Raymund Klefstad & Michael Pazzani, University of California, Irvine, USA

### Automatic Student Personalization in Preferred Learning Categories

Nicola Capuano & Matteo Gaeta, Universita degli Studi di Salerno, Italy, Alessandro Micarelli & Enver Sanginetto, Universita degli Studi Roma Tre, Italy

### Towards Cross-System Personalization

Bhaskar Mehta, Claudia Neideree & Avare Stewart, Fraunhofer-IPSI, Germany

### An Improved Representation for Content-Based Television Personalization

Michael Pazzani, University of California, Irvine, USA & Clifford Brunk, Yahoo!, USA

### Semantically Enhanced Personalization for the Web

Marco Degemmis, Pasquale Lops & Giovanni Semeraro, Universita degli Studi di Bari, Italy

### Ontology-Based Content Adaptation of Local Information for Tourists

Michael Pieper, Fraunhofer-FIT, Germany, Maria Fostieri & Vassilis Spitzadakis, FORTHnet SA, Greece

### Smart Care: The Importance and Challenges of Creating Life Histories for People with Cognitive Disabilities

Melissa Dawe, University of Colorado-Boulder, USA, Gerhard Fischer, University of Colorado, L3D, USA, Andrew Gorman, Anja Kintsch, Shin'ich Konomi & James Sullivan, University of Colorado, USA, John Taylor & Greg Welles, Imagine!, USA

Monday • 4–6 pm

# nical Sessions

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## HCI

### Universal Access and Virtual Environments

#### Claudius 4

*Chair: Alexandros Mourouzis, FORTH-ICS, Greece*

#### User-Centred Design of Mixed Reality for Vehicle Maintenance Training: An Empirical Comparison of Two Techniques for User Needs Analysis

Margarita Anastassova, French Atomic Energy Commission, France, Jean-Marie Burkhardt, Christine Megard & Arnaud Leservot, Descartes University-Paris V, France

#### A Framework for Realizing Multi-Modal VR and AR User Interfaces

Wolfgang Broll, Irma Lindt, Jan Ohlenburg & Axel Linder, Fraunhofer-FIT, Germany

#### Conceptual Navigation for Virtual Environments in Medical Training

Piet Kommers, University of Twente, The Netherlands

#### A Multimodal Immersive Solid Modeler with Reactive Objects

Thomas Convard & Patrick Bourdot, LIMSI-CNRS, France

#### Low Cost VR for Participatory Design of Workstations

Gu van Rhijn & Peter Vink, TNO Work and Employment, The Netherlands

### Current Status of Usability Engineering in Japan

#### Tiberius 1

*Chair: Masaaki Kurosu, National Institute of Multimedia Education, Japan*

#### Overview of the Current Status of Usability Engineering in Japan

Masaaki Kurosu, National Institute of Multimedia Education, Japan

#### Proposal for User Experience Design Tool

Kazuhiko Yamazaki, IBM Japan/The University of Tokyo, Japan

#### Usability for All—Sensory Evaluation Reflecting the Cultural Background

Naotsune Hosono, Oki Consulting Solutions, Japan, Hiromitsu Inoue, Chiba College of Health Science, Japan, Yutaka Tomita & Yoshikazu Yamamoto, Keio University, Japan

#### Non Profit Organization for Human-Centered Design

Haruhiko Urokohara, UI Eyes Novas, Inc., Japan, Masaaki Kurosu, National Institute of Multimedia Education, Japan & Yayoi Kitamura, Toita Women's College, Japan

#### The Development of OBSERVANT EYE to Effective Implement Observation Records for Usability Testing

Yi Qiang, Taka-aki Suzuki, Satoshi Sakuragawa & Hisae Tamura, Shizuoka Industrial Research Institute, Japan & Masaaki Kurosu, National Institute of Multimedia Education, Japan

#### Activities on Usability Engineered Products/Services (UEP/UES)

Tadashi Kobayashi, Fujitsu Info Software Technologies Ltd., Japan

#### Usability Evaluation of Website Designs Based on Semantic Model of Eye Tracking in Web Search

Masaki Omata, Tadashi Makinae, Yuichi Fujita & Atsumi Imamiya, University of Yamanashi, Japan

### Theoretical and Practical Aspects of Advanced Interfaces

#### Tiberius 2

*Chair: Anthony Norcio, University of Maryland Baltimore County, USA*

#### Computer Attitude and Computer Self-Efficacy: A Case Study of Thai Undergraduate Students

Jantawan Noiwan & Thawatchai Piyawat, Prince of Songkla University, Thailand & Anthony Norcio, University of Maryland Baltimore County, USA

#### Usability Testing of BlogExpress: Blog Reader Software as a Knowledge Management Tool

Thawatchai Piyawat & Jantawan Noiwan, Prince of Songkla University, Thailand & Anthony Norcio, University of Maryland Baltimore County, USA

#### The Effects of Color and Layering on Comprehension of Multi-Layered Email Messages

Darren Denenberg, Linda Hansen, Nathaniel Czarnota, Jo Chakraborty & Anthony Norcio, University of Maryland Baltimore County, USA

#### Cue Overloading at the Point of Attention in Highly Visual Displays

Darniet Jennings, University of Maryland Baltimore County, USA

#### Visual Interfaces: Moving from Paper to Large-Screen Visual Display Units to Small-Screen Visual Display Units

Lawrence Burgee, Towson University, USA

#### Evaluation Framework for Fuzzy Theoretic-Based Recommender System

Azene Zenebe & Anthony Norcio, University of Maryland Baltimore County, USA

#### On Usability of Multi-Agent Systems in the M-Commerce Environment

Amrith Vyas & Asim Ant Ozok, University of Maryland Baltimore County, USA

### Towards Personalized HCI With the Use of Intelligent Agents

#### Tiberius 3

*Chair: Evangelos Bekiaris, Hellenic Institute of Transport, Greece*

#### Towards the Development of a Driver Support Module Using Intelligent Agent Technology

Maria Panou, Hellenic Institute of Transport, Greece

#### ASK-IT: Intelligent Agent Application for a Self-Adaptive User Interface for Mobility Impaired Users

Christian Knoll, University of Stuttgart, Germany, Panos Karampelas, FORTH-ICS, Greece & Maria Panou, Hellenic Institute of Transport, Greece

#### Preliminary Guidelines for the Personalization of the HMI of Hypovigilance-Management-Systems

Lorenz Hagenmeyer & Claus Marberger, University of Stuttgart, Germany, Evangelos Bekiaris & Stella Nikolaou, Hellenic Institute of Transport, Greece

#### Multi-Agent System for Personalized and Context Related Info-Mobility Services

Nikolaos Spanoudakis, Singular Software SA, Greece & Maria Panou, Hellenic Institute of Transport, Greece

#### The Use of Intelligent Agents for Provision of Driver Information in a Self-Explanatory and Personalized Way

Evangelos Bekiaris, Konstantinos Kalogirou & Maria Panou, Hellenic Institute of Transport, Greece & Angelos Amditis, Institute of Communication & Computer Systems, Greece

HCI

## Multimedia 2

### Tiberius 4

*Chair: Holly Vitense, Medtronic, USA*

#### Interaction and Design for a Multi-User Edutainment Application on a Large-Scale Screen

Bernd Schwald, ZGDV e.V.—Computer Graphics Center, Germany, Torsten Froehlich, Bauhaus University Weimar, Germany & Rolf Kruse, Cybernarium Projektgesellschaft mbH, Germany

#### Initialising a Cognitive User Model of Memory Within a Mobile Game

Konstantinos Manos & Maria Virvou, University of Piraeus, Greece

#### A Study of User Interaction in Real World Role-Playing Game in a Museum Field

Atsushi Hiyama, The University of Tokyo, Japan

#### User Experience Evaluation of a Distributed Interactive Movie

Jun Hu, Eindhoven University of Technology, The Netherlands, Maddy Janse, Philips Research Eindhoven, The Netherlands & Hyun-Joo Kong, Eindhoven University of Technology, The Netherlands

#### User Controlled Emotional Regulation System for Games Based on Form Factor Adaptations

Timo Saari, Helsinki School of Economics, Finland, Niklas Ravaja & Jari Laarni, Helsinki School of Economics, Finland & Marko Turpeinen, Helsinki Institute for Information Technology, Finland

#### Video for the Masses: A Further Study into the Effectiveness of Low Quality Streamed Video

Lee Griffiths, University of Salford, United Kingdom, Sally Thornhill, University of Manchester, United Kingdom & Panagiotis Tsolakis, University of Salford, United Kingdom

#### Designing Presentation Recording Applications: A Hierarchy for Quality Issues of Capturing Techniques

Conrad Pomm, ETH Zurich, Switzerland

## Usability 2

### Tiberius 5

*Chair: Masaki Nakagawa, Tokyo Institute of Agriculture & Technology, Japan*

#### The Hybrid Desktop within Engineering Environments

Holger Graf, Stefan Wundrak & Andre Stork, Fraunhofer-IGD, Germany

#### Sketchtools: Prototyping Physical Interaction

Matt Cottam, Tellart & RISD, USA

#### Evaluating the Usability of a Handheld Device—Experience on the Used Methods

Annu-Maaria Nivala, Finnish Geodetic Institute, Finland, Kaisa Savolainen & Jaana Kuorelahti, Helsinki University of Technology, Finland & Tuulia Haikarainen, Software Business & Engineering Institute, Finland

#### Designing Interaction Compatibility Between Graphic and Solid User Interfaces—A Case Study of Portable Media Player

Shih-Chieh Chen, Tatung Company, Taiwan, Chien-Hsiung Chen, National Taiwan University of Science & Technology, Taiwan, Chieh-Yu Chen & Yueh-Chi Wang, Tatung Company, Taiwan

#### A Music Player that Adapts to Levels of User's Intention

Misuru Minakuchi, National Institute of Information & Communication Technology, Japan, Tatsuya Yoneda, Itaru Kuramoto, Yu Shibuya & Yoshihiro Tsujino, Kyoto Institute of Technology, Japan

#### Seamless and Transparent Middleware User Interface

Mikko Laakso, Helsinki University of Technology, Finland

#### Uncovering Known Usability Issues by Optimizing Your Internal Resources

Lynn Rampoldi-Hnilo, PeopleSoft, USA

## Recognition Systems (Text, Graph, Tactile & Voice)

### Tiberius 6

*Chair: James Lewis, IBM Pervasive Computing Division, USA*

#### Information Display by Wearable Pneumatic Tactile Interface

Yeongmi Kim & Jeha Ryu, Gwangju Institute of Science & Technology, S. Korea

#### Visual Destruction for Understanding Small-World Networks

Kazuo Misue, University of Tsukuba, Japan

#### Accuracy Error Span Evaluations: Implications for User Interface Design of Speech Dictation and Handwriting Recognition Applications

James Lewis, IBM Pervasive Computing Division, USA

#### Optimizing the Pause Length before Presentation of Global Navigation Commands

Patrick Commarford & James Lewis, IBM Pervasive Computing Division, USA

#### Speech Usability Metric: Evaluating Spoken Language Systems

Priyanka Gupta & Juan Gilbert, Auburn University, USA

E&H

## Upper Extremity Disorders and Computer Work

### Palermo

*Chair: David Rempel, University of California, San Francisco, USA*

#### Musculoskeletal Disorders and Computer Use Among Engineering Graduate Students

David Rempel, University of California, San Francisco, USA, Eric Schlossberg, Sandra Morrow, Augusta Llosa & Peter Dietrich, University of California, USA

#### Upper Extremity Mono-Neuropathy Among Engineers

Craig Conlon, Boeing, USA & David Rempel, University of California, San Francisco, USA

#### The Impact of Two Ergonomic Interventions on Health and Productivity: A Quasi-Experimental Field Study

Benjamin Amick III, University of Texas at Houston, USA, Michelle Robertson, Liberty Mutual Research Institute for Safety, USA, Anne Moore, York University, Canada, Kelly DeRango, W.E. Upjohn Research Institute, USA & Cammie Chaumont Menendez, University of Texas, USA

#### ICT Use and the Prevalence of Upper Extremity Symptoms and Psychological Symptoms among Young Adults in a Prospective Cohort Study

Sara Thomee, Sahlgrenska Academy and University Hospital, Sweden, Mats Eklof, Sahlgrenska Academy at Goteborg University, Sweden, Ewa Gustafsson & Mats Hagberg, Sahlgrenska Academy and University Hospital, Sweden

#### Job Strain and Risk of Musculoskeletal Symptoms Among a Prospective Cohort of Occupational Computer Users

Fred Gerr, University of Iowa, USA, Lindsay Hannan, Carolyn Monteilh, David Kleinbaum & Michele Marcus, Emory University, USA

#### Relating Worker Fatigue with Keyboard Forces and Typing Performance

Che-Hsu Chang, Harvard School of Public Health, USA, Peter Johnson & Jennifer Ibbotson, University of Washington, Seattle, USA & Jack Dennerlein, Harvard School of Public Health, USA

# nical Sessions

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HIMI			OCSC
<b>Interface Design</b> <b>Turin</b>	<b>Mobile Device Interfaces</b> <b>Trevi</b>	<b>Advanced Interfaces for Safety and Security 2</b> <b>Verona</b>	<b>Learning with Distant Collaborators in Higher Education</b> <b>Pisa</b>
<i>Chair: Barrett Caldwell, Purdue University, USA</i>	<i>Chair: Gunilla Bradley, IT University/Royal Institute of Technology, Sweden</i>	<i>Chairs: Shogo Nishida, Osaka University, Japan &amp; Yoshio Nakatani, Ritsumeikan University, Japan</i>	<i>Chair: Lecia Barker, University of Colorado, USA</i>
<b>The Role of Voluntary of Attention in HCI</b> Gabriella Pravettoni & Salvatore Nuccio Leotta, University of Milan, Italy, Avale Ugo, University of Turin, Italy & Sebastiano Bagnara, Politecnico of Milan, Italy	<b>A Design Research of the User Interface of the Mobile Communication Device for the Elderly</b> Chen-Fu Chen, Mingchuan University, Taiwan	<b>Analytical Approach to Correct and Succinct Interface Design for Safety-Monitoring in Cockpit</b> Tetsuo Sawaragi, Yukio Horiguchi & Akihiro Hina, Kyoto University, Japan	<b>Integrating Course Topics with Inter-site On-line Communities</b> Donna Ashcraft, Clarion University of Pennsylvania, USA & Thomas Treadwell, West Chester University of Pennsylvania, USA
<b>Design and Usability of Interactive Voice Response Systems for Emerging Markets</b> Abhimanyu Nohwar & Beena Prabhu, Human Factors International, India, Kalika Bali & Girish Prabhu, HF Labs India, India	<b>Investigating Privacy-Augmented Displays for Mobile Devices</b> Andrea Grimes & Peter Tarasewich, Northeastern University, USA	<b>Information Retrieval Using a Concept Structure of Experts</b> Takuya Ogure, RISTEX Japan, Japan, Keiich Nakata & Kazuo Furuta, The University of Tokyo, Japan	<b>Widening the Horizon Using the OEIGP</b> Mats Daniels, Uppsala University, Sweden, Kristine Faulkner, London South Bank University, United Kingdom & Ian Newman, Loughborough University, United Kingdom
<b>User Interfaces Adaptation by Use of Evolutionary Algorithms</b> Oswaldo Velez-Langs, Universidad Rey Juan Carlos, Spain & Angelica de Antonio, Universidad Politecnica de Madrid, Spain	<b>Factors Influencing End-User Adoption of Mobile Music Services in Europe: A Field Experiment</b> Pavlos Vlachos, AUEB Research Center, Greece & Adam Vrechopoulos, Athens University of Economics & Business, Greece	<b>Spatio-temporal Search Interface of Video Data with Virtual Wall</b> Yiqun Wang, Yoshinori Hijikata & Shogo Nishida, Osaka University, Japan	<b>The Fishbowl: Building Common Ground in Global Teamwork</b> Renate Fruchter, Stanford University, USA
<b>Utility of Haptic Data in Recognition of User State</b> Namkee Park, Weirong Zhu, Younbo Jung, Margaret McLaughlin & Seung-A Jin, University of Southern California, USA	<b>Time, Place, Purpose and Personal Profile Based Information Retrieval for Recommendation Service in Mobile Environment</b> Sineenard Pinyapong & Toshikazu Kato, Chuo University, Japan	<b>Implementation and Evaluation of an Individual Authentication System Using the Trajectory by the Mouse During Password Entry</b> Koichiro Yuzuriha, Kansai University, Japan, Kentaro Kotani, Harvard School of Public Health, USA & Ken Horii, Kansai University, Japan	<b>Grid Computing at the Tribal Colleges</b> Al Kuslikis, Tribal Colleges & Universities Projects, USA
<b>Tangible Interaction with Digital Media</b> David Keyson, Miguel Bruns Alonso, Marco Rozendaal & Philip Ross, Delft University of Technology, The Netherlands	<b>Usability in Mobile Work Support Systems</b> Bengt Sandblad, Uppsala University, Sweden	<b>Construction and Evaluation of Keystroke Authentication System Using Numerical Keypad with Force Sensors</b> Yasuki Norioka, Kansai University, Japan, Kentaro Kotani, Harvard School of Public Health, USA & Ken Horii, Kansai University, Japan	<b>ICT Education in Tanzania: A Contextualized Approach</b> Erkki Sutinen & Mikko Vesisenaho, University of Joensuu, Finland
<b>Examining the Qualitative Gains of Mediating Human Interruptions During HCI</b> Sonja Gievaska, Robert Lindeman & John Sibert, The George Washington University, USA	<b>Conversation Support for Persistent Mobile Interaction</b> Mikael Wiberg, Umea University, Sweden	<b>Discussion Flow Visualization: Improving the Literacy of Group Discussions</b> Kyoko Ito, Yusuke Ohmori & Shogo Nishida, Osaka University, Japan	<b>A Distributed Rap Session: Students' Online Research Experience</b> Phoebe Leneari, Allison Clark, Douglas Brown, Willie Hill & Saheed Rosenje, University of Illinois at Urbana-Champaign
<b>Research on User-Centered Scenario-Based Design and Its Application</b> Dan-Li Wang & Guo-Zhong Dai, Institute of Software, Chinese Academy of Science, China		<b>Context Aware Operation Reproduction for Safety Driving</b> Satoshi Kaede & Hiroyuki Yamahara, Ritsumeikan University, Japan, Shinsuke Azuma, Mitsubishi Electric Corporation, Japan & Hiromitsu Shimakawa, Ritsumeikan University, Japan	<b>Frameworks for Analyzing Computer-Mediated-Communication in e-Learning</b> Andrew Laghos & Panayiotis Zaphiris, Centre for HCID, City University, United Kingdom
<b>Use Patterns and User Needs with Digital Devices</b> Barrett Caldwell, Enlie Wang & M. Cecilia Gonzalez, Purdue University, USA			

OCSC

## Social Computing

### Claudius 1

*Chair: Wayne Lutters, University of Maryland Baltimore County, USA*

#### Text Messaging to the Home with TxtBoard

Kenton O'Hara, Hewlett-Packard Laboratories, USA, Richard Harper, Microsoft Research, USA, Axel Unger, IDEO, Germany, James Wilkes, Bill Sharpe & Marcel Jansen, The Appliance Studio, United Kingdom

#### E-Yosegaki: A Tool to Help Multiple People Communicate with an Individual

Masayuki Ihara, Yoshihiro Shimada & Minoru Kobayashi, NTT Corporation, Japan

#### Does a Class Need a Teacher? New Teaching and Learning Paradigms for Virtual Learning Communities

Thomas Koehler & Nina Kahnwald, University of Potsdam, Germany

#### Paradise Lost? Primary Empathy in Online Communities of Interest and Ways of Use

Niki Lambropoulos, Intelligenesys Consultancy, United Kingdom

#### The Perception and Experiences of Virtual World by the Context of Gamers in Real World, in Case of Korean and Japan: Different Perception of On-line Game World by Real World Cultural Context in Korea in Japan

Sang-Min Whang, Geunyoung Chang & Jee Yon Kim, Yonsei University, Korea

#### IS-BoardII: The Bulletin Board System to Support Information Sharing for Information Education

Tomofumi Uetake, Senshu University, Japan, Yoshihisa Shinozawa, Keio University, Japan & Shinji Takao, NTT Advanced Technology Corporation, Hitachi Center, Japan

#### Emotional Immersiveness in Gaming Environments from a Social Constructionistic Perspective

Hans-Christian Stoltz, University of Lund, Sweden

VR

## Virtual Environments as Training Tools

### Regalium

*Chairs: Joseph Cohn & Roy Stripling, U.S. Naval Research Lab, USA*

#### Virtual Environments for Training Decision Making

Thomas Alexander, Carsten Winkelholz & Helge Renkewitz, FGAN-FKIE, Germany & Christopher Schlick, RWTH Aachen University, Germany

#### Assessing the Use of Virtual Environments to Train Soldiers

Bruce Knerr, Patrick Garrity & James Grosse, U.S. Army Research Institute, USA

#### Use of Haptic Displays to Enhance Training in a Virtual Environment

Jennifer Fowlkes, CHI Systems, Inc., USA, Donald Washburn, University of Central Florida, USA, Susan Eitelman, CHI Systems, Inc., USA, Jason Daly, University of Central Florida, USA & Joseph Cohn, U.S. Naval Research Laboratory, USA

#### A New VE Challenge: Immersive Experiences for Team Training

Frederick Brooks, University of North Carolina at Chapel Hill, USA, Jan Cannon-Bowers, University of Central Florida, USA, Henry Fuchs, Leonard McMillan & Mary Whitton, University of North Carolina at Chapel Hill, USA

#### The Convergence of Computer Games and Virtual Reality:

#### Opportunities for Future Synthetic Environment Training

Robert Stone, University of Birmingham, United Kingdom

#### Human Emotional State and Its Relevance for Military VR Training

Albert (Skip) Rizzo, Jacqueline Ford Morie, Josh Williams, Jarrell Parr & J. Galen Buckwalter, University of Southern California, USA

#### Trainee-Centric Design for Developing Military-Based Virtual Environment Training Systems

Joseph Cohn, U.S. Naval Research Laboratory, USA, Dylan Schmorrow, DARPA/IPTO, USA, Denise Nicholson, NAVAIR Orlando TSD, USA, Potomac Training Corporation, USA, Kay Stanney, University of Central Florida & Design Interactive Inc., USA & Laura Milham, Design Interactive, Inc., USA

## Perception and Interaction—Getting the Most out of a VR Application

### Majestium

*Chairs: Rob King & Mark Scerbo, Old Dominion University, USA*

#### Continuous Assessment of Spatial Presence and Emotional State

Jari Laarni & Kari Kallinen, Helsinki School of Economics, Finland

#### Comparison of Augmented Reality and Virtual Reality in the Context of a Hybrid Multimodal Sales Process Supporting System for Traditional City-Centre Shops

Rainer Blum & Karim Khakzar, Fulda University of Applied Sciences, Germany & Wolfgang Frank, idmk GmbH, Germany

#### Prototype System for Navigating the Moon-Surface Using a Walking-Stepper

Hideaki Kobayashi, The Graduate University for Advanced Studies, Japan & Kikuo Asai, National Institute of Multimedia Education, Japan

#### Effects of Viewpoint Manipulation on Scene Understanding

Robert King & James Bliss, Old Dominion University, USA

#### Development of a Benchmarking Scenario for Testing 3D User Interface Devices and Interaction Methods

Albert (Skip) Rizzo, University of Southern California, USA, Gerard Kim, Pohang University of Science & Technology, S. Korea, Shih-Ching Yeh & Maras Thiebaut, University of Southern California, USA, Jayne Hwang, Pohang University of Science & Technology, S. Korea & J. Galen Buckwalter, University of Southern California, USA

#### Using Barriers in Immersive Virtual Environments

Scott Frees, Jean Nonnemaker & Drew Kessler, Lehigh University, USA



# nical Sessions

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## U&I

### Usability, E-Learning Design and Internationalization

#### Naples

*Chair: Panagiotis Zaharias, Athens University of Economics and Business, Greece*

#### Usability Testing an Instructional Textbook in Conjunction with an Online Course

Linda Lohr, Heng-Yu Ku, James Gall & John Cooney, University of Northern Colorado, USA

**Usable E-Learning: A Conceptual Model for Evaluation and Design**  
Brad Mehlenbacher, Leslie Bennett, Tammy Bird, Melonie Ivey, Jan Lucas, Janet Morton & Lisa Whitman, North Carolina State University, USA

#### Usability and User-Centered Development (UCD) for Smart Phones—the Mobile Learning Engine (MLE) a User Centered Development Approach for a Rich Content Application

Alexander Nischelwitzer, Graz University of Applied Sciences, Austria, Andreas Holzinger, Graz Medical University, Austria & Matthias Meisenberger, Graz University of Applied Sciences, Austria

#### Evaluating the Suitability of Learning Management Systems Within the Context of Quality of Use

Rosemary Hayes, The University of Oklahoma, USA

#### Using Metaphors to Guide Interface Design: A Case Study of Tide.com Stain Detective and Users from India

A. Dawn Shaikh & Barbara Chaparro, Wichita State University, USA, W. Todd Nelson, Air Force Research Laboratory, USA & Anirudha Joshi, Indian Institute of Technology, India

#### A User-Value-Based Localization Model

Suzan Boztepe, Middle East Technical University, Turkey

## EPCE

### Functionalist HCI

#### Genoa

*Chair: Guy Boy, EURISCO International, France*

#### Coordination, Authority Trading, and Control in the Context of Safety-Critical Systems

Gudela Grote, ETH Zurich, Switzerland & Guy Boy, EURISCO International, France

#### Risk of Collision and Behavior Adequacy Assessment for Managing Human-Machine Interaction

Thierry Bellet, H. Tattegrain-Veste & A. Bonnard, INRETS-LESCOT, France

#### Communicating Intent for Planning and Scheduling Tasks

Valerie Shalin, Wright State University, USA, Roxana Wales, SAIC NASA Ames Research Center, USA & Deborah Bass, NASA Jet Propulsion Lab, USA

#### Cognitive Attractors and Activity-Based Design: Augmented Meeting Rooms

Saadi Lahlou, EDF R&D, France

#### A Cross-Fertilized Evaluation Method based on Visual Patterns and Cognitive Functions Modeling

Lucas Stephane & Guy Boy, EURISCO International, France

#### Human-System Task Integration

Jan Maarten Schraagen, TNO Defence Security & Safety, Finland

#### Human Performance Modelling in Assessment of Advanced Air Traffic Management Aiding Systems

Kevin Corker, San Jose State University, USA

AC

## Human-Machine Symbiosis— Biological Interfaces

Tiberius 7

*Chair: Kevin Warwick, The University of Reading, United Kingdom & Frank Greitzer, Pacific Northwest Laboratories, USA*

### Human-Machine Symbiosis Overview

Kevin Warwick & Mark Gasson, The University of Reading, United Kingdom

### Assessment of Invasive Neural Implant Technology

Adam Spiers, Kevin Warwick & Mark Gasson, The University of Reading, United Kingdom

### Recording Options for Brain-Computer Interfaces

Gerwin Schalk & Jonathan Wolpaw, Wadsworth Center, NY State Department of Health, USA

### First Investigations of an fNIR-Based Brain-Computer Interface

Evan Rapaport & Traci Downs, Archinoetics LLC, USA, Dennis Proffitt, University of Virginia, USA & J. Hunter Downs III, Archinoetics LLC, USA

### Using Hypermedia to Support Communication in Alzheimer's Disease: The CIRCA Project

Arlene Astell & Maggie Ellis, University of St. Andrews, United Kingdom, Norman Alm, Richard Dye, Gary Gowans & Jim Campbell, University of Dundee, United Kingdom

### Information Frames in Augmented Reality Mobile User Interfaces

Charles Owen, Frank Biocca, Arthur Tang & Fan Xiao, Michigan State University, USA, Weimin Mou, Chinese Academy of Sciences, China & Lynette Lim, University of Michigan, USA

### Toward Collective Intelligence

Alex Pentland, The MIT Laboratory, USA

## Neural Correlates of Cognitive State

Tiberius 8

*Chair: Wilhelm Kincses, DaimlerChrysler AG, Germany*

### Neural Correlates and Cognitive States of Driving

Wilhelm Kincses, DaimlerChrysler AG, Germany

### Spatial-Frequency Networks of Cognition

Donald DuRousseau, John Stanley & M.A. Mannucci, Human Bionics LLC, USA

### Preattentive Crossmodal Information Processing Under Distraction and Fatigue

Klaus Mathiak, RWTH Aachen University, Germany, Ingo Hertrich & Krystyna Swirszcz, University of Tübingen, Germany, Mikhail Zvyagintsev, RWTH Aachen University, Germany, Werner Lutzenberger & Hermann Ackermann, University of Tübingen, Germany

### EEG- and Context-Based Cognitive-State Classifications Lead to Improved Cognitive Performance While Driving

Andreas Bruns, Konrad Hagemann & Michael Schrauf, DaimlerChrysler AG, Germany, Jens Kohlmorgen, Mikio Braun, Guido Dornhege & Klaus-Robert Müller, Fraunhofer-FIRST, Germany, J. Chris Forsythe, Kevin Dixon & Carl Lippitt, Sandia National Laboratories, USA, Carey Balaban, University of Pittsburgh, USA & Wilhelm Kincses, DaimlerChrysler AG, Germany

### Neural Correlates of Simulated Driving: Auditory Oddball Responses Dependent on Workload

Markus Raabe & Roland Rutschmann, University of Regensburg, Germany, Michael Schrauf, DaimlerChrysler AG, Germany & Mark Greenlee, University of Regensburg, Germany

### An Experiment to Probe Brain Responses to Driver Information Systems

Pieter Poolman, Don Tucker & Phan Luu, Electrical Geodesics, Inc, USA, Thomas Schnell & Fuat Aktan, University of Iowa, USA

### Neurophysiological Indices of Perceptual Workload: Implications for Adaptive Technologies

Carryl Baldwin, Jennifer May & Frederick Freeman, Old Dominion University, USA

UAHCI

## Ambient Intelligence and Disability

Claudius 2

*Chair: Pier Luigi Emiliani, CNR/FAC, Italy*

### Dynamic Deployment of Remote Graphical Toolkits over Bluetooth from Wearable Devices

Anthony Savidis & Constantine Stephanidis, FORTH-ICS, Greece

### A Support Tool for the Design of User Interface Adaptation

Margherita Antona, Anthony Savidis & Constantine Stephanidis, FORTH-ICS, Greece

### Ambient Intelligence and Disability: The Technological Perspective

Laura Burzagli, Pier Luigi Emiliani & Paolo Graziani, CNR-IFAC, Italy

### Ambient Intelligence and Disability: The User Perspective

Mathijs Soede, iRV, Institute for Rehabilitation Research, The Netherlands

### Ambient Multimodality: An Asset for Developing Universal Access to the Information Society

Noelle Carbonell, University Henri Poincaré, LORIA, CNRS & INRIA, France

### Use of User Interface Sockets to Create Naturally Evolving Intelligent Environments

Gregg Vanderheiden & Gottfried Zimmermann, University of Wisconsin-Madison, USA

### eAccessibility Legislation and Policy: The Role of Standardisation

Jan Engelen, Katholieke Universiteit Leuven, Belgium & Pier Luigi Emiliani, CNR-IFAC, Italy

# nical Sessions

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## HCI for the Mobile Users

### Claudius 3

Chair: *Evangelos Bekiaris, Hellenic Institute of Transport, Greece*

#### HCI for Collaborative Systems and Towards a Self-Explanatory Environment

Evangelos Bekiaris & Maria Panou, Hellenic Institute of Transport, Greece, Harald Widloither & Wilhelm Bauer, Fraunhofer-IAO, Germany

#### Mobile and Desk Integrated Virtual Reality

Hilko Hoffmann & Manfred Dangelmaier, Fraunhofer-IAO, Germany & Oliver Stefani, COAT-Basel, Switzerland

#### Optimized HCI Representation for Multimodal Infomobility Services Within IM@GINE IT

Juergen Weisser & Thomas Pretsch, Porsche Engineering, Germany, Valter Zoccasato, Motorola GSG SpA, Italy, Monica Raimondi, Mizar Mediaservice srl, Italy & Vassilis Mizaras, TREDIT S.A., Greece

#### HCI in Driver Training: From Novice to Elderly Drivers

Maria Panou & Evangelos Bekiaris, Hellenic Institute of Transport, Greece

#### Towards Guidelines for the Development of HCI Elements for Drowsy Operators in Transportation and Process Control

Lorenz Hagenmayer, University of Stuttgart, Germany, Evangelos Bekiaris, Hellenic Institute of Transport, Greece & Harald Widloither, Fraunhofer IAO, Germany

#### An Adaptive HMI for Integrated ADAS/IVICS Presentation to the Driver—The AIDE Approach

Angelos Amditis & Anastasia Bolvinou, Institute of Communication & Computer Systems, Greece, Enrica Deregibus, Centro Recherche FIAT, Italy, Johan Engstrom, Volvo Technical Corporation, Sweden & Holger Kussmann, Robert Bosch GmbH, Germany

#### Towards the Mobile Interaction as a Mean to Achieve E-Inclusion

Maria Cabrera & Maria Arredondo, Universidad Politecnica de Madrid, Spain, Juan Carlos Naranjo, Technical University of Valencia, Spain & Ioannis Karaseitanidis, NTUA, Greece

## Web Accessibility Methodologies and Tools

### Claudius 4

Chair: *Chieko Asakawa, Tokyo Research Lab, IBM Japan, Japan*

#### Visualizing the Accessibility of HTML Tables for Web Page Developers

Dorian Miller, University of North Carolina at Chapel Hill, USA, Hironobu Takagi, Kentarou Fukuda & Chieko Asakawa, Tokyo Research Lab, IBM Japan, Japan

#### How Can Tools Help Web Designers Ensure the Real Usability for the Blind on the Web?

Hironobu Takagi, Shin Saito, Kentarou Fukuda & Chieko Asakawa, Tokyo Research Lab, IBM Japan, Japan

#### Presentation-Based Web Accessibility Evaluation System: Design and Implementation Challenges and Trade-Offs

Catherine Laws, IBM Accessibility Center, USA

#### Methods for Improving Web Portal Accessibility

Bob Easton, IBM TJ Watson Research Center, USA & Matthew King, IBM Corporation, USA

#### Improving Access to Digital Broadcasting for Visually Impaired Users

Tadahiro Sakai, Satoru Kondo, Kinji Matsumura & Takayuki Ito, NHK Science & Technology Research Laboratory, Japan

## Universal Interfaces

### Claudius 1

Chair: *Anthony Savidis, FORTH-ICS, Greece*

#### Deciding Layers: Adaptive Composition of Layers in a Multi-Layer User Interface

Bryan Clark, Red Hat, Inc., USA & Jeanna Matthews, Clarkson University, USA

#### Adding Intuition to a Self-Revealing Interface

Matthew Hockenberry, MIT Media Laboratory, USA

#### E-Assiste: A Platform Allowing Evaluation of Text Input Systems

Mathieu Raynal, Sebastien Maubert, Nadine Vigouroux, Frederic Vella & Laurent Magnien, IRIT-DIAMANT, France

#### A General Personalization Tool Based on a Multi-Agent Architecture

Abdouroihamane Anil, LAMIH & Archimed, France, Emmanuelle Grislín-LeStrugeon & Mourad Abed, LAMIH, France

#### A Decision-Making Specification Language for Automatic Interface Adaptation

Anthony Savidis, Margherita Antona & Constantine Stephanidis, FORTH-ICS, Greece

## Cognitive Architectures in HCI

### Tiberius 1

*Chair: Michael Byrne, Rice University, USA*

**Cognitive Architectures in HCI: Present Work and Future Directions**  
Michael Byrne, Rice University, USA

**Integrating Modeling and Simulation into a General-Purpose Tool**  
Christian Lebiere, Rick Archer, Walter Warwick & Dan Schunk, Micro Analysis and Design, USA

**Cognitive Architecture for Website Design and Usability Evaluation: Comprehension and Information Scent in Performing by Exploration**  
Muneo Kitajima, National Institute of Advanced Industrial Science & Technology, Japan, Marilyn Hughes Blackmon & Peter Polson, University of Colorado at Boulder, USA

**Fidelity Issues in Cognitive Architectures for HCI Modeling: Be Careful What You Wish For**  
David Kieras, University of Michigan, USA

**Information Scent and Web Navigation: Theory, Models, and Automated Usability Evaluation**  
Peter Pirolli, PARC, USA, Wai-Tat Fu, Carnegie Mellon University, USA, Ed Chi, & Ayman Farahat, PARC, USA

**Image Processing in Cognitive Models with SegMan**  
Robert Amant & Mark Riedl, University of Southern California, USA, Frank Ritter & Andrew Reifers, The Pennsylvania State University, USA

**A Constraint-Based Approach to Understanding the Composition of Skill**  
Alonso Vera, NASA Ames Research Center, USA, Andrew Howes, Manchester University, United Kingdom, Richard Lewis, University of Michigan, USA, Irene Tollinger & Katherine Eng, NASA Ames Research Center, USA & Juliet Richardson, Convergys, Inc., USA

## Virtual Engineering

### Tiberius 3

*Chair: Hans-Jorg Bullinger, Fraunhofer Gesellschaft, Germany*

**Virtual Engineering—Challenges and Solutions**  
Hans-Jorg Bullinger, Fraunhofer Gesellschaft, Germany, Thomas Potinecke, Volker Tippmann & Thorsten Rogowski, Fraunhofer-IAO, Germany

**CAE Concept Designing: A Key Enabler in Virtual Product Development**  
Ulrich Stuhec, Suwei Zhou & Behrooz Shahidi, Ford Motor Company, USA, Hans Zimmer & M. Prabhuaingankar, SFE GmbH, Germany

**Semantic Based Engineering**  
Joachim Warschat, Oliver Schumacher & Michael Diederich, Fraunhofer-IAO, Germany

**cAR/PE!—An Interactive Three Dimensional Approach of a Network Based Videoconferencing System for Natural Communication in Virtual Project Teams**  
Alfred Katzenbach & Wilhelm Wilke, DaimlerChrysler AG, Germany

**Semantic Web Services Enabling Collaborative Engineering**  
Thomas Fischer, Fraunhofer-IAO, Germany, Michael Murphy, Ryerson University, USA, Volker Tippmann, Fraunhofer-IAO, Germany & Many Ayromlou, Ryerson University, USA

**Driving the CAVE—VR Driving Simulators for Engineering and Training**  
Matthias Bues, Manfred Dangelmaier, Christopher Mayer & Roland Blach, Fraunhofer-IAO, Germany

**Optimizing Immersive Virtual Reality Systems for Office Workplaces**  
Oliver Stefani, COAT-Basel, Switzerland, Brenda Wiederhold, Interactive Media Institute, USA, Hilko Hoffmann, Fraunhofer-IAO, Germany & Alex Bullinger, COAT-Basel, Switzerland

## User Interface Design—Motion

### Tiberius 4

*Chair: Ephraim Glinert, National Science Foundation, USA*

**Hand Interaction Simulation for Augmented Handwriting Using an ACTIVE TABLET**  
Carmen Gillette, MSU MET/MIND Lab, USA

**A Qualitative Cross-Cultural Study on the Critical User Interface Attributes of Mobile Data Services**  
Boreum Choi, Inseong Lee & Jinwoo Kim, Yonsei University, S. Korea

**StepMan—New Kind of Music Interaction**  
Gerald Bieber & Holger Diener, Fraunhofer-IGD, Germany

**User-Interface of a UML-Editor for Supporting an Early Brainstorming-Phase in the RTOS Development**  
Jorg Stocklein & Franz Rammig, University of Paderborn, Germany

**Challenges in Conducting User-Centered Evaluations of Mobile Services**  
Asbjorn Folstad & Odd-Wiking Rahlff, SINTEF Info & Communication Technology, Norway

**Human-Computer Interaction in Map Revision Systems**  
Jun Zhou, Walter Bischof & Terry Caelli, University of Alberta, Canada

**Human Vehicle Context-Aware Communication Multidisciplinary Approach Needs and Requirements**  
Damiani Sergio, Enrica Deregibus & Domenico Morreale, Centro Ricerche FIAT, Italy & Roberto Montanari, University of Modena and Reggio Emilia, Italy

## Intelligent/Adaptive Systems/Software

### Tiberius 5

*Chair: Pei-Luen Patrick Rau, Tsinghua University, China*

**Scorekeeping with Smart Phones Mobile Solution for Outdoor Team Sports Tournaments**  
Hartti Suomela & Asmo Soino, Finnish Flying Disc Association, Finland

**An Intelligent Museum Tour Guide Using a Vision-Enabled PDA**  
Timothy Ritchings, Zhen Peng & Zak Al-Hassani, University of Salford, United Kingdom

**Intelligent Wearable Assistance System for Human Environment Interaction**  
Jin Choi, KAIST, S. Korea, Taewoo Hanseman, Yong-Ho Seo & Hyun Yang, KAIST, S. Korea

**Principles and Practice of Improving Web Interaction on Small Screen Terminals**  
Weining Yue, Wenguang Chen, Heng Wang, Guoping Wang & Shihai Dong, Peking University, China

**GlueBar: A Solution Pattern for Integrating Interfaces into Self-Contained Applications**  
Thomas Koltringer, Karin Kappel & Thomas Grechenig, Vienna University of Technology, Austria

**Digital Paper Concept for Reflective Writing by Seamless Traverse Between Handwritten and Coded Information**  
Shun'ichi Tano, University of Electro-Communications, Japan, Shinjiro Kamura, Admiral Systems Inc., Japan & Mitsuru Iwata, University of Electro-Communications, Japan

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## Explicit Comparisons of Mobile and E-Commerce from the User's Perspective

### Tiberius 2

*Chair: Asim Ant Ozok, University of Maryland Baltimore County, USA*

### Intelligent Human-Agent Interaction: Attributes that Need to be Honed

Amrish Vyas & Asim Ant Ozok, University of Maryland Baltimore County, USA

### Personalized Recommender Systems in e-Commerce and M-Commerce: A Comparative Study

Azene Zenebe, Anthony Norcio & Asim Ant Ozok, University of Maryland Baltimore County, USA

### A Study of Presentations of Mobile Web Banners

Pei-Luen Patrick Rau, Tsinghua University, China, Jenwen Chen, DBTEL Inc., China & Duye Chen, Tsinghua University, China

### An Analytic Approach to Analyze the User Requirements for Mobile Commerce

Gulcin Buyukozkan, Galatasaray University, Turkey & Asim Ant Ozok, University of Maryland Baltimore County, USA

### What are the Differences Between the Prefixes "M" and "E" for Commerce?

Mehmet Yenisey, Istanbul Technical University, Turkey & Asim Ant Ozok, University of Maryland Baltimore County, USA

### A Comparison Study on E-Commerce and M-Commerce Security Attributes

June Wei, University of West Florida, USA & Asim Ant Ozok, University of Maryland Baltimore County, USA

### Perceived Differences Between Mobile and Electronic Commerce: The User's Perspective

Asim Ant Ozok, University of Maryland Baltimore County, USA & June Wei, University of West Florida, USA

## Usability 3

### Tiberius 6

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

### Human-Moderated Remote User Testing: An Empirical Evaluation

Asimina Vasalou, Imperial College London, United Kingdom, Lidia Oshlyansky & Paul Cairns, University College London, United Kingdom & Konstantinos Savakis, USA

### Usability Evaluation of Computerized Operating Procedures in a High-Consequence Industrial Workplace

Walter Gilmore, Los Alamos National Laboratory, USA & Nathan Brannon, Sandia National Laboratories, USA

### Low-Cost and Rapid Prototyping of UI-Embedded Mock-Ups Using RFID and its Application to Usability Testing

So Horiuchi, Satoshi Kanai & Takeshi Kishinami, Hokkaido University, Japan, Shouichi Hosoda, Yasuaki Ohshima & Yoshiyuki Shiroma, Sapporo School of the Arts, Japan

### Usability of State-Based Boolean eBlocks

Susan Cotterell & Frank Vahid, University of California, Riverside, USA

### A Study on Usability and Affect for Wireless Application Protocol (WAP) Services

Jazmin Chong, Martin Helander & Yoon Ping Choi, Nanyang Technological University, Singapore

### Advancing Usability Evaluation Through Human-Reliability Analysis

Ronald Boring & David Gertman, Idaho National Laboratory, USA

## E&H

## Technology and Patient Safety

### Palermo

*Chair: Ben-Tzion Karsh, University of Wisconsin-Madison, USA*

### Impact of PDA-Based ePrescribing Adoption on Medication Safety in Ambulatory Care

Kimberly Galt, James Bramble, Ann Rule, Mark Siracuse & Wendy Taylor, Creighton University, USA

### Form or Function: Design Considerations for Electronic Prescription Writing Tools

Kevin Johnson, Vanderbilt University Medical Center, USA, Janet Serwint, Coda Davison & Allen Walker, Johns Hopkins University School of Medicine, USA

### Temporal Cognitive Work: Discovering Requirements for Digital Artifacts

Christopher Nemeth, Michael O'Connor, P. Allan Klock & Richard Cook, The University of Chicago, USA

### Continuous Technology Implementation in Health Care: The Case of Advanced IV Inflation Pump Technology

Pascale Carayon, Tosha Wetterneck, Ann S. Hundt, Myra Enloe, Tracy Love, Steve Rough & Mark Schroeder, University of Wisconsin-Madison, USA

### A Conceptual Framework for Understanding the Safety Implications of Bar Code Enabled Point of Care (BPOC) Systems

Ben-Tzion Karsh, University of Wisconsin-Madison, USA

## HIMI

## Improving Usability

### Turin

*Chair: Robert Proctor, Purdue University, USA*

### Determining Potential Metrics of Eye-Movement Data to Aid in the Usability Problem Identification Process

David Faggart & Terence Andre, U.S. Air Force Academy, USA

### Supplementing Conventional Usability Measures with Eye Movement Data in Evaluating Visual Search Performance

Agnieszka Bojko & Abigail Stephenson, User Centric Inc., USA

### Usability Evaluation in the SEWASIE (Semantic Webs and AgentS in Integrated Economies) Project

Tiziana Catarci & Tania Di Mascio, University of Rome, Italy, Paolo Dongilli & Enrico Franconi, Free University of Bozen-Bolzano, Italy, Giuseppe Santucci, University of Rome, Italy & Sergio Tassarit, Free University of Bozen-Bolzano, Italy

### Indic Scripts Based Online Form Filling—A Usability Exploration

Ashish Krishna, Human Factors International, India, Girish Prabhu, Kalika Bali & Sriganesh Madhvanath, HP Labs India, India

### The Impact of Aesthetics on Apparent Usability

Maximilian Eibl, GESIS, Germany & Thomas Mandl, University of Hildesheim, Germany

### A Study of Fidelity Level and Task/Non-Task Based Testing Scenarios on the Effectiveness of Usability Testing

Joshua Dolecal, Dahai Liu, Christina Frederick-Recascino, Nickolas Macchiarella & Sathya Gangadharan, Embry-Riddle Aeronautical University, USA

### UTAs in a Triple Integrated Methodology to Enhance Applications' Design and Usability

Osama Alshara, Higher Colleges of Technology-ADWC, United Arab Emirates

## HIMI

### Examining a Variety of Interfaces

#### Trevi

Chair: *Naomi Swanson, NIOSH, USA*

#### Managing User Interface Complexity and Usability in Computer-Supported Film Sets

Christian Martin, Augsburg University of Applied Sciences, Germany, Bernhard Prell & Alexander Schwarz, Vantage Film GmbH, Germany

#### Multiple User Interface for Exploring Genomics Databases

Pierre-Emmanuel Gros, Nicolas Ferey, Joan Herisson & Rachid Gherbi, LIMSI-CNRS, France & Ahmed Seffah, Concordia University, Canada

#### Topic Collection Support by Clustering Web Pages Based on Topical Independence

Wataru Sunayama, Hiroshima City University, Japan, Akihiro Iyama & Masahiko Yachida, Osaka University, Japan

#### An Interface of Multi-Viewpoint Maps for Reusing Software Products

Takanori Ugai & Terunobu Kume, Fujitsu Laboratories Ltd., Japan & Kazuo Misue, University of Tsukuba, Japan

#### Ergonomically Based Design of Human Interface by Means of the Nanopositioning and Nanomeasuring Machine

Torsten Gramsch, Peter Kurtz & Gunnar Sievers, Ilmenau Technical University, Germany

#### An Organisational Semiotics Approach Towards Tailorable Interfaces

Rodrigo Bonacin & Maria Cecilia Calani Baranauskas, State University of Campinas, Brazil

#### User Interface for Improving Precision and Recall in Full Text Retrieval

Jugo Noda & Hiroshi Nishihara, Hitachi Ltd. Software Division, Japan, Hiroshi Tsuji & Ryosuke Saga, Osaka Prefecture University, Japan

### Advanced Human Interface Technologies

#### Verona

Chairs: *Masaaki Terano, Matsushita Electric Works Ltd., Japan & Michiko Ohkura, Shibaura Institute of Technology, Japan*

#### An Experimental Comparison and Evaluation of AR Information Presentation Devices for a NPP Maintenance Support System

Hiroshi Shimoda, Hirotake Ishii, Yuichiro Yamazaki & Hidekazu Yoshikawa, Kyoto University, Japan

#### Relationships Between the Utterance of Emphatic Phrase and the Following Motions and Actions for a Speech-Driven Embodied Interaction System

Michiya Yamamoto & Tomio Watanabe, Okayama Prefectural University, Japan

#### Brain-Wave-Based Motion Control System for a Mechanical Pet

Michiko Ohkura, Kiyoto Itou, Seiji Ota, Motoki Oishi, Shinya Koyabu & Keiichi Sekine, Shibaura Institute of Technology, Japan

#### Objective Measurement Method for Productivity and Investigation on Environmental Factor

Fumiaki Obayashi, Matsushita Electric Works Ltd., Japan, Misa Kawauchi, Kyoto University, Masaaki Terano, Matsushita Electric Workers Ltd., Japan, Kyoko Ito, Osaka University, Japan, Hiroshi Shimoda & Hidekazu Yoshikawa, Kyoto University, Japan

#### Energy Consumption and Thermal Comfort under the Air-Conditioning System Controlled by Occupants' Voting from PC Terminal

Yoshifumi Murakami, Masaaki Terano, Ryuuichi Maeda & Tomoya Sogo, Matsushita Electric Works Ltd., Japan, Kana Mizutani, Masayuki Harada & Satoru Kuno, Nagoya University, Japan

#### A Study on Fault Detection Algorithm in Measurement Data for Verification in Building Equipment

Makoto Kawasaki, Masayuki Amano, Tomoya Sogo & Masaaki Terano, Matsushita Electric Works Ltd., Japan

#### Effect of Circadian Lighting System Complemented the Brightness with Daylight, on Human Performance

Yohsuke Yoshioka, Takaharu Kawase & Satoshi Sekikawa, Chiba University, Japan, Fumiaki Obayashi & Masaaki Terano, Matsushita Electric Works Ltd., Japan

## OCSC

### Experiencing the Online Community

#### Pisa

Chair: *Thomas Erickson, IBM TJ Watson Research Center, USA*

#### Privacy in Collaboration: Managing Impression

Sameer Patil & Alfred Kobsa, University of California, Irvine, USA

#### Intensely Focused Groups within On-Line Communities

Linda Macaulay, University of Manchester, United Kingdom, Kathy Keeling, Manchester Business School, United Kingdom, George Dafoulas, The University of Middlesex, United Kingdom, Peter McGoldrick & Emmanouil Kalaitzakis, The University of Manchester, United Kingdom

#### Artists Collaborating to Create Digital Stained Glass

Lynne Hall & Delia Whitbread, University of Sunderland, United Kingdom

#### Capturing the Communication Context of Virtual Communities of Practice

Poivi Poyry, Toni Koskinen & Marko Nieminen, Helsinki University of Technology, Finland

# nical Sessions

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## VR

### Multimodal Interaction

#### Majestium

Chairs: *Shatha Samman*, Design Interactive, Inc., USA & *Leah Reeves*, University of Central Florida & Design Interactive, Inc., USA

#### Think Multimodal to Maximize Information Management Capacity

Shatha Samman, Design Interactive Inc., USA, Kay Stanney, University of Central Florida and Design Interactive Inc., USA & Valerie Sims, University of Central Florida, USA

#### Warning Signals Go Multisensory

Cristy Ho, Oxford University, United Kingdom, Charles Spence, University of Oxford, United Kingdom & Hong Tan, Purdue University, USA

#### Speech, Earcons, Auditory Spatial Signals (SEAS): An Auditory Multimodal Approach

David Lee Jones & Shatha Samman, Design Interactive Inc., USA, Kay Stanney, University of Central Florida and Design Interactive Inc., USA & Dave Graeber, Boeing Phantom Works, USA

#### Determining the Usefulness of Affordable Haptic Feedback Devices: From Games to Applications Helping the Visually Impaired

Roope Raisamo, Saija Patomaki, Jukka Raisamo, Matias Hasu, Virpi Pasto, Katri Kosonen & Toni Pakkanen, University of Tampere, Finland

#### How to Converse with a Virtual Agent by Speaking and Listening Using Standard W3C Languages

James Larson, Intel Corporation, USA

#### Personalized Multimodal Interface Platform (PerMIP)

Ingmar Rauschert, Pennsylvania State University, USA & Rajeev Sharma, Advanced Interfaces, Inc., USA

#### Software Design of Multimodal User Interaction System

Fang Chen & Mike Wu, National ICT Australia, Australia

### VR and Emotional Content

#### Regalium

Chairs: *Jaqueline Morie & Albert (Skip) Rizzo*, University of Southern California, USA

#### Agents in Love: On the Construction and Use of Emotional Characters in VR

Josephine Ansley, University at Buffalo, USA

#### The Cognitive Semiotics of Virtual Reality

Allison McMahan, Independent, USA & Warren Buckland, Chapman University, USA

#### The Fidelity of "Feel": Emotional Affordance in Virtual Environments

Jacquelyn Ford Morie, Josh Williams, Aimee Dozois & Donat-Pierre Luigi, University of Southern California, USA

#### 9/11: Building a World of Survivor Memories

Anne Deane Berman, University of British Columbia, Canada, Carolina Cruz-Neira, Iowa State University, USA, Steven Lee Berman, Interactive Media Architect, Creative Designer and Producer, USA & Larry Tuch, TEA, USA

#### The Aesthetic Experience, Emotion, and an Artistic Virtual Environment

Dena Eber, Bowling Green State University, USA, Brian Betz, Kent State University, USA & Gregory Little, Bowling Green State University, USA

#### Desktop 3-D Interactive Drama—Applying the Design Principles from Performance Arts

Magy Seif El-Nasr, Pennsylvania State University, USA

## U&I

### Ethnography and International Usability

#### Naples

Chairs: *Adi Tedjasaputra & Eunice Ratna Sari*, TRANSLATE-EASY, Indonesia

#### A Tale of Two Cultures: Explorations in the Meaning of Culture in Ethnographic Research in Information Systems

Ellen Balka, Simon Fraser University, Canada

#### Contextualizing Cultures for the Commercial World: Techniques for Presenting Field Research in Business Environments

Brooke Foucault, Intel Corporation, USA

#### Supporting Rapid Ethnography for HCI Field Research with Pair Writing

Adi Tedjasaputra & Eunice Ratna Sari, TRANSLATE-EASY, Indonesia

#### Discovering a Common Ground in the Quest for Usable Systems

Ivelina Zlatev, IBM Business Consulting Services, USA

#### Pioneering Usability in Indonesia: Exploring the Challenges

Adi Tedjasaputra & Eunice Ratna Sari, TRANSLATE-EASY, Indonesia

#### Web Development Usability:

**A UAE Comparative Study**  
Osama Alshara, Higher Colleges of Technology-ADWC, United Arab Emirates

## EPCE

### Human Factors in Broadcast

#### Genoa

Chair: *Andrew Kilner*, Sony BPRL, United Kingdom

#### Creating the Need for Human Factors

Andrew Kilner, Victoria Jennings, S. Paszkowicz & D. Trepass, Sony Broadcast and Professional Research Labs, United Kingdom

#### God's Gift to Editors, and Is There an Afterlife

M.N. Jorgesson

#### HF in Broadcast Entertainment Systems

M. Glancy & G. Winter

#### Human Factors in Broadcast System Design

G. Winter

#### How Do You Assess the Quality of HD Transmission Formats?

S. Paszkowicz, Victoria Jennings, Andrew Kilner & D. Trepass, Sony Broadcast and Professional Research Labs, United Kingdom

AC

## Adaptive User Interfaces

**Tiberius 7**

*Chair: Tim Paek, Microsoft Research, USA*

### **Adaptive User Interfaces: Examination of Adaptation Costs in User Performance**

Avi Parush, Carleton University, USA & Yael Aurebach, Israel Institute of Technology, Israel

### **Augmented Cognition: An Approach to Increasing Universal Benefit from Information Technology**

Melody Ivory, Andrew Martin, Rodrick Megraw & Beverly Slabosky, University of Washington, USA

### **Improving Recovery from Multi-Task Interruptions Using an Intelligent Change Awareness Tool**

Harvey Smallman & Mark St. John, Pacific Science & Engineering Group, USA

### **Augmenting Knowledge Flow and Comprehension in Command and Control (C2) Environments**

Ronald Moore, Pacific Science & Engineering Group, USA

### **W+5 Architectures for Smart Interfaces**

Harry Wechsler & James Yven, George Mason University, USA & Mirco DuRousseau, Human Bionics LLC, USA

### **Windows as a Second Language: An Overview of the Jargon Project**

Tim Paek, Microsoft Research, USA & Raman Chandrasekar, Microsoft Corporation, USA

### **UCAV Operator Workload Issues Using Adaptive Aiding Systems**

Bryan Calkin, Air Force Research Laboratory, USA

## Augmented Cognition for Training Superiority and Education

**Tiberius 8**

*Chair: Denise Nicholson, NAVAIR Orlando TSD, USA & Rick Arnold, NAVAIR, USA*

### **Augmented Cognition Technologies Applied to Training: A Roadmap for the Future**

Denise Nicholson, Stephanie Lackey, Richard Arnold & Kamaria Scott, NAVAIR Orlando TSD, USA

### **Oops, I Did it Again: Using Neurophysiological Indicators to Distinguish Slips from Mistakes in Simulation-Based Training Systems**

Phan Luu, Electrical Geodesics, Inc., USA & Gwendolyn Campbell, NAVAIR Orlando TSD, USA

### **From Novice to Expert Training**

Joseph Cohn & Roy Stripling, U.S. Naval Research Laboratory, USA & Amy Kruse, DARPA, USA

### **Will Augmented Cognition Improve Training Results?**

Donald DuRousseau, M.A. Mannucci & John Stanley, Human Bionics LLC, USA

### **Augmented Tutoring: Enhancing Simulation Based Training through Model Tracing and Real-Time Neurophysiological Sensing**

Santosh Mathan & Michael Dorneich, Honeywell Laboratories, USA

### **Recreation Embedded State Tuning for Optimal Readiness and Effectiveness (RESTORE)**

Alan Pope & Lawrence Prinzel III, NASA Langley Research Center, USA

### **Potential Predictors of Errors in Shooting Judgment and Cognitive Performance**

James Meyerhoff, George Saviolakis & Bob Burge, Walter Reed Army Institute of Research, USA, William Norris, Terry Wollert & Valerie Atkins, Federal Law Enforcement Training Center, USA & Charles Spielberger, University of South Florida, USA

UAHCI

## Automatic and Manual Evaluation of Web Site Accessibility

**Claudius 1**

*Chair: Gerhard Weber, University of Kiel, Germany*

### **Describing Images on the Web: A Survey of Current Practice and Prospects for the Future**

Helen Petrie, Centre for HCI Design, United Kingdom, Chandra Harrison & Sundeep Dev, City University London, United Kingdom

### **The Accessibility of Museum Websites: Results from an English Investigation and International Comparisons**

Helen Petrie, Centre for HCI Design, United Kingdom, Neil King & Fraser Hamilton, City University London, United Kingdom, & Marcus Weisen, Council for Museums, Libraries and Archives, United Kingdom

### **Supporting Authors of Accessible Multimedia eBooks**

Adam Szczepaniak & Gerhard Weber, University of Kiel, Germany

### **Case Study: Analysis of Governmental Web Portals and Their Degree of Adaptability**

Kurt Weimann, Thorsten Volkel & Gerhard Weber, University of Kiel, Germany

### **The Accessibility of Web Applications: The Case of Portals and Portlets**

Evangelos Vlachogiannis, Jenny Darzentas, Argyris Arnellos, Thomas Spyrou & John Darzentas, University of the Aegean, Greece

### **Imergo®—A Framework to Support Standards Compliance, Quality Assurance Methods and Accessibility for Web Portals**

Dirk Stegemann, Yehya Mohamad, Johannes Koch & Carlos Velasco, Fraunhofer-FIT, Germany

## Inclusive Cognition: Exploring Cognitive Barriers to Universal Access

**Claudius 2**

*Chair: Patrick Langdon, University of Cambridge, United Kingdom*

### **Cognitive Inclusion: Cognitive Design Considerations**

Patrick Langdon, University of Cambridge, United Kingdom & Ray Adams, Middlesex University, United Kingdom

### **Designing a Screen Reader for Fully Sighted Users**

Gareth Evans & Paul Blenkhorn, University of Manchester, United Kingdom

### **Using Haptic Displays for Workload Reduction and Inclusive Control**

Joshan Meenowa, Mesar Hameed & Stephen Furner, BT Multisensory Research Group, United Kingdom & Patrick Langdon, University of Cambridge, United Kingdom

### **The Quantitative Assessment of Dysarthric Speech for Use in Evidence-Based Speech Therapy**

William Simm, Peter Roberts & Malcolm Joyce, Lancaster University, United Kingdom & Claire Phillpott, Queen Victoria Centre, United Kingdom

### **Cognitive Aspects of Public Toilet Design**

Jo-Anne Bichard & Julienne Hanson, University College London, United Kingdom & Clara Greed, University of the West of England, United Kingdom

### **Cognitive Aspects of Scripting the Design of Accessible Products**

Megan Strickfaden & Paul Rodgers, Napier University, United Kingdom & Patrick Langdon, University of Cambridge, United Kingdom

### **Assessing User Capabilities from Small Scale Samples**

Umesh Persad, Patrick Langdon & P. John Clarkson, University of Cambridge, United Kingdom



# nical Sessions

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## HCI

### Universal Access in Educational Human-Computer Interaction

#### Claudius 3

Chair: *Mark Dixon, University of Plymouth, United Kingdom*

#### Teaching Geometry to Visually Impaired Pupils Using Haptics and Sound

Sophie Zijp-Rouzier & Eric Petit, France Telecom Recherche et Developpement, France

#### Code-Memory Diagram Animation Software for Teaching Computer Programming: Contributions for and by Dyslexic Students

Mark Dixon, University of Plymouth, United Kingdom

#### Cognitive Awareness in Vocational Training Programmes: Targeting Successful Outcomes for Young People and Those Wishing to Undertake Vocational Training

Elspeth McKay, Jenny Martin & John Izzard, RMIT University, Australia

#### Practice and Evaluation of Bilingual Deaf Education Using Web-Based Learning System

Noriko Arai, National Institute of Informatics, Japan & Kayo Kawamoto, Hiroshima City University, Japan

#### Component-Based Development of a Thai-to-Braille Translation Program

Pattarachai Lalitrojwong, King Mongkut's Institute of Technology Ladkrabang, Thailand

#### Using DVD in Diabetes Education

Patrick Quinn & John Lynn, Glasgow Caledonian University, United Kingdom

### Universal Access Applications

#### Claudius 4

Chair: *Gerhard Fischer, University of Colorado, USA*

#### New Service Design Method Focused on Users' Communication Environments and its Application to Welfare Service Design

Asami Miyajima, Yoshihiro Itoh & Takumi Watanabe, NTT Energy and Environment Systems Labs, Japan

#### Improving the Quality of Life and Work of Elderly and Disabled People by Using Distance Learning and Virtual Applications

Ileana Hamburg, IAT, Wissenschaftszentrum NRW, Germany, Herbert Ten Thij, I.E.R., The Netherlands & Adina Ionescu, Octav Onicescu, Romania

#### HEDCDEH: A Heuristic Evaluation Disk for Communication and Design in Hypermedia

Francisco Cipolla Ficara, Universita degli Studi di Bergamo, Italy

#### Keyboard Interaction with a Process Flow Diagram

Todd Barlow, SAS Institute Inc., USA

#### From Scenarios to Behavior Model for Mobile Collaborative Systems

Olivier Delotte & Bertrand David, ICTT-Ecole Centrale de Lyon, France

#### The Impact of Individual Differences on the Usability of a Speech-Activated Automated Mobile City Guide Service

Mark Howell & Steve Love, Brunel University, United Kingdom & Mark Turner, University of Portsmouth, United Kingdom

#### Tools for Living and Tools for Learning

Stefan Carmien & Gerhard Fischer, University of Colorado, USA

### Communicating with Computers: Natural Interaction

#### Tiberius 1

Chair: *Vicki Hanson, IBM T.J. Watson Research Center, USA*

#### Speech Interaction for Mobile Devices: A Natural Solution to a Contextual Conundrum

Richard Goldman, Kathleen Price, Min Lin, Jinjuan Feng & Andrew Sears, University of Maryland Baltimore County, USA

#### A Haptic Toolbar for Motion-Impaired Users

Faustina Hwang, Patrick Langdon & P. John Clarkson, University of Cambridge, United Kingdom & Simeon Keates, IBM TJ Watson Research Center, USA

#### Common Chatroom Abbreviations Speed Pen Computing

William Huber, IBM, USA, Vicki Hanson, IBM TJ Watson Research Center, USA, Sung-Hyuk Cha & Charles Tappert, Pace University, USA

#### Text Input to Handheld Devices for People with Physical Disabilities

Brad Myers & Jacob Wobbrock, Carnegie Mellon University, USA

#### Hello, What Do You Do? Natural Language Interaction with Intelligent Environments

Gregg Vanderheiden, Gottfried Zimmerman & Karen Blaedow, University of Wisconsin-Madison, USA & Shari Trewin, IBM TJ Watson Research Center, USA

#### Practical Applications of Brain Computer Interface Systems Using Selective Attention

Brendan Allison & Melody Moore, Georgia State University, USA

### Display Design & Usability

#### Tiberius 2

Chair: *Nancy Lightner, South University, USA*

#### Domain Expert Driven Display Design for Process Surveillance and Control

Robin Welch, Alf Ove Braseth, Oysten Veland, Christer Nihlwing & Haken Svengren, OECD Halden Reactor Project, Norway

#### Presenting Chinese Text on Small Displays with Rapid Serial Visual Presentation

Yu-Hung Chien & Chien-Hsiung Chen, National Taiwan University of Science & Technology, Taiwan

#### A Digital Television Screen is Not a Computer Screen: User Interface Design for Digital Television

Jungwon Lee, Samsung Electronics Co. Ltd., S. Korea

#### Work with Visually Suboptimal Displays—In What Ways is the Visual Performance Influenced When CRT- and TFT-Displays are Compared

Sophie Oetjen, Martina Ziefle & Thomas Groger, RWTH Aachen University, Germany

#### Designing Against Mainstream Design—A Challenge for Mobile Device User Interface Development

Lauri Repokari, Helsinki University of Technology, Finland

## Web Accessibility and Usability

### Tiberius 3

*Chairs: Katsunori Shimohara, ATR Network Informatics Labs Japan, Japan & Hidehiko Okada, Kyoto Sangyo University, Japan*

#### **Color-Coded Document Catcher: Interface for Reading Online Documents Using the Psychological Effects of Color**

Junko Ichino, TIS Inc., Japan, Kazuhiro Takeuchi & Hitoshi Isahara, National Institute of Information and Communication Technology, Japan

#### **Agent System for Notifying Hotel Room Reservation Alternatives**

Ryosuke Saga, Hiroshi Tsuji & Jun Onoda, Osaka Prefecture University, Japan

#### **A User Study of Information Integration System for e-Marketplace**

Yukitaka Kusumura, Yoshinori Hijikata & Shogo Nishida, Osaka University, Japan

#### **Geographic Communication System using Function of Blog**

Masahiro Watanabe & Michiko Ohkura, Shibaura Institute of Technology, Japan

#### **Interaction Logging and Analysis Tool Estimating Expected Operations for Unexpected User Operations**

Hidehiko Okada, Kyoto Sangyo University, Japan, Tsutomu Ashio, Kazuo Kunieda & Hideo Shimazu, NEC System Technologies, Ltd., Japan

#### **Tool for Measuring Webpage Visual Features**

Hidehiko Okada, Kyoto Sangyo University, Japan, Toshiyuki Asahi & Izumi Kohno, NEC Corporation, Japan

#### **Usability Test of PDA's Interface to Display Map**

Yiqun Wang, Shigeru Tokahashi, Yoshinori Hijikata & Shogo Nishida, Osaka University, Japan

## User Interface Design—Display

### Tiberius 4

*Chair: Asim Ant Ozok, University of Maryland Baltimore County, USA*

#### **Exploring Display Factors that Influence Co-Located Collaboration: Angle, Size, Number, and User Arrangement**

Kori Inkpen, Kirstie Hawkey & Melanie Kellar, Dalhousie University, Canada, Regan Mandryk, Simon Fraser University, Canada, Karen Parker & Derek Reilly, Dalhousie University, Canada, Stacey Scott, University of Calgary, Canada & Tara Whalen, Dalhousie University, Canada

#### **Improving the Maintenance Engineer's View to the Process Control System**

Carsten Beuthel & Ulrich Topp, ABB Corporate Research, Germany

#### **Developing Techniques for Visualising Scenarios**

Kari-Pekka Aikio & Ilari JOunila, University of Oulu, Finland & Timo Jokela, Oulu University, Finland

#### **Identifiability: A Predictive Quantitative Measure for the Comparison of a Task Designed in Different Interaction Styles**

Georgios Christou, Cyprus College, Greece & Rob Jacob, Tufts University, USA

#### **Scenario-Based Design in Practice**

Janet Ho, Stephen O'Connell & Wayne Ho, IBM Canada, Canada

#### **Alphanumeric and Graphical Authentication Solutions:**

**A Comparative Evaluation**  
Asim Ant Ozok & Stephen Holden, University of Maryland Baltimore County, USA

## Technology Interaction

### Tiberius 5

*Chair: Sheue-Ling Hwang, National Tsing Hua University, Taiwan*

#### **The Structure Design of Smart Phone User Interface**

Xiaowei Yuan, Xiaowei Liu, Xubo Jiang & Qianqian Li, Beijing ISAR User Interface Design Co. Ltd., China

#### **The Knowledge Acquisition of TFT-LCD Defects Inspection**

Jung-Jung Chang & Sheue-Ling Hwang, National Tsing Hua University, Taiwan & Chao-Hua Wen, Research Alliance, Taiwan TFT LCD Association, Taiwan

#### **The Interaction Framework for Context-Aware Systems**

Sangchul Ahn, Donghoon Kang & Heedong Ko, Korea Institute of Science & Technology, Korea, & Yoonchul Choy, Yonsei University, South Korea

#### **Multimodal Interaction in VR-CAVE: A Single Display Groupware Application**

Wingly Shih, National Chiao Tung University, Taiwan

#### **Standards Language for Developing Multimodal Interaction**

James Larson, Intel Corporation, USA

#### **Effects of Prior Knowledge and User Habits on Utilization of Replacement Products**

Kerem Kuleli & Cigdem Erbug, Middle East Technical University, Turkey

## Health Effects of Choices in the Office Work

### Palermo

*Chairs: Peter Vink, TNO Work and Employment, The Netherlands & Kaguyu Noro, Waseda University & ErgoSeating, Ltd., Japan*

#### **Effects of Tasks and Furniture on Productivity and Health**

Peter Vink & Dianne Commissaris, TNO Work and Employment, Finland

#### **Sitting Comfort of Office Chair Design**

Goroh Fujimaki, Gifu Prefectural Human Life Technology Research Institute, Japan & Kageyu Noro, Waseda University & ErgoSeating, Ltd., Japan

#### **An Evidence Based Research on a Break for Office Work**

Kageyu Noro, Waseda University & ErgoSeating, Ltd., Japan & Hideki Oyama, Waseda University, Japan

#### **Optimizing Call Center Computer Desk Lay-out and the Effect on Physical Workload, Productivity and Perceived Usefulness**

Elsbeth de Korte & Piet van Lingen, TNO Work and Employment, The Netherlands

#### **The Usage of Notebook Input Devices in the Context of RSI Risks**

Christine Sutter & Martina Ziefle, RWTH Aachen University, Germany

#### **Blood Flow Changes in RSI Subjects: An Introduction of a Pen with Biofeedback**

Marijke Dekker, Delft University of Technology, The Netherlands, Rob Krullaards, Gert-Jan Kleinrensink & Chris Snijders, University Medical Center Rotterdam, The Netherlands

#### **How Adequate is the Standard VDU Setting for Users with Musculoskeletal Disorders Regarding Performance and Muscular Load?**

Katrin Bremel & Martina Ziefle, RWTH Aachen University, Germany

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

HIMI

## Patterns and Models for the Development of Interactive Systems

Verona

Chair: *Peter Forbrig*, University of Rostock, Germany

### Model-Driven Engineering of Cooperative Systems

Bertrand David, Rene Chalon & Olivier Delotte, ICTT-Ecole Centrale de Lyon, France

### Impact of Usability Design Patterns on Web Modelling

Birgit Bomsdorf, University of Hagen, Germany & Gerd Szwillus, University of Paderborn, Germany

### Models and Patterns for the Specification of the Context of Use

Anke Dittmar & Peter Forbrig, University of Rostock, Germany

### Patterns and Components for Enhancing Reusability and Systematic UI Development

Daniel Sinnig, University of Rostock, Germany, Homa Javahery, Concordia University, Canada, Peter Forbrig, University of Rostock, Germany & Ahmed Seffah, Concordia University, Canada

### Integrating UIML, Task and Dialogs with Layout Patterns for Multi-Device User Interface Designs

Kris Luyten & Karin Coninx, Limburgs Universitair Centrum, Belgium & Marc Adams, Harmonia Inc., USA

### Workflow Specifications and Design Patterns

Christian Stary, University of Linz, Austria

### Multi-Level Patterns for the Planes of User Experience

Thomas Tiedke, Thomas Krach & Christian Martin, Augsburg University of Applied Sciences, Germany

## ECommerce/Shopping Concepts

Turin

Chair: *Bernhard Zimolong*, Ruhr University Bochum, Germany

### Prevention-Oriented Communication Between Customers and Suppliers: Test of a Structural Model

Bjorn Kraemer & Bernhard Zimolong, Ruhr-University of Bochum, Germany

### Effectiveness of Multiple Hierarchies: Application to the Product Classification Structure of Cyber Malls

Jungwon Lee, Samsung Electronics Co. Ltd., S. Korea

### E-Commerce: Study of e-Relationship Management (eRM) in Irish Retailers' Context

Nilesh Shitre, Nishigandha Ambekar-Shitre & Tom Fennell, Dublin Institute of Technology, Ireland

### The Design of Hybrid Shopping Systems for Traditional City-Center Shops—Lessons from the ShopLab Project

Beate Jehn, Fulda University of Applied Sciences, Germany, Stuart Booth, DNA Experience, United Kingdom, Karim Khakzar, Fulda University of Applied Sciences, Germany & Hans-Martin Pohl, idmk GmbH, Germany

### Enhancing User Effectiveness when Searching for Information on the Web

Kemal Efe, University of Louisiana, USA

### Information Model of a Virtual Community to Support Customer Cooperative Product Configuration

Thomas Leckner & Johann Schlichter, Technisches Universitat Munchen, Germany

## HCI in Medical Environments and the Classroom

Pisa

Chair: *Holly Vitense*, Metronic Inc., USA

### Integrating Usability into Development of a Clinical Decision Support System

Rollin Fairbanks, University of Rochester School of Medicine, USA, Stanley Caplan, Usability Associates, USA & Robert Panzer, University of Rochester Medical Center, USA

### Using Storyboards to Validate Home Use Medical Device Design Concepts

Paul Blowers & Laura Dove, Medtronic, Inc., USA & Juliet Mbiti, University of Toronto, Canada

### Improving Usability Engineering Through Product Post Market Usability Analysis

Robert North, Human Centered Strategies Consulting, USA & Kate Peterson, MK Peterson Consulting, USA

### Challenges in HCI Development for Medical Devices: A Human Factors Perspective

William Muto & Edmond Israelski, Abbott Laboratories, USA

### Forming of an International Learning Community with the Purpose of Collaborative Development of Ontologies

Ildar Galeev, Oleg Kolosov & Alexander Filyaev, Kazan State Technological University, Russia

### An Agent-Based Intelligent Tutoring System Architecture

Antonio Fernandez-Caballero & Jose Manuel Gascueia, University of Castilla-La Mancha, Spain, Federico Botella Bevia & Enrique Lazcorreta, University Miguel Hernandez of Elche, Spain

### A Question of Fit Between Today's Graduate Student and Tomorrow's Tech-Savvy Professor: The Lessons Learned from the Teaching with Technology Course

Jen Schoepke & Gina Svarovsky, University of Wisconsin-Madison, USA

### The Need of Interactive Training Tools in ITS Use Training: Collaborative Work Within

HUMANIST Network of Excellence  
Stella Nikolaou, Evangelia Gaitanidou & Evangelos Bekiaris, Hellenic Institute of Transport, Greece

HIMI

## Mobile Interactions

### Trevi

*Chairs: Hiroshi Tamura, Hiroshima International University, Japan & Masaru Miyao, Nagoya University, Japan*

#### Accommodative Load from Mobile Phone E-Mail

Masako Omori & Masaru Miyao, Nagoya University, Japan, Hisao Ishigaki, Aichi Institute of Technology, Japan, Satoshi Hasegawa, Nagoya Bunri University, Japan, Shinya Ishihara, Aichi University of Education, Japan & Shohei Matsunuma, Telecom Express Co. Ltd., Japan

#### Visibility of Graphical Character Mail of Multiple Languages in Mobile Phones

Satoshi Hasegawa, Nagoya Bunri University, Japan, Masaru Miyao & Masako Omori, Nagoya University, Japan & Shohei Matsunuma, Telecom Express Co. Ltd., Japan

#### Handy Window, an Interface for Intuitive Interaction of My Portable Information Terminal and the Other Ubiquitous Devices

Yu Shibuya, Nobuchika Taniguchi, Itaru Kuramoto & Yoshihiro Tsujino, Kyoto Institute of Technology, Japan

#### Action Models of Cellular Text Input and Evaluation Experiment

Masami Choui, Hiroshima International University, Japan

#### Japanese and Hangul Text Entry Time on Mobile Phone and Handwriting

Hiroshi Tamura, Hiroshima International University, Japan, & Sooja Choi, National Seoul Polytechnic University, Japan

#### Time and Error Analysis of Cellular Text Entry, Measured in Classes with Large Number

Hiroshi Tamura, Sayaka Ueniinai & Masami Choui, Hiroshima International University, Japan

#### Work Load Less for Cellular Text Entry than Handwriting: Evaluation by Memory Reproduction

Hiroshi Tamura, Hiroshima International University, Japan

OCSC

## Health Support Communities

### Tiberius 6

*Chairs: Helmut Krcmar & Jan Marco Leimeister, Technische Universitaet Muenchen, Germany*

#### What Do Patients Want from Online Health Support?

Diane Maloney-Krichmar, Bowie State University, USA & Jennifer Preece, University of Maryland, USA

#### Potentials and Benefits of Patient Communities from a German Perspective

Helmut Krcmar & Jan Marco Leimeister, Technische Universitaet Muenchen, Germany

#### Patient-Oriented Design of Online Support Communities

Jan Marco Leimeister & Helmut Krcmar, Technische Universitaet Muenchen, Germany

#### Internet Health Information Searching

Ronald Rice, University of California, Santa Barbara, USA

#### MEDQUAL: Improving Medical Web Search Over Time with Dynamic Credibility Heuristics

Mark Ginsburg, University of Arizona, USA

#### Social Learning within Online Support Communities:

##### The CHESS Experience

Jeffrey Witherly, National Cancer Institute, USA, Bret Shaw, University of Wisconsin-Madison, USA & Linda Harris, National Cancer Institute, USA

#### Role of Community Support in Coping with Chronic Diseases: A Case Study of Diabetes Support Group

Lena Mamykina, Siemens Corporate Research, Germany & Elizabeth Mynatt, Georgia Institute of Technology, USA

VR

## Multimodal Virtual Environments

### Majestium

*Chairs: Brian Goldiez, University of Central Florida, USA & R. Bowen Loftin, Texas A&M University at Galveston, USA*

#### Audio in VR: Beyond Entertainment Setups and Telephones

Derek Brock & James Ballas, Naval Research Laboratory, USA

#### Integrating Real and Virtual Objects in Virtual Environments

Mary Whitton, University of North Carolina at Chapel Hill, USA, Benjamin Lok, University of Florida, USA, Brent Insko, 3Dlabs, Inc., USA & Frederick Brooks, University of North Carolina at Chapel Hill, USA

#### Multi-Modal Virtual Environments— a Geoscience Perspective

Chris Harding, Iowa State University, USA

#### Interaction with Multimodal Environments in a Collaborative Setting

Glenn Martin, Jason Daly & Casey Thurston, University of Central Florida, USA

#### Defining an Audio Production Pipeline for Mixed Reality

Darin Hughes, University of Central Florida, USA

## VR Design and Manufacturing

### Regalium

*Chair: Randall Shumaker, University of Central Florida, USA*

#### The Design of Perceptual Representations for Practical Networked Multimodal Virtual Training Environments

Matthew Hutchins, Matt Adcock, Duncan Stevenson, Chris Gunn & Alex Krumpholz, CSIRO Australia, Australia

#### VR Annotations for Collaborative Design

Stephanie Aubry, Dominique Lenne, Indira Thouvenin & Anne Guenand, Universite de Technologie de Compiègne, France

#### Towards Structured Design of Mixed Reality Content

Christian Geiger, Hochschule Harz, Germany, Jorg Stocklein, University of Paderborn, Germany & Torsten Pflug, FH Furtwangen, Germany

#### Exemplar VE Design Guidance Tool for Selection and Manipulation Interaction Techniques

Arturo Garcia Jimenez, Jose Molina Masso & Pascual Gonzalez, University of Castilla-La Mancha, Spain

#### Hierarchical Timing Model for Interactive VR Storytelling

Chang Hoon Park, Koichi Hirota & Michitaka Hirose, The University of Tokyo, Japan & Heedong Ko, Korea Institute of Science and Technology, S. Korea

#### Sense of Presence: A Comparative Study of Presence in a Simulated Environment vs. Presence in the Real World

Max North, Sarah North, Roy George, Alonza Mumford & Lynn McKinnon, Clark Atlanta University, USA

# nical Sessions

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U&I

## Cross Cultural Design

### Naples

Chair: *Genevieve Bell*, Intel Corporation, USA

#### **Web Searching in Hungary and the U.S.: A Comparison of Science Major Undergraduate Students' Behavior**

Anita Komlodi & Tamas Gal, University of Maryland Baltimore County, USA

#### **An Approach to Elicit Context Sensitive Requirements for the Website Usability of Tour Operators**

Marc Huemmer, Dorothea Kretschmer & Britta Hofmann, Fraunhofer-FIT, Germany

#### **User-Designer HCI Research Model for Online Communities Groupz-ware**

Niki Lambropoulos, Intelligenesis Consultancy, United Kingdom

#### **Can Users Be Excluded from an Inclusive Design Process?**

Carlos Cardoso & P. John Clarkson, University of Cambridge, United Kingdom & Simeon Keates, IBM T.J. Watson Research Center, USA

#### **A Cross-Cultural Study on Attitudes Towards Robots**

Christoph Bartneck, Eindhoven University of Technology, The Netherlands, Tatsuya Nomura, Ryukoku University, Japan, Takayuki Kanda, ATR-IRC, Japan, Tomohiro Suzuki, Toyo University, Japan & Kennosuke Kato, Osaka University, Japan

#### **Towards Culture-Centred Design—A Metaphor in HCI**

Siu-Tsen Shen, National Formosa University of Science & Technology, Taiwan & Stephen Prior, Middlesex University, United Kingdom

EPCE

## Human Factors Integration for Military Applications

### Genoa

Chair: *Don Harris*, Cranfield University, United Kingdom

#### **Dynamic Online Support for Human Factors Integration Process**

Kerry Tatlock, Systems Engineering and Assessment Ltd., United Kingdom

#### **Synthetic Environments: A Method for Human Centred Design and Uninhabited Vehicle Research**

Melania Mock & Pamela Newman, Systems Engineering and Assessment Ltd., United Kingdom

#### **HFI for Future C4i in the RAF**

Rebecca Stewart, Cranfield University, United Kingdom, Paul Salmon, Brunel University, United Kingdom, Don Harris, Cranfield University, United Kingdom, Neville Stanton, Brunel University, United Kingdom, Kerry Tatlock & Melania Mock, Systems Engineering and Assessment Ltd., United Kingdom, Linda Wells, Aerosystems Ltd., United Kingdom & Chris Baber, The University of Birmingham, United Kingdom

#### **Developing a Task Analysis Toolset for Armed Forces Training**

Iain Macleod, Geoffrey Hone & Ian Whitworth, Cranfield University, United Kingdom

#### **Hierarchical Task Analysis**

Neville Stanton, Brunel University, United Kingdom

#### **Distributed Situation Awareness in Command and Control**

Neville Stanton, Brunel University, United Kingdom, Chris Baber, The University of Birmingham, United Kingdom, Rebecca Stewart & Don Harris, Cranfield University, United Kingdom, Robert Houghton & Richard McMaster, The University of Birmingham, United Kingdom, Paul Salmon, Brunel University, United Kingdom, Geoff Hoyle, Systems Engineering and Assessment Ltd., United Kingdom, Guy Walker & Mark Young, Brunel University, United Kingdom, Mark Linsell, Lockheed Martin, USA, Roy Dimot, MBDA Ltd., United Kingdom & Damian Green, Brunel University, United Kingdom

#### **A Linear Visual-Vestibular Physiological Model for the Prediction of Motion Sickness Incidence: Revised for Motion Detected by Peripheral Vision**

Panayiotis Matsagas, Hellenic Navy, Greece & Michael McCauley, Naval Postgraduate School, USA

# Parallel Tech

Tuesday, July 26, 2005 • Afternoon 1:30–3:30 pm

## AC

### Neuroergonomics— Cognitive Human Factors

#### Tiberius 7

*Chair: Raja Parasuraman, George Mason University, USA*

#### Neuroergonomics: An Overview of Research and Applications

Raja Parasuraman, George Mason University, USA

#### Neurophysiologic Measures for Neuroergonomics

Alan Gevins & Michael Smith, San Francisco Brain Research Institute & SAM Technology, USA

#### The Engineering of Motor Learning and Adaptive Control

Ferdinando Mussa-Ivaldi, Northwestern University, USA

#### Using Electrical Brain Potentials and Cerebral Oximetry to Detect G-Induced Loss of Consciousness

Lloyd Tripp & Glenn Wilson, Air Force Research Laboratory, USA

#### Molecular Genetics of Augmented Cognition

Raja Parasuraman & Pamela Greenwood, George Mason University, USA

#### Neuroergonomics Support from Bio- and Nano-Technologies

Rene de Pontbriand, U.S. Army Research Laboratory, USA

### Engineering Modular Augmented Cognition Systems

#### Tiberius 8

*Chair: Mark Austin, University of Maryland, USA*

#### Toward Platform Architectures for Modular Cognitive Cockpits

Mark Austin, University of Maryland, USA

#### Modular Design for Augmented Cognition Systems

Colby Raley, Strategic Analysis, USA & Latosha Marshall, University of Maryland, USA

#### Advanced Technology Support for a Future Capabilities-Based, Flexible, Adaptive Command and Control (CABPAC2) Process

B. Diane Barnette, U.S. Army Research Lab-HRED, USA

#### Modular Software for an Augmented Cognition System

Kenneth O'Neill, Boeing Phantom Works, USA

#### AMI: An Adaptive Multi-Agent Framework for Augmented Cognition

Matthew Johnson, Shriniwas Kulkarni, Anil Raj, Roger Carff & Jeffrey Bradshaw, Florida Institute for Human and Machine Cognition, USA

#### Human Error Modeling Architecture (HEMA)

Michael Fotta, D.N. American, Inc., USA, Michael Byrne, Rice University, USA & Michael Luther, Booz Allen Hamilton, USA

#### A Modular Architecture for Integrating Cognitive, Communicative, and Situated Behavior

Susann Luperfoy, Stottler Henke Associates, Inc., USA & Bradley Myers, Carnegie Mellon University, USA

## UAHCI

### Accessing Learning Resources in Mobile Scenarios

#### Claudius 2

*Chair: Birgit Bomsdorf, University of Hagen, Germany*

#### Navigation Design for Mobile Access to Knowledge-Transfer Platforms

Christian Stary & Andreas Auinger, University of Linz, Austria

#### How to Match Mobile Learning Resources with Learners Current Needs: The Didactic Profiling

Dominic Becking, Stefan Betermieux, Birgit Bomsdorf, Birgit Feldmann, Eberhard Heuel, Patrick Langer & Gunter Schlageter, University of Hagen, Germany

#### Towards Pervasive and Adaptive Learning Environments

Mikko Ahonen, Antti Syvanen & Teija Vainio, University of Tampere, Finland

#### Learning Pedagogy in the Field: Social Structures, Interactions, and Mobility

Eli Morken, Monica Divitini, Ove Haugalokken & Sobah Petersen, Norwegian University of Science & Technology, Norway

#### Interactive Logbook—A Personal, Mobile Learning Environment

Dan Corlett, Tony Chan, Jeffrey Ting, Oliver Westmancott & Mike Sharples, University of Birmingham, United Kingdom

### Language Technologies in the Scope of Universal Access

#### Claudius 3

*Chair: Eleni Efthimiou, Institute for Language & Speech Processing, Greece*

#### SUITEDasher—A Multilingual Keyboard and Mouse Interface for Motor-Impaired Users

David Lyle & Bill Manaris, College of Charleston, USA

#### A Tool for Enhancing Web Accessibility: Synthetic Speech and Content Restructuring

Spyros Raptis, Ilias Spais & Pirros Tsiakoulis, Institute for Language and Speech Processing, Greece

#### Grammar Development for Sign Language Avatar-Based Synthesis

Ian Marshall & Eva Safar, University of East Anglia, United Kingdom

#### Developing Techniques to Support Scripted Sign Language Performance by a Virtual Human

Ralph Elliott, John Glauert & J. Richard Kennaway, University of East Anglia, United Kingdom

#### Analysis of Facial Expressions in American Sign Language

Christian Vogler, Gallaudet University, USA & Siome Goldenstein, Universidade Estadual de Campinas, Brazil

#### American Sign Language Spatial Representations for an Accessible User-Interface

Matt Heunerfauth, University of Pennsylvania, USA

#### Effects of Display Size on Perception of Japanese Signed Language—Mobile Access in Signed Language

Takeaki Shionome, Kazuo Kamata & Hideo Yamamoto, Utsunomiya University, Japan & Susan Fischer, Rochester Institute of Technology, USA

#### Dynamic GSL Synthesis to Support Access to e-Content

Stavroula-Evita Fotinea & Eleni Efthimiou, Institute for Language and Speech Processing, Greece, Kostas Karpouzis & George Caridakis, National Technical University of Athens, Greece

Tuesday • 1:30–3:30 pm

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## HCI

### Speak Up and Be Heard: Speech in Human Computer Interfaces

#### Claudius 4

*Chair: Jill Hewitt, University of Hertfordshire, United Kingdom*

#### Designing and Delivering Accessible Multimodal Teaching Methods: The Development of Smirk Multimedia Presentation Software

Steve Bennett & David Kraithman, University of Hertfordshire, United Kingdom

#### SpeakView: Live Captioning of Lectures

Jill Hewitt, Caroline Lyon & Carol Britton, University of Hertfordshire, United Kingdom & Barry Mellor, Speechsoft Limited, United Kingdom

#### IMAGINE: Towards Universal Mobile Access to e-Services by Speech Interaction

Robert Dampier, University of Southampton, United Kingdom & Keith Gladstone, Deaf Education through Listening, United Kingdom

#### Experimentation on Spoken Format of Tables in Auditory User Interfaces

Dimitris Spiliotopoulos, Gerasimos Xydias & George Kouroupetroglou, University of Athens, Greece & Vasilios Argyropoulos, University of Thessaly, Greece

#### Using Automatic Speech Recognition to Assist

Mike Wald, University of Southampton, United Kingdom & Keith Bain, Saint Mary's University, Canada

### Sensory Interfaces

#### Claudius 1

*Chair: Anthony Savidis, FORTH-ICS, Greece*

#### Enabling Non-Verbal People with Quadriplegia to Interact through the Internet Using only Eye and Head Movement

Sharif Tai, James Gips & Philip DiMattia, Boston College, USA

#### An Application Framework for the Presentation of Tactile Documents

Helmut Jurgensen & Christopher Power, The University of Western Ontario, Canada

#### Gesture Keyboard—User Centered Design of a Unique Input Device for Indic Scripts

Ashish Krishna & Rahul Ajmera, Human Factors International, India, Sandesh Halarnkar & Prashant Pandit, HP Labs, India

#### Guidelines for Tactile Figures and Maps

Misa Grase Kwok, University of Yamanashi/Keio University, Japan & Tadahiko Fukuda, Keio University, Japan

#### The Development of a Sensory System for Intelligent Game Creatures

Dimitrios Grammenos, Anthony Savidis & Constantine Stephanidis, FORTH-ICS, Greece

### Non-Visual Access of Complex Document Components 1

#### Tiberius 1

*Chair: Enrico Pontelli, New Mexico State University, USA*

#### The ViewPlus IVEO Scalable Vector Graphics Technology for Universally Usable Complex Information

Vladmir Bulatov, Holly Stowell & John Gardner, ViewPlus Technologies, Inc., USA

#### Haptic Interaction with a Virtual Environment Dynamically Created from a Monoscopic Video

Konstantinos Moustakas, Aristotle University of Thessaloniki, Greece, Georgios Nikolakis & Dimitrios Tzovaras, Centre for Research & Technology Hellas, Greece & Michael Strintzis, Aristotle University of Thessaloniki, Greece

#### Haptic Representation of Images for the Blind and the Visually Impaired

Georgios Nikolakis, Centre for Research & Technology Hellas, Konstantinos Moustakas, Aristotle University of Thessaloniki, Greece, Dimitrios Tzovaras, Centre for Research & Technology Hellas, Greece & Michael Strintzis, Aristotle University of Thessaloniki, Greece

#### Multimodal Interaction with Mathematical Formulae: Access, Communication and Support for Blind People in Doing Mathematics

Bernhard Stoger, Johannes Kepler Universitat Linz, Austria, Klaus Miesenberger, Universitat Linz, Austria, Mario Batusic, Johannes Kepler University Linz, Austria & Dominique Archambault, Universite Pierre et Marie Curie, France

#### Dynamic Aural Browsing of MathML Documents via VoiceXML

Hemambar Reddy & Gopal Gupta, University of Texas at Dallas, USA & Arthur Karshmer, University of South Florida, USA

### Internet and Web

#### Tiberius 2

*Chair: Jonathan Lazar, Towson University, USA*

#### Users' Metaphoric Interaction with the Internet

Amy Hogan, University of Bath, United Kingdom

#### Effects of Navigational Structure on Consumer Responses in an Online Shopping Environment

Miguel Angel Gomez & Carlota Lorenzo, University of Castilla-La Mancha, Spain, Alejandro Molla, University of Valencia, Spain & Francisco Javier Garcia, University of Castilla-La Mancha, Spain

#### Hierarchical Classification of Web Search Results Using Personalized Ontologies

Amrish Singh & Keiichi Nakata, International University in Germany, Germany

#### Methods of Measuring Apparent Usability in Web Design

Maximilian Eibl, GESIS, Germany & Thomas Mandl, University of Hildesheim, Germany

#### The Impact of Different Cultures on E-Business Web Design—Comparison Research of Chinese (www.joyo.com) and American (www.amazon.com)

Xiaowei Yuan, Hui Liu, Shengyuan Xu & Yabo Wang, Beijing ISAR User Interface Design Co., Ltd., China

#### Improving Usability by Communicating Functional and Interaction Models through the User Interface

Jair Leite, Federal University of Rio Grande do Norte, Brazil

# Parallel Tech

Tuesday, July 26, 2005 • Afternoon 1:30–3:30 pm

HCI

## Robotics

### Tiberius 3

*Chair: Francois Sainfort, George Institute of Technology, USA*

#### **Extracting the Human's Friendly Relationships by Using Friendly Social Robot and RFID Tags**

Naoki Saiwaki, Nara Women's University, Japan, Takayuki Kanda, ATR-IRC, Japan & Hiroshi Ishiguro, Osaka University, Japan

#### **A Study on New Emotion Factor, Affective Relation, for Emotional Intelligence of a Sociable Robot in Human-Friendly Interaction Environment**

Young-Min Kim, Hyong-Euk Lee & Zeungnam Bien, KAIST, S. Korea

#### **Web-Based Multimodal Presentation by a Two-Legged Humanoid Robot**

Hiroshi Dohi & Mitsuru Ishizuka, University of Tokyo, Japan

#### **Robot Based System Programming Learning Support Environment**

Yosuke Nishino, Megumi Yoshida, Keigo Osumi, Yuki Tanaka, Keisuke Sugita & Eiichi Hayakawa, Takushoku University, Japan

#### **Etiquette Sensitive Service Robot**

Hyunsoo Lee & Yong Hwang, ICU, S. Korea & Manjai Lee, Digital Media Lab, ICU, S. Korea

#### **Labanotation for Remote Robot Control—Easy Input Technique for Operating Robot**

Isao Nishihara & Shizuo Nakano, Toyama Prefectural University, Japan

#### **Promises, Promises: Will Synthetic Humans be Persons or Property?**

Linda Glenn, University of Vermont, USA

## User-Centered Design 1

### Tiberius 4

*Chair: Ben-Tzion Karsh, University of Wisconsin-Madison, USA*

#### **Workflow Oriented Product Design**

Karsten Nebe, G-LAB/University of Paderborn, Germany & Thorsten Koopmann, Siemens, Germany

#### **Darwin and DaVinci: Rethinking Ecology and Design in HCI**

Catherine Forsman, Innoveo, USA

#### **Intercultural Aspects of Design and Interaction with Retrieval Systems**

Anett Kralisch, Humboldt University Berlin, Germany & Thomas Mandl, University of Hildesheim, Germany

#### **Accommodating Individual Differences in Usability Studies on Consumer Products**

Ali Berkman & Cigdem Erbug, Middle East Technical University, Turkey

#### **Cognitive Walkthrough with Users: An Alternative Dimension for Usability Methods**

Toni Granollers & Jesus Loris, University of Lleida, Spain

#### **Domain Ontology Driven Adaptation of Graphical Information**

Zdenek Mikovec & Josef Jelinek, Czech Technical University in Prague, Czech Republic, Pascal Guilcher, Ecole Polytechnique de l'Universite de Nantes, France & Pavel Slavik, Czech Technical University in Prague, Czech Republic

## Biometric Interfaces

### Tiberius 5

*Chair: Melody Moore, Georgia State University, USA*

#### **Biometric Identification using Song-Based Blink Patterns**

Tracy Westeyn, Peter Pesti, Kwang-Hyun Park & Thad Starner, Georgia Institute of Technology, USA

#### **Automatic Error Correction using P3 Response Verification for a Brain-Computer Interface**

Jessica Bayliss, Rochester Institute of Technology, USA & Sam Inverso, Liminal Devices, Ireland

#### **Controllability of Galvanic Skin Response**

Adriane Randolph, Luke McCampbell & Melody Moore, Georgia State University, USA & Steven Mason, Neil Squire Society, Canada

#### **Temporal Control Paradigms for Direct Brain Interfaces—Rethinking the Definition of Asynchronous and Synchronous**

Steven Mason & Gary Birch, Neil Squire Society, Canada

#### **Towards Two-Dimensional Cursor Control Using Electroencephalographic Signals**

Gerwin Schalk, Wadsworth Center, New York State Department of Health, USA, Eric Leuthardt, Baines Hospital and Washington University, USA, Daniel Moran, K.J. Miller & Jeffrey Ojemann, Washington University, USA & Jonathan Wolpaw, Wadsworth Center, New York State Department of Health, USA

## Software Design & Usability

### Tiberius 6

*Chair: Richard Koubek, The Pennsylvania State University, USA*

#### **DHCI: An HCI Framework in Distributed Environment**

Li Xizhi, Zhejiang University, China

#### **Process Interfaces: A Practice-Oriented Approach Toward Integrating Usability and Software Engineering**

Michael Plichta, Karin Schmidt & Heike Frank, DaimlerChrysler AG, Germany

#### **From Personas to Design: Creating a Collaborative Multi-Disciplinary Design Environment**

Ali Ndiwalana, Jason Chong Lee, Jaime Smith, Shahtab Wahid, Laurian Hobby, Christa Chewar, & D. Scott McCrickard, Virginia Polytechnic Institute & State University, USA

#### **Guiding the Process of Requirements Elicitation with a Semiotic Approach—A Case Study**

Maria Ceceilia Calani Balanauskas, Juliano Schimiguel, Carlos Alberto Coccozza Simoni & Claudia Bauzer Medeiros, State University of Campinas, Brazil

#### **Simulation, Visualization, and Evaluation: The Best Triad for Successful Software Design**

Iwona Jastrzebska-Fraczek, Technische Universitat Munchen, Germany

#### **Software Engineering for Cognitive Modeling: Visualization of Production Systems**

Sandro Leuchter, Ljudmila Nekrasova & Leon Urbas, Berlin University of Technology, Germany

#### **CSUM: A New Scale of Assessing Usability of Consumer Software**

Zhang Guangqiang, Zheng Jinya, Yang Wanli Winnie, Li Yan & Gao Jianzhong, User Research Center of Legend Corporate R&D, China



# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## E&H

### Knowledge Work Ambience— Solutions for Better Quality and Performance

#### Palermo

Chair: *Peter Kern, Fraunhofer-IAO, Germany*

#### Office Performance Loop— An Integrated Approach to Create Office Performance

Peter Kern & Gerhard Hube,  
Fraunhofer-IAO, Germany

#### Learning from the Scandinavians Way of Working

Arne Hoggren, Consultant, Sweden

#### C.L.E.A.R.—A New Model to Describe and Measure Information Work

Susan Conway, Microsoft Corporation,  
USA

#### Sun Microsystems Workforce Solutions Initiative iWork at Sun

Eric Richert & David Rush, Sun  
Microsystems, USA

#### Concepts for Effectively Creating and Communicating Knowledge

Steven Bashford & Jorg Steiss, Mindjet  
GmbH, Germany

#### Innovative Workplace Design: Requirements for High Performance Office Equipment

Jorg Bakschas, Haworth GmbH,  
Germany

## HIMI

### Embodied Interaction and Communication

#### Turin

Chairs: *Tomio Watanabe, Okayama Prefectural University, Japan & Shigeo Morishima, Waseda University, Japan*

#### Producing Intentionality in Eye-Contact Robot

Akira Ito & Kazunori Terada, Gifu  
University, Japan

#### Humanoid Robotic User Interface in Entertainment Computing

Dairoku Sekiguchi, The University of  
Tokyo, Japan, Masahiko Inami, The  
University of Electro-Communications,  
Japan, Naoki Kawakami & Susumu  
Tachi, The University of Tokyo, Japan

#### Co-Existing Communication: Embodied Interaction System Using an Integrated Expression of Remote Partner's Shadow and Video Image

Chikara Ishibiki, Daisuke Matsumoto,  
Takabumi Watanabe, Yoshiaki  
Nakajima & Yoshiyuki Miwa, Waseda  
University, Japan

#### Hierarchical Control System of Musical Performance and Design of Musical Interaction System

Tomohito Yamamoto, Kanazawa  
Institute of Technology, Japan &  
Yoshihiro Miyake, Tokyo Institute of  
Technology, Japan

#### Interactive Cuing with the Walk-Mate to Improve Stability

#### and Variety of Gait Dynamics

Takeshi Muto & Barbara Herzberger,  
Ludwig-Maximilians-Universitat  
Munchen, Germany, Yohei Kobayashi,  
Tokyo Institute of Technology, Japan,  
Yumiko Muto, Tina Globocnik, Joachim  
Hermisdorfer & Ernst Poppel, Ludwig-  
Maximilians-Universitat Munchen,  
Germany & Yoshihiro Miyake, Tokyo  
Institute of Technology, Japan

#### Face and Gesture Cloning for Life-Like Agent

Shigeo Morishima, Waseda University,  
Japan

#### An Embodied Entrainment System with Inter Actors Superimposed on Images

Tomio Watanabe & Michiya Yamamoto,  
Okayama Prefectural University, Japan

### Collaborative and Participative Processes

#### Trevi

Chair: *Fiona Fui-Hoon Nah, University  
of Nebraska-Lincoln, USA*

#### A Survey of Human Oriented Research in Collaborative Design

Henry Jian Ma, Henry Been-Lirn Duh  
& Vivian Hsueh-Hua Chen, Nanyang  
Technological University, Singapore

#### Collaborative Teamwork with Unmanned Ground Vehicles in Military Missions

Sherri Rehfeld, Florian Jentsch, Michael  
Curtis & Thomas Fincannon, University  
of Central Florida, USA

#### Collaborative Work Integration Method in Complex Naval Systems Design: An Example, Military Bridge, IBEO

Martine Pellen-Blin & Alain Bry, CTSN,  
France

#### Collaborative System for Helping to Software Development Team

Juan Ramon Perez-Perez, Ma. Del  
Puerto Paule-Ruiz & Martin Gonzalez-  
Rodriguez, University of Oveido, Spain

#### Group-Centered Personalization Technologies for Facilitating Organizational Learning

Timo Saari, Jari Laarni & Niklas Ravaja,  
Helsinki School of Economics, &  
Marko Turpeinen, Helsinki Institute for  
Information Technology, Finland

#### Pair Writing: Towards Agile Participatory Design

Adi Tedjasaputra & Eunice Ratna Sari,  
TRANSLATE-EASY, Indonesia

## HIMI

### Case Studies of Human Factors R&D in the Far East

#### Verona

*Chair: Kee Yong Lim, Nanyang Technological University, Singapore*

#### Structure Processing in Menu Navigation: An Experimental Validation of a New Model of Human Information Processing

Peter Patsula, Benjamin Detenber & Yin Leng Theng, Nanyang Technological University, Singapore

#### A Critique of Claims Analysis as a Usability Evaluation Aid

Yin Leng Theng, Nanyang Technological University, Singapore

#### Towards the Development of a Low Cost Simulator for Night Vision Goggle Training

Keeyong Lim, Chai Wah Koh & Roy Siew Ming Quek, Nanyang Technological University, Singapore

#### Fatigue Estimation of Locomotive Drivers Working at Night

Peter Zhi-Qiang Luo, Nanyang Technological University, Singapore, Bei-Yuan Guo, Weining Fang & Wu-Qiang Yu, Beijing Jiaotong University, China & Henry Been-Lirn Duh, Nanyang Technological University, Singapore

#### Communication Requirements for Effective Team Performance

Ketut Sulistyawati, Yoon Ping Chui & Kee Yong Lim, Nanyang Technological University, Singapore

## OCSC

### Creativity and Innovation

#### Pisa

*Chairs: Mari Ann Moss, The University of Waikato, New Zealand & Patrick Kunz, Ectus Ltd., New Zealand*

#### Social Creativity: Making All Voices Heard

Gerhard Fischer, University of Colorado, L3D, USA

#### Reading and Writing Collaborative Creative Presence

Brigid Costello, University of New South Wales, Australia, Alastair Weakley & Ernest Edmonds, University of Technology, Sydney, Australia

#### An Innovative Approach to Build Communities Around Streaming Video

Patrick Kunz, Ectus Ltd., New Zealand

#### Adolescent Collaborative Discourse Through Messaging

Kenneth Lim, Nanyang Technological University, Singapore

#### Interactive Narrative Tools to Generate Insight within a Collaborative Work Team

Martin Siegel, Indiana University, USA

## VR

### VR and Mental Health Applications

#### Regalium

*Chairs: Brenda K. Wiederhold, Interactive Media Institute, USA & Albert (Skip) Rizzo, University of Southern California, USA*

#### A Virtual Reality Scenario for All Seasons: The Virtual Classroom

Albert (Skip) Rizzo, University of Southern California, USA, Dean Klimchuk & Roman Mitura, Digital Media Works, Canada, Todd Bowerly & J. Galen Buckwalter, University of Southern California, USA, Kim Kerns & Katherine Randall, University of Victoria, USA, Rebecca Adams & Paul Finn, Saint Anselm College, USA, Ioannis Tarnanas Aristotle University of Thessaloniki, Greece, Cristian Sirbu & Thomas Ollendick, Virginia Polytechnic Institute, USA & Shih-Ching Yeh, University of Southern California, USA

#### Applying a Model for Virtual Reality Intervention to Stroke Rehabilitation

Rachel Kizony, Noomi Katz, Debbie Rand, Naomi Josman & Patrice Weiss, University of Haifa, Israel

#### Virtual Reality Applications in Addictions Treatment and Research

Patrick Bordnick, University of Georgia, USA & Ken Graap, Emory University & Virtually Better, Inc., USA

#### Using Virtual Reality as a Distraction to Mitigate Chemotherapy Symptoms

Susan Schneider, Duke University, USA

#### Virtual Reality Exposure for Phobias, Panic Disorder, and Posttraumatic Stress Disorder: A Brief Sampling of the Literature

Brenda Wiederhold, Interactive Media Institute, USA & Alex Bullinger, COAT-Basel, Switzerland

#### “Virtual Driving” versus “Real Driving”—Pros and Cons of Using a VR Driving Simulator in Rehabilitation

Maria Schultheis, Kessler Rehabilitation Research, USA

#### Virtual Reality Analgesia

Hunter Hoffman, Trevor Van Oostrom, Todd Richards, Azucena Garcia-Palacios, Mark Jensen, Sam Sharar & David Patterson, University of Washington, USA

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

EPCE

## Collaborative Virtual Environments

### Majestium

*Chairs: David Kaber, North Carolina State University, USA & Jennifer Riley, SA Technologies, USA*

#### Performance Measurement and Training Feedback in a Military Collaborative Virtual Environment

Donald Lampton, Army Research Institute for the Social and Behavioral Sciences, USA, James Bliss, Old Dominion University, USA & Glenn Martin, University of Central Florida, USA

#### The Shared Imagination: Creative Collaboration in Augmented Virtuality

Charles Hughes & Christopher Stapleton, University of Central Florida, USA

#### Collaborative Virtual Environments for Science, Education and Control of Planetary Exploration Rovers

Geb Thomas, The University of Iowa, USA, Peter Coppin, Carnegie Mellon University, USA, Nathalie Cabrol, NASA Ames Research Center, USA, David Wettergreen, Carnegie Mellon University, USA, Erin Pudenz, The University of Iowa, USA & Justin Glasgow, Carnegie Mellon University, USA

#### Interaction Between Users of Immersion Projection Technology Systems

Anthony Steed, University College London, United Kingdom, David Roberts, University of Salford, United Kingdom & Ralph Schroeder, University of Oxford, United Kingdom

#### Some New Virtual Environment Training Applications for Dangerous Duty

Mark Scerbo, Old Dominion University, USA

#### Information Sharing by Using Monocular See-Through Head-Mounted Displays for Cooperative Work in Air Traffic Control Systems

Miwa Nakanishi & Yasaku Okada, Keio University, Japan

## Human Performance in Safety-Critical Systems

### Genoa

*Chair: Dirk Schaefer, EUROCONTROL Experimental Centre, France*

#### A Cognitive Engineering Approach to Modelling Airspace Complexity

Brian Hilburn, Center for Human Performance Research, The Netherlands

#### Does the Aviation Radiotelephone "One Hundred" versus the "One-Zero-Zero" Phraseology Influence the Communication Mishap Likelihood? Some Initial Results

Piet Hoogetboom & Rolf Zon, Naval Aerospace Lab, The Netherlands & Dirk Schaefer, EUROCONTROL Experimental Centre, France

#### Towards an Improved Experimental Methodology for Simulator Studies in Complex Operating Environments

Gyrd Skraaning Jr., OECD Halden Reactor Project, Norway

#### Pilot Evaluation of ASAS Spacing Applications Under Non-Nominal Conditions

Dirk Schaefer, EUROCONTROL Experimental Centre, France, Claudia Fusai & Petra Scrivani, Deep Blue, Italy & Robin Waggitt, Think Research, United Kingdom

#### Monotony and Related Concepts in ATC: A Framework and Supporting Experimental Evidence

Sonja Straussberger, EUROCONTROL Experimental Centre, France, K. Wolfgang Kallus, University of Graz, Austria & Dirk Schaefer, EUROCONTROL Experimental Centre, France

#### Pathogens in the Cheese: Revisiting the Organizational Model of Transport Safety Investigations

Mark Young, Brunel University, United Kingdom, Steven Shorrock & John Faulkner, University of New South Wales, Australia & Graham Braithwaite, Cranfield University, United Kingdom

#### User Support Design to Enhance Motivation for Troubleshooting

Momoko Nakatani, Masaru Miyamoto & Shunichi Yonemura, NTT Cyber Solutions Laboratories, Japan

# Parallel Tech

Tuesday, July 26, 2005 • Afternoon 4–6 pm

AC

## Wireless, Wearable & Rugged Sensors for Operational Environments

### Tiberius 7

*Chair: James Sampson, U.S. Army Natick Soldier Center, USA*

#### **Wearable Cognitive Monitors for Dismounted Warriors**

James Sampson, U.S. Army Natick Soldier Center, USA

#### **Enhancing Warfighter Readiness Through Physiologic Situational Awareness—The Warfighter Physiological Status Monitoring—Initial Capability**

Mark Buller, Reed Hoyt, John Ames, William Latzka & Beau Freund, U.S. Army Research Institute of Environmental Medicine, USA

#### **Artifact Differences in Seated vs. Mobile EEG Recordings Made During Simulated Military Operations in Urban Terrain (MOUT)**

Donald DuRousseau, Human Bionics LLC, USA

#### **Developing an Augmented Cognition Sensor for the Operational Environment: The Wearable Arousal Meter**

Eric Muth & Adam Hoover, Clemson University, USA & Marty Loughry, UFI Corporation, USA

#### **Challenges for Honeywell's Mobile Augmented Cognition Ensemble**

Natalia Mazaeva, James Carciofini, Jeff Rye, Trent Reusser & Stephen Whitlow, Honeywell Laboratories, USA

#### **Scheduling Communications with an Adaptive System Driven by Real-Time Assessment of Cognitive State**

Stephen Whitlow & Patricia Ververs, Honeywell Laboratories, USA, Ben Buchwald & Jason Pratt, Carnegie Mellon University, USA

#### **A Low-Cost, "Wireless," Portable, Physiological Monitoring System to Collect Physiological Measures During Operational Team Tasks**

Roy Stripling, U.S. Naval Research Laboratory, USA, William Becker, U.S. Naval Postgraduate School & Joseph Cohn, U.S. Naval Research Laboratory, USA

## Affective Computing

### Tiberius 8

*Chair: Eva Hudlicka, Psychometrix Associates Inc., USA*

#### **Affect Sensing and Recognition: State-of-the-Art Overview**

Eva Hudlicka, Psychometrix Associates, Inc., USA

#### **Voices of Attraction**

Anmol Madan, Ron Caneel & Alex Pentland, The MIT Laboratory, USA

#### **Developing Computer Agents with Personalities**

Sasanka Prabhala & Jennie Gallimore, Wright State University, USA

#### **Results from a Field Study: The Need for an Emotional Relationship Between the Elderly and their Assistive Technologies**

Peggy Wu & Christopher Miller, Smart Info Flow Technologies LLC, USA

#### **Evaluation of Affective Computing Systems from a Dimensional Metaethical Position**

Carson Reynolds & Rosalind Picard, The MIT Laboratory, USA

#### **Use of a Dynamic Personality Filter in Discrete Event Simulation of Human Behavior Under Stress and Fatigue**

Mamadous Seck, Claudia Frydman & Norbert Giambiasi, Universite Paul Cezanne-Aix Marseille, France, Tuncer Oren, University of Ottawa, Canada & Levent Hillmaz, Auburn University, USA

#### **User Experience Based Adaptation of Information in Mobile Contexts for Mobile Messaging**

Timo Saari, Helsinki School of Economics, Finland, Marko Turpeinen, Helsinki Institute for Information Technology, Finland, Jari Laarni & Niklas Rvaja, Helsinki School of Economics, Finland

UAHCI

## Advances in New Learning

### Claudius 2

*Chair: Konrad Morgan, University of Bergen, Norway*

#### **Cultural Considerations in Interactive System Design**

Konrad Morgan & Madeleine Morgan, University of Bergen, Norway

#### **Experimental Designs in Evaluating New Learning Paradigms**

Thomas Koehler, Universitat Potsdam, Germany

#### **The Importance of Intrinsic Motivation in Usability Testing**

Olga Smyslova, Moscow City University of Psychology & Education, Russia & Alexander Voiskounsky, Moscow State University, Russia

#### **e-Learning: Who is Leading Whom, and Where Might the Road be Going?**

Sarah Nicholson, Hamish MacLeod & Jeff Haywood, University of Edinburgh, United Kingdom

#### **Causal Maps, Mental Models and Assessing Acquisition of Expertise**

J. Michael Spector, Florida State University, USA

Tuesday • 4–6 pm

# nical Sessions

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## Methods & Technologies for Personalized and Adaptive Web Interaction

### Claudius 3

*Chairs: John Garofalakis, University of Patras, Greece & Spiros Sirmakessis, Computer Technology Institute, Greece*

#### Representing User Information Context with Ontologies

Ahu Sieg, Bamshad Mobasher, Robin Burke, Ganesh Prabu & Steve Lytinen, DePaul University, USA

#### A Web Clipping Service's Information Extraction Mechanism

Christos Bouras, Giorgos Kounenis, Ioannis Misedakis & Vassilis Pouloupoulos, Computer Technology Institute, Greece

#### Usage-Driven Evolution of Personal Ontologies

Peter Haase & York Sure, University of Karlsruhe, Germany, Andreas Hotho, University of Kassel, Germany, & Lars Schmidt-Thieme, University of Freiburg, Germany

#### Evaluating a System for Enhanced Access to Statistical Data on the Web: The StatSearch Evaluation Experiments

Ing-Mari Boynton, Bert Fridlund, Alf Fyhrlund, Peter Lundquist & Bo Sundgren, Statistics Sweden (SCB), Sweden, Martin Rajman & Martin Vesely, Ecole Polytechnique Federale de Lausanne, Switzerland, Helge Thelander & Martin Wanerskar,

Statistics Sweden (SCB), Sweden

#### Real-Time Navigation Recommendations: Integrating N-Gram Based Pattern Extraction and Site Content

Diamanto Oikonomopoulou, National Technical University of Athens, Greece, Maria Rigou & Spiros Sirmakessis, Computer Technology Institute, Greece

#### Personalized Learning in Web-Based Intelligent Educational Systems: Technologies and Techniques

Ioannis Hatzilygeroudis, Jim Prentzas & John Garofalakis, University of Patras, Greece

#### A Methodology for Evaluating the Personalization Conceptual Schema of a Web Application

Evangelos Sakkopoulos, Spiros Sirmakessis, Athanasios Tsakalidis & Ioannis Tzimas, Computer Technology Institute, Greece

## Towards an Information Society for All

### Claudius 1

*Chair: Constantine Stephanidis, FORTH-ICS, Greece*

#### IT for People with Cognitive Disabilities

Claes Tjader, Swedish Handicap Institute, Sweden

#### Optimizing Predictive Text Entry for Short Message Service on Mobile Phones

Yijue How & Min-Yen Kan, National University of Singapore, Singapore

#### An Investigation into the Accessibility of Web-Based Information for People with Dementia

Nada Savitch & Panayiotis Zaphiris, Centre for HCI Design, City University, United Kingdom

#### Abstract UIs as a Long-Term Solution for Non-Visual Access to GUIs

Kris Van Hees & Jan Engelen, Katholieke Universiteit Leuven, Belgium

#### IKnowU: A Framework to Generate Multiple Abstract User Interfaces

Kenia Sousa, Elizabeth Furtado & Vasco Furtado, University of Fortaleza, Brazil

#### The Effect of Cultural Differences on the Efficiency of Searches on a University Website

Theo McDonald & Pieter Bignaut, University of the Free State, S. Africa

## Universal Design for Specific Situations

### Claudius 4

*Chair: Margherita Antona, FORTH-ICS, Greece*

#### Let's Vote: A Multimodal Electronic Voting System

Ernest Vincent Cross II & Juan Gilbert, Auburn University, USA

#### Pointing Gesture-Based Interaction for Museum Exhibits

Cornelius Malerczyk, Patrick Daehne & Michael Schneider, ZGDV Computer Graphics Center, Germany

#### Comparing Three Different Text Representations for Students with Autism

Ming Chung Chen & Ya Hui Tsai, National Chiayi University, Taiwan & Ting Fang Wu, Chang Chung University, Taiwan

#### AudioMath—Towards Automatic Readings of Mathematical Expressions

Helder Ferreira & Diamantino Freitas, Universidade do Porto, Portugal

#### Multimedia and Languages for Children: Semiosis for Universal Access

Francisco Cipolla Ficarra, F&F Multimedia Communic@tions Corporation and Università degli Studi di Bergamo, Italy

#### Humanics 2: Human Computer Interaction in Acquired Brain Injury Rehabilitation

Anthony Lewis-Brooks, Aalborg University Esbjerg, Denmark & Eva Petersson, Halmstad University, Sweden

#### Design of Enhanced Automatic Teller Machine Interface to Suit the Needs of Older Adults

Alex Wong & Chetwyn Chan, The Hong Kong Polytechnic University, Hong Kong, Tatis Lee, The University of Hong Kong, Hong Kong & Iris Chi, University of Southern California, USA

## HCI

### Non-Visual Access of Complex Document Components 2

#### Tiberius 1

*Chair: Enrico Pontelli, New Mexico State University, USA*

#### **DAWN: Dynamic Aural Web Navigation**

Gopal Gupta, Sriram Sunder Raman, Michael Nichols, Hemambaradara Reddy & Narayan Annamalai, University of Texas at Dallas, USA

#### **An Experimental Approach in Recognizing Synthesized Auditory Components in a Non-Visual Interaction with Documents**

Gerasimos Xydias, University of Athens, Greece, Vasilios Argyropoulos, University of Tessaly, Greece, Theodora Karakosta & Georgios Kouroupetroglou, University of Athens, Greece

#### **The Universal Maths Conversion Library: An Attempt to Build an Open Software Library to Convert Mathematical Contents in Various Formats**

Dominique Archambaut, Universite Pierre et Marie Curie, France, Mario Batusic, Johannes Kepler Universitat Linz, Austria, Federic Berger, Universite Pierre et Marie Curie, France, Donald Fitzpatrick, Dublin City University, Ireland, Klaus Miesenberger, Universitat Linz, Austria, Victor Moco, Universite Pierre et Marie Curie, France & Bernhard Stoger, Johannes Kepler Universitat Linz, Austria

#### **Towards Automated Web Pages Structure Discover: A Progress Report**

Enrico Pontelli, New Mexico State University, USA

#### **Supporting the User's Design of Alternative Complex Notations**

Silas Brown & Peter Robinson, University of Cambridge, United Kingdom

### Service Engineering, Business & Decision Making

#### Tiberius 2

*Chair: Klaus-Peter Fahnrich, University of Leipzig, Germany*

#### **Optimum Product Color Combination Using the FAHP Approach Combined with the Image Compositing Technique**

Fong-Gong Wu, National Cheng Kung University, Taiwan, Chieh-Ying Chen & Ying-Jye Lee, Fortune Institute of Technology, Taiwan

#### **The Project ServCASE—Software-Service-Codesign for IT-Enabled Services**

Klaus-Peter Fahnrich, University of Leipzig, Germany

#### **Multi-Channel and Multi-Modal Interactions in E-Marketing: Toward a Generic Architecture for Integration and Experimentation**

Vincent Chevrin, Jose Rouillard, & Alain Derycke, Université des Sciences et Technologies de Lille, France

#### **IT-Based Services in Postal Logistics**

Roland Laqua & Stephan Pulm, GSM Software Management GmbH, Germany & Jorgen Rothboeck, Deutsche Post AG, Germany

#### **Impact of User Centered Design Approach on the Marketing Department**

Natalie Woletz, University of Paderborn, Germany, Susanne Laumann & Thorsten Koopmann, Siemens AG, Germany

#### **Service Engineering for IT Enabled Service Products**

Christian van Husen, Thomas Meiren & Thomas Schlegel, Fraunhofer-IAO, Germany

#### **A Comparison of Diagram and Text Query**

Todd Barlow, SAS Institute Inc., USA & Frederick Volk, SAS Institute Inc. and Georgetown University, USA

### Audio/Visual Interaction and the Digital Arts

#### Tiberius 3

*Chair: Ernest Edmonds, University of Technology, Sydney, Australia*

#### **A Simulated Natural System for Electronic Art**

Andrew Martin, University of Technology Sydney, Australia

#### **One Dimensional Cellular Automata Musical Experiments with Max**

Dave Burraston, Creativity and Cognition Studios, Australia

#### **Visual Programming in Support of Creative Collaboration**

Andrew Johnston & Alastair Weakley, University of Technology Sydney, Australia

### User Interface Design—Searching & Learning

#### Tiberius 4

*Chair: Pei-Luen Patrick Rau, Tsinghua University, China*

#### **WebQuest: A Configurable Web Tool to Prospect the User Profile and User Subjective Satisfaction**

Jose De Queiroz & Rodrigo de Oliveira, Universidade Federal de Campina Grande, Brazil & Maria Turnell, LIHM-DEE-UFCG, Brazil

#### **An Evaluation of an Online Collaborative Course**

Aydin Oztoprak & Cigdem Erbug, Middle East Technical University, Turkey

#### **Development of a Web-Based Interactive Self-Help Troubleshooting Tool for Print Quality Problems**

Chul Woo Kim, Pilsung Choe, Mark Lehto & Jan Allebach, Purdue University, USA

#### **Comparing Two Multi-Criteria Decision Making Theories for the Design of Web-Based Individualised Assistance**

Katerina Kabassi & Maria Virvou, University of Piraeus, Greece

#### **The Development of a Concept Association Network Based Keyword Expansion Mechanism for Internet Environment**

Kuo-Hao Tang, Feng Chia University, Taiwan

#### **Energy Browser: Walking in the World Wide Web**

Satoshi Nakamura & Mitsuru Minakuchi, National Institute of Information and Communications Technology, Japan & Katsumi Tanaka, Kyoto University, Japan

#### **Digital Museums: A Multi-Technological Approach**

Jose Antonio Gallud, Victor Penichet, L. Argandona, P. Gonzalez & J.A. Garcia, Universidad de Castilla-La Mancha, Spain

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## Input Device Design & Usability

### Tiberius 5

Chair: *Peter Kern, Fraunhofer IAO, Germany*

#### Reconfigurable Keyboard for Gesture Control

Nicolette Adamo-Villani, Purdue University, USA & Gerardo Beni, University of California, Riverside, USA

#### Experimental Evaluation of the Fullscreen Keyboard

Bruno Merlin, IRIT DIAMANT and INTUILAB, France

#### Multi-Modal Messaging Services: Design Factors of Text-Based Communication via Mobile Phone

Hokyoung Ryu, Massey University Auckland, New Zealand

#### Testing Predictive Text Entry Methods with Constrained Keypad Designs

Jun Gong & Peter Tarasewich, Northeastern University, USA

#### Designing a Novel Input Method for Asynchronous Forum on Pocket PCs

Chih-Kai Chang & Wen-Yuan Wu, Da-Yeh University, Taiwan

#### A New Stylus-Based Method for Text Entry on Small Devices

Bryan Haggerty & Peter Tarasewich, Northeastern University, USA

#### The Complexity of Navigation Keys in Cellular Phones and Their Effects on Performance of Teenagers and Older Adult Phone Users

Martina Ziefle & Susanne Bay, RWTH Aachen University, Germany

## User-Centered Design 2

### Tiberius 6

Chair: *Jon Gunderson, University of Illinois at Urbana-Champaign, USA*

#### Psychophysical Comparison of Five Mouse Designs

Deborah Scarlett, Wichita State University, USA, Lilian Io, Intel, USA, Michael Bohan, Motorola, USA, Alex Chaparro & Michael Jorgensen, Wichita State University, USA

#### User Satisfaction with Five New Cell Phone Features

Chen Ling & Wonil Hwang, Purdue University, USA

#### Designing and Implementing a Gesture Mouse

Ed Lawson, D. Harmony & Zoran Duric, George Mason University, USA

#### A Development of Embarrassment Detection Method Using Eye Movements Data

Noriyuki Aoyama, Keio University, Japan, Yasunori Tanaka & Masashi Nakamura, Densan System Co. Ltd., Japan & Tadahiko Fukuda, Keio University, Japan

#### Modeling Users' Guesswork and Designing for its Success

Wan Chui, Neung Kang & Hwan-Soo Park, KAIST, S. Korea

#### The Cognitive and Behavioral Differences of Developing Design Concept in Traditional Versus Digital Media

Wen-Dih Yeh, Jiunn-Shing Wang, Tzyy-Huei Jan & Yin-Ting Tzeng, Tatung University, Taiwan

#### Proposal for Design Method Considering User Experience

Kazuhiko Yamazaki, IBM Japan/The University of Tokyo, Japan & Kazuo Furuta, The University of Tokyo, Japan

## E&H

## Methods of Work Environment Analysis

### Palermo

Chair: *Leszek Pacholski, Poznan University of Technology, Poland*

#### Computer-Aided Systems for Procedures of Ergonomic Assessment of Industrial Work Environments

Maciej Bayda, Wieslaw Grzybowski & Leszek Pacholski, Poznan University of Technology, Poland

#### Ergonomic Modeling of Work Environment in the Mechanical Engineering Enterprise with Using of the Hypermedia Techniques

Grzegorz Dahlke & Aleksandra Jasiak, Poznan University of Technology, Poland

#### Work Risk Evaluation by Psychosomatic Load Symptoms

Malgorzata Wejman & Leszek Pacholski, Poznan University of Technology, Poland

#### Expert Systems in the Occupational Risk Management at the Workplace

Adam Gorny & Aleksandra Jasiak, Poznan University of Technology, Poland

#### Design of a Command Centre in a Police Station Equipped with Visual Monitoring

Aleksandra Jasiak, Poznan University of Technology, Poland

#### The Dynamical Factor of a Designing Dialogue between Operators and Systems of Industrial Process Diagnostics

Malgorzata Slawinska & Leszek Pacholski, Poznan University of Technology, Poland

#### Computer Aiding of Heuristic's Processes of "Algorithm of Invention Problems Solution"

Marcin Kiliszewski & Edwin Tytyk, Poznan University of Technology, Poland

## HIMI

## Information Life-Cycle in Collaborative Business Activities

### Turin

Chair: *Hiroshi Tsuji, Osaka Prefecture University, Japan*

#### Analysis of Annotations on Documents for Recycling Information in Collaborative Business Activities

Koichi Kise, Nobuyuki Kondo, Tomohiro Nakai & Keinosuke Matsumoto, Osaka Prefecture University, Japan

#### The Role of Web Services in Collaborative Business Activities

Keinosuke Matsumoto, Tomoaki Maruo, Naoki Mori & Koichi Kise, Osaka Prefecture University, Japan

#### Method of Utilizing the Valuable Knowledge of a Company—Integration of Information Lifecycle Management and Knowledge Management

Gaku Ishii & Yasuko Nakayama, Toshiba Corporation, Japan

#### Simulation Model of P2P Information Distribution Based on Collaborative Filtering

Hidehiko Okada, Kyoto Sangyo University, Japan

#### DirectShare: Information Sharing System using P2P

Yosuke Senta, Shinichi Sazawa & Yuichi Sato, Fujitsu Laboratories Ltd., Japan

#### Decision Support System for Recalling Defective Products

Nobuyuki Ota, Yuichi Kobayashi & Yoji Taniguchi, Hitachi Ltd., Japan

#### Development of the Design Support System for Collaborative Learning Activity

Haruhiko Nishiyama & Akihiko Koga, Hitachi Ltd., Japan

# Parallel Tech

Tuesday, July 26, 2005 • Afternoon 4–6 pm

## HIMI

### Delivering Health Care Through Interactive Computer Technology

Verona

Chair: *Josette Jones, Indiana University-Purdue University, USA*

#### Quit for Life: An Interactive Computer Program Promoting Smoking Cessation in Low Income Rural Communities

Renee Stratton, Anna McDaniel & Norman Legge, Indiana University, USA

#### Designing a PDA Interface for Dialysis Patients to Monitor Diet in Their Everyday Life

Kay Connelly, Yvonne Rogers & Katie Siek, Indiana University, USA, Josette Jones, Michael Kraus, Susan Perkins, Laurie Trevino & Janet Welch, Indiana University-Purdue University Indianapolis, USA

#### Applying Usability Techniques to Develop a Surgical IntensiveCare Unit Log for General Surgery Residents

Eugene Leung & Nancy Staggers, University of Utah, USA

#### Exploring the Impact of Information Visualization on Medical Information Seeking Using the Web

Ketan Mane, Indiana University Bloomington, USA & Javed Mostafa, Indiana University, USA

#### Modeling Nurse Computer Interactions

Gregory Alexander & Marilyn Rantz, University of Missouri, Columbia, USA

#### Designing an Educational Video Game for Smoking Prevention

Anna McDaniel, Renee Stratton & Norman Legge, Indiana University, USA

#### Building Functional Tell and Ask Interfaces: Issues and Challenges

Josette Jones, Indiana University-Purdue University Indianapolis, USA

### The Connected Home—From an Organizational and Psychosocial Perspective Across Cultures

Trevi

Chair: *Gunilla Bradley, IT University/Royal Institute of Technology, Sweden*

#### The Convergence Theory on Information and Communication Technology (ICT) and the Psychosocial Life Environment—The Connected Home

Gunilla Bradley, IT University/Royal Institute of Technology, Sweden

#### Designing the Family Portal as Home Information System and for Home Networking

Alladi Venkatesh, University of California, USA

#### Home of the Future and Information and Communication Technology (ICT): Comparison between Sweden and Japan

Linda Bradley, Soul Business Innovation Group, Sweden

#### Communication and Lifestyle in the IT Era

Minako Kambara, News2u Corporation, Japan

#### Information Management Centers in Everyday Home Life

Saeko Nomura, University of California, San Diego, USA, Hiroshi Tamura, Hakuodo Inc., Japan & Jim Hollan, University of California, San Diego, USA

#### How Do We Connect to the Future? Visions—Reality—Vision of Broadband to the Home

Anna Hrdlicka, Royal Institute of Technology Stockholm, Sweden

#### Fun in the Home: Guidelines for Evaluating Interactive Entertainment on the Web

Charlotte Wiberg, Umea University, Sweden

#### Can We Determine User Location in Commonplace Environments?

Christopher Power & Yuan Xue, University of Western Ontario, Canada

## OCSC

### Cross-Cultural Online Communities

Pisa

Chair: *Anita Komlodi, University of Maryland Baltimore County, USA*

#### Online Communities

Gabriella Szaloki, National Szechenyi Library, Hungary

#### The Study Design of a Cross-Cultural Instant Messaging Study

Weimin Hou & Anita Komlodi, University of Maryland Baltimore County, USA & Jennifer Preece, University of Maryland, USA

#### Supporting Children's Cross-Cultural, Cross Language Communication

Anita Komlodi, University of Maryland Baltimore County, USA, Jennifer Preece, Allison Druin & Philip Resnik, University of Maryland, USA, Enrique Stanziola, University of Maryland Baltimore County, USA, Lingling Zahn, Aaron Elkiss, Sabrina Liao & Roya Swartz, University of Maryland, USA

#### Cross-Cultural Issues in Evaluating Culturally Diverse Users

Vanessa Evers, University of Amsterdam, The Netherlands

#### Why Understanding Culture is Important for Developing Effective Online Health Support: The Brazilian Context

Clarissa Barbosa, Carla Leitao & Clarisse de Souza, PUC-Rio, Brazil

#### The Design Exchange: A Collaborative Online Community for Designers Based on Shared Construction of Design Knowledge

Eli Blevis, Youn-Kyung Lim & Muzaffer Ozakca, Indiana University at Bloomington, USA



# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## VR

### Conveying Emotion and Information with Sound

#### Majestium

*Chairs: Russell Shilling, Office of Naval Research, USA & Barbara Shinn-Cunningham, Boston University, USA*

### The Impact of Sound on Emotion and its Importance in Military and Medical Simulation

*Russell Shilling, Office of Naval Research, USA*

### The Role of High Frequency Information in Talker Localisation and Segregation: Bandwidth Requirements for Multi-Source 3D Audio

*Simon Carlile, Craig Jin & Andre van Schaik, University of Sydney, Australia*

### Trading Directional Accuracy for Realism in a Virtual Auditory Display

*Barbara Shinn-Cunningham, I-Fan Lin & Tim Streeter, Boston University, USA*

### Real-Time Controllers to Enable Conveying Emotion with Sound (A Fancy Name for Interactive Computer Music)

*Perry Cook, Princeton University, USA*

### Round Table Discussion: Conveying Emotion and Information with Sound

### VR: Research and Development in China

#### Regalium

*Chairs: Wei Zhang, Tsinghua University, China & Weimin Mou, Chinese Academy of Sciences, China*

### Driving Behavior and Capability Study Using Virtual Reality Driving Simulation

*Ying Wang, Yingyue Liu, Wei Zhang & Su Wu, Tsinghua University, China*

### Study on Virtual Maintenance

*Yuhang Yang, Xiping Wu, Yafeng Li & Mandi Su, Tsinghua University, China*

### Human Modeling and Simulation in Virtual Environment for Aged People's Product Optimization

*Huanzhang Fu, Weiheng Wu & Heng Lin, Tsinghua University, China*

### Ergonomics Study System Based on Virtual Reality Technologies

*Haiqing Huang, Huangzhang Fu & Wei Zhang, Tsinghua University, China*

### A Literature Review of Virtual Reality Research and Application in China

*Pubin Duan & Wei Zhang, Tsinghua University, China & Yonggang Chen, Weikecheng Company Ltd., China*

## EPCE

### Modeling Driver Behavior for Human Centered Design in Advanced Assistance Automotive Environments

#### Genoa

*Chair: Pietro Carlo Cacciabue, EC Joint Research Centre, Italy*

### Driver Behaviour Measures—Are They Reliable and Valid?

*Rebecca Stewart & Don Harris, Cranfield University, United Kingdom*

### In-Car Machine-Human Interaction: How to Couple Vehicle Technologies with User-Centered Design

*Pietro Carlo Cacciabue, EC Joint Research Centre, Italy, Roberto Montanari, University of Modena and Reggio Emilia, Italy, Fabio Tango, Centro Ricerche Fiat, Italy*

### Lane-Change Assistance: Predicting Drivers Intentions by Eye-Movement

*Josef Krems, Martin Baumann, M. Henning, Chemnitz University of Technology, Germany & M. Schweigert, BMW Group, Germany*

### Modeling Driver Behaviour on Basis of Emotions and Feelings: Predicting Effects of Intelligent Transport Systems

*Truls Vaa, Institute of Transport Economics, Norway*

### Behavioural Adaptations and Modelling Drivers' Performance with Advanced Automation Systems

*Pietro Carlo Cacciabue, EC Joint Research Centre, Italy & Farida Saad, INRETS, France*

**AC**

**Functional Near Infrared Technologies for Assessing Cognitive Function**

**Tiberius 7**

*Chair: Monica Fabiani, University of Illinois at Urbana-Champaign, USA*

**Near-Infrared Brain Imaging and Augmented Cognition: A Brief Overview of Advancements, Challenges and Future Developments**

Monica Fabiani & Gabriele Gratton, University of Illinois at Urbana-Champaign, USA

**Functional Imaging of the Brain: Underlying Physiological Mechanisms**

Ron Frostig, University of California, Irvine, USA

**Non-Invasive Measurement of Functional Optical Brain Changes**

Gabriele Gratton & Monica Fabiani, University of Illinois at Urbana-Champaign, USA

**A New Approach to fNIR: The Optical Tomographic Imaging Spectrometer**

J. Hunter Downs III & Traci Downs, Archinoetics, LLC, USA, William Robinson, NovaSol, USA, Erin Nishimura & J. Patrick Stautzenberger, Archinoetics, LLC, USA

**Hemodynamic Response Estimation During Cognitive Activity Using fNIR Spectroscopy**

Meltem Izzetoglu, Drexel University, USA, Shoko Nioka, University of Pennsylvania, USA, Scott Bunce, Kurtulus Izzetoglu & Banu Onaral, Drexel University, USA & Britton Chance, University of Pennsylvania, USA

**When the Rules Keep Changing: Using the Fast Optical Signal to Elucidate Different Brain Preparatory States**

Kathy Low, Echo Leaver, Jason Agran, Monica Fabiani & Gabriele Gratton, University of Illinois at Urbana-Champaign, USA

**An Optical Imaging Analysis of Preparatory States for Visual and Auditory Stimuli in Human Cortex**

Jason Agran, Kathy Low, Mary Askren, Echo Leaver, Christopher Whalen, Monica Fabiani & Gabriele Gratton, University of Illinois at Urbana-Champaign, USA

**Telescopic Imaging of PFC Hemodynamic and Metabolic Activities by Remote Sensing NIR Imaging**

Britton Chance, Cindyu Wang & Zhongyao Zhao, University of Pennsylvania, USA

**Stress in the Computing Environment**

**Tiberius 8**

*Chair: Peter Hancock, University of Central Florida, USA*

**Operator Performance Under Stress**

Peter Hancock, James Szalma & Tal Oron-Gilad, University of Central Florida, USA

**Human Temporal Judgment in the Humans-in-Automation Environment**

Laurel Allender, Daniel Cassenti & Rene de Pontbriand, U.S. Army Research Laboratory, USA

**Concentration—An Instrument to Augment Cognition**

Anthony Gaillard, TNO Human Factors, The Netherlands

**Human Robot Teams as Soldier Augmentation in Future Battlefields: An Overview**

Michael Barnes, Keryl Cosenczo, Diane Mitchell & Jessie Chen, U.S. Army Research Laboratory, USA

**Cerebral Hemodynamics and Brain Systems in Vigilance**

Joel Warm & Gerald Matthews, University of Cincinnati, USA, Lloyd Tripp, Air Force Research Laboratory, USA & Peter Hancock, University of Central Florida, USA

**Augmented Reality as a Human Computer Interaction Device for Augmented Cognition**

Brian Goldiez, Ali Ahmad, Kay Stanney, Peter Hancock & Jeffrey Dawson, University of Central Florida, USA

**Orienting Spatial Attention in Augmented Reality**

Christian Jerome & Bob Witmer, U.S. Army Research Institute, USA & Mustapha Mouloua, University of Central Florida, USA

**UAHCI**

**Older Adults, Speech Based Information Systems and Driving Safety**

**Claudius 1**

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

**Space Synapse Systems and the Symbiotic Sphere**

Anna Hill, Space Synapse Ltd., Ireland

**Context-Aware Physical Interfaces**

Leonardo Bonanni, Chia-Hsun Lee & Ted Selker, MIT Media Lab, USA

**Speech Patterns for Older Adults While Driving**

Christian Jones, Heriot-Watt University, United Kingdom & Ing-Marie Jonsson, Stanford University, USA

**Selecting the Voice for an In-Car Information System for Older Adults**

Ing-Marie Jonsson, Stanford University, USA & Mary Zajicek, Oxford Brookes University, United Kingdom

**CRUSE: A Context Reactive Natural Language Mobile Interface**

Babak Hodjat, Siamak Hodjat & Nick Treadgold, iAnywhere Solutions, USA & Ing-Marie Jonsson, Stanford University, USA

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## HCI

### Accessibility for Users with Special Needs 1

#### Claudius 2

*Chair: Dyi-Yih Michael Lin, I-Shou University, Taiwan*

#### Accessible Web Sites can be Modelled as Oral Dialogues

Sebastiano Colazzo & Nicoletta Di Blas, Politecnico di Milano, Italy, Daniele Gobetti, University of Lugano, Switzerland & Paolo Paolini, Politecnico di Milano, Italy

#### Basic Study of a Communication Device for the Deaf-Blind by Use of a Subject's Finger and a Palm—Development of a Tactile Displaying Method

Chikamune Wada & Hiroshi Horio, Kyushu Institute of Technology, Japan

#### Evaluation of E-Learning Performance of High School Students with Mental Disability

Ming-Hsu Wang, Wen-Ko Chiou & Chun-Di Chen, Chang Gung University, Taiwan

#### The Relationship Between Self-Efficacy and E-Learning on Mentally-Handicapped Students

Wen-Ko Chiou, Ming-Hsu Wang & Wen-Zhi Chen, Chang Gung University, Taiwan

#### Using AR for Children to Promote Chinese Phonetic Alphabet Learning

Chien-Hsu Chen, Fong-Gong Wu & Chun-Chin Su, National Cheng Kung University, Taiwan

#### Assessment of the Usefulness and Importance of ADAS' Safety Related Functions by Elderly Drivers

Francesco Palma, Centro Ricerche Fiat, Italy, Lorenz Hagenmeyer, University of Stuttgart, Germany, Evangelos Bekiaris & Maria Panou, Hellenic Institute of Transport, Greece

### Multilingual, Multimodal User Interfaces and Avatars

#### Claudius 3

*Chairs: Alain Leger, Malek Boualem & Danielle Pele, France Telecom R&D, France*

#### Using Facial Feedback to Enhance Turn-Taking in a Multimodal Dialogue System

Michael White, Mary Ellen Foster, Jon Oberlander & Ash Brown, University of Edinburgh, United Kingdom

#### Natural Multilingual Dialogue with a 3D Conversational Agent Dedicated to Interactive Web and Mobile Applications

Danielle Pele, Gaspard Breton, Franck Panaget, Philippe Bretier, Thierry Moudenc & Geraldine Damnati, France Telecom R&D, France

#### CONE: Improving Human-Computer Interaction by Integrated Ontological Models

Kuldar Taveter, VTT Information Technologies, Finland

#### User Behavior in Multimodal Interaction

Elisabeth Den Os, Max Planck Institute for Psycholinguistics, Germany & Lou Boves, Radboud University Nijmegen, The Netherlands

#### Multimodal Face-to-Face Interaction with a Talking Face: Eye Gaze, Mutual Attention and Deixis

Gerard Bailly, Frederic Elisei & Stephan Raidt, ICP/INPG, France

### When Computer Games Meet Universal Access

#### Claudius 4

*Chair: Dimitris Grammenos, FORTH-ICS, Greece*

#### Development Techniques for Creating Universally Accessible Games

Dennis Asher, www.nanogames.com, New Zealand

#### Computer Games that Work for Visually Impaired Children

Dominique Archambault, Universite Pierre et Marie Curie, France, Damien Olivier, Universite du Havre, France & Harry Svensson, The Swedish Institute for Special Needs Education, Sweden

#### A Pervasive Game with a Dynamically Distributed and Configurable User Interface

Anthony Savidis, Yannis Georgalis & Constantine Stephanidis, FORTH-ICS, Greece

#### UA-Chess: A Universally Accessible Board Game

Dimitrios Grammenos, Anthony Savidis & Constantine Stephanidis, FORTH-ICS, Greece

#### Game Not Over: Accessibility Issues in Video Games

Kevin Bierre, Rochester Institute of Technology, USA, Jonathan Chetwynd, peepo.co.uk, United Kingdom, Barrie Ellis, OneSwitch.org.uk, United Kingdom, D. Michelle Hinn, University of Illinois at Urbana-Champaign, USA, Stephanie Ludi, Rochester Institute of Technology, USA & Thomas Westin, Interactive AB, Sweden

### Human, Computer and Environment

#### Tiberius 2

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

#### Ergonomic Aspects of the Future Housing Forms for the Elderly

Jerzy Chartyonowicz & Przemyslaw Nowakowski, Wroclaw University of Technology, Poland

#### Information as a Factor of Development of Society

Jerzy Olszewski, University of Economics, Poland

#### Possibility of Introducing Electronic Data Interchange (EDI) in an Enterprise

Ewa Gorska & Jerzy Lewandowski, Warsaw University of Technology, Poland

#### Environmental Aspects as a Basis of the Enterprises Strategy

Aleksandra Kawecka-Endler, Poznan University of Technology, Poland

#### Autonomic Balance and Personality of Net-Addicted VDT-Operators

Anna Janocha, Robert Skalik, Ewa Salomon, Ludmila Borodulin-Nadzieja, Ireneusz Calkosinski, Witold Pilecki & Malgorzata Sobieszczanska, Medical University of Wroclaw, Poland

#### Computer Environment and Automation in Building Designing Process

Jerzy Chartyonowicz, Wroclaw University of Technology, Poland & Krzysztof Sztajkowski, WSSiP, Poland

#### Overcoming the Bad Tradition in Designing a Computerized Workplace

Edwin Tytyk, Poznan University of Technology, Poland

## Performance

### Tiberius 1

*Chair: Naomi Swanson, NIOSH, USA*

#### **Performance and Posture Differences Between a Wrist-Operated and a Finger-Operated Input Devices**

Yung-Hui Lee & Mu-Chuan Su, National Taiwan University of Science & Technology, Taiwan

#### **An Analysis of Novice Text Entry Performance on Large Interactive Wall Surfaces**

Andriy Pavlovych & Wolfgang Stuerzlinger, York University, Canada

#### **Effects of Mass Marketed Software Products on the Evolution of Software Interface Language**

Ekin Dino & Cigdem Erbug, Middle East Technical University, Turkey

#### **A Novel Method to Measuring the Complexity of Human-Computer Interaction**

Christopher Schlick, RWTH Aachen University, Germany, Carsten Winkelholz & Florian Motz, FGAN-FKIE, Germany

#### **Development of Human Performance Evaluation Support System for Human Factors**

#### **Validation of MCR Design in an Advanced Nuclear Power Plants**

Jun Su Ha, Poong Hyun Seong, Chang Hoon Ha & Jong Hyun Kim, Korea Advanced Institute of Science & Technology, Korea

#### **Auditive “Boldfacing,” Emotional Characteristics of Message, and Individual Differences in Memory Acquisition of Computer Mediated Business News**

Kari Kallinen, Jari Laarni, Niklas Ravaja & Timo Saari, Helsinki School of Economics, Finland

#### **Aromatic Feedback for Ambient and Implicit Interfaces**

Noritaka Osawa, National Institute of Multimedia Education, Japan, Hideaki Kobayashi, The Graduate University for Advanced Studies, Japan & Kikuo Asai, National Institute of Multimedia Education, Japan

#### **Real-time Analysis of Speech Streams and their Representation as Conceptual Structures**

Ronny Melz, Christian Biemann, Karsten Boehm, Gerhard Heyer & Fabian Schmidt, University of Leipzig, Germany

## Internet/Web— Quality & Usefulness

### Tiberius 3

*Chair: Alvaro Taveira, University of Wisconsin-Whitewater, USA*

#### **Applying Usage Patterns for Web Analysis**

Thomas Tiedtke, Thomas Krach, Christoph Spath & Christian Martin, Augsburg University of Applied Sciences, Germany

#### **PeekWindow: An Intuitive Technique for Browsing Multiple Windows Quickly**

Keisuke Kambara, Koji Tsukada & Michiaki Yasumura, Keio University, Japan

#### **Performance Effects of Keyboard Navigation in Web Systems**

Luis Bruno & Luis Garcia ESTIG, Portugal

#### **Specifying a Model to Explore the Role of Perceived Usefulness in Web-Based Information Systems Use**

Maryam Aziz & Robert Macredie, Brunel University, United Kingdom

#### **Guidelines and Standards for Web Usability**

Nigel Bevan, Serco Usability Services, United Kingdom

#### **Kansei Interface Design for Network Computing**

Kazuhiko Yamazaki, IBM Japan/The University of Tokyo, Japan & Kazuo Furuta, The University of Tokyo, Japan

#### **Survey on Quality Models to Measure the Quality of Web Sites and Applications**

Francisco Javier Garcia, Maria Dolores Lozano, Francisco Montero, Jose Antonio Gallud, Victor Penichet & Carlota Lorenzo, Universidad de Castilla-La Mancha, Spain

## HCI Learning/Education 1

### Tiberius 4

*Chair: Francois Sainfort, Georgia Institute of Technology, USA*

#### **Human Factors in the HCI Learning Process: A Survey**

David Cox, Southampton Institute, United Kingdom

#### **Programming by Example: A Powerful Paradigm to Support the Experimental Acquisition of Programming Skills**

Nicolas Guibert, Patrick Girard & Laurent Guittet, LISI/ENSMA, France

#### **Intelligent Tutoring System for Enhancing E-Learning/E-Teaching in an Engineering Course**

Jose Manuel Noheda & Antonio Fernandez-Caballero, University of Castilla-La Mancha, Spain, Enrique Lazcorreta & Federico Botella Bevia, University Miguel Hernandez of Elche, Spain

#### **A Low-Cost Digital Usability Recording Environment for Undergraduate Education and Research**

Terence Andre & Austen Lefebvre, U.S. Air Force Academy, USA & Shane Lovellette, TechSmith Corporation, USA

#### **Instructional Computing: What Students Want**

Thomas Hewett, Drexel University, USA & Dana Sari, Behavioral Medicine Institute, USA

#### **Interactive Education and Mobile Learning Through Wireless Communication Networks**

Danco Davcev, Vladimir Trajkovic & Slobodan Kalajdziski, Sts. Cyril and Methodius University, Fyrom

#### **K-12 Teachers as Educational Simulation Developers: A Study of Reuse Programming for the Classroom**

Cheryl Seals & Kamilah Walker, Auburn University & Mary Beth Rosson, The Pennsylvania State University, USA

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## E&H

### Creating and Sustaining Ergonomic Programs in the Workplace

#### Palermo

Chair: *Barbara Cohen, Internal Revenue Service, USA*

#### Sustainability in the E-Society Workplace—Theory and Reflection on ICT and Psychosocial Communication

*Gunilla Bradley, IT University/Royal Institute of Technology, Sweden*

#### Ecological Perspective on Effective Ergonomic Interventions

*Marvin Dainoff, Miami University, USA*

#### Building a Responsive Environment for Office Ergonomics

*Michelle Robertson, Liberty Mutual Research Institute for Safety, USA*

#### Designing E-Learning for Aging Population in the Workplace

*Lisa Neal, eLearn Magazine, USA*

#### Anthropometric Survey of Taiwanese Adults for Ear-Related Products Design

*Bor-Shong Liu, St. John's & St. Mary's Institute of Technology, Taiwan & Ching-Wen Lien, Taipei Veterans General Hospital, Taiwan*

#### Feedback of IT-Ergonomic Data to the Individual, Workgroup or Supervisor as a Way to Stimulate Working Environment Activity—A RCT

*Mats Eklof & Mats Hagberg, Sahlgrenska Academy at Goteborg University, Sweden*

## HIMI

### Methods and Techniques for the Analysis and Synthesis of Natural Modalities

#### Turin

Chairs: *Andrea Corradini, University of Southern Denmark, Denmark & Alpha Lee, The Hong Kong Polytechnic University, Hong Kong*

#### Script-based Multimodal Output Generation for a Conversational Character

*Andrea Corradini, Manish Mehta & Niels-Ole Bersen, University of Southern Denmark, Denmark*

#### NEURON—Networked Edutainment UniveRse ONLINE

*Alpha Lee, The Hong Kong Polytechnic University, Hong Kong*

#### Multimodal Human-Computer Interface for Assisting Neurosurgical System

*Andrey Ronzhin, Alexey Karpov & Adil Timofeev, Russian Academy of Sciences, Russia & M.V. Litvinov, Baltic State Technical University, Russia*

#### Mixed Reality Human Centered Media for Social and Physical Interaction and Entertainment

*Ke Xu, Adrian David Cheok, Wei Liu, Shang Ping Lee, Sze Lee Teo & Hui Siang Teo, National University of Singapore, Singapore & Hirokazu Kato, Osaka University, Japan*

#### Analysis and Synthesis of Cooperation Between Modalities

*Jean-Claude Martin, LIMSI-CNRS, France*

#### Active Walking Interface for Human Scale Virtual Environment

*Laroussi Bouguila, Evequoz Florian, Michele Courani & Beat Hirsbrunner, University of Fribourg, Switzerland*

#### Reading Short Lines

*Monika Polonen, Nokia Research Center, Finland, Jukka Hokkinen, University of Helsinki, Finland & Jari Laarni, Helsinki School of Economics, Finland*

### Knowledge Processes

#### Verona

Chair: *Richard Koubek, The Pennsylvania State University, USA*

#### Using the Lens Model Framework to Characterize Compensatory and Noncompensatory Decision Making Strategies

*Ling Rothrock & Jing Yin, The Pennsylvania State University, USA, & Alex Kirlik, University of Illinois at Urbana-Champaign, USA*

#### Human Factors Assessment of Three Commercial Interior Positioning Systems

*Craig Harvey, Louisiana State University, USA, Sarah Everett, Lockheed Martin Space Operations, USA, Mihriban Whitmore, NASA Johnson Space Center, USA & Kritina Holden, Lockheed Martin Space Operations, USA*

#### Toward a Framework for Decay Resistant Knowledge

*Jong Wook Kim & Richard Koubek, The Pennsylvania State University, USA & Nathan Brannon, Sandia National Labs, USA*

#### Toward an Understanding of Risk-Taking in Teleoperation

*Daniel Mountjoy & Anthony Perry, North Carolina A&T State University, USA*

#### Visualizing Information Space Through Dimensional Scaling Using Space-Filling Curves

*Sundaram Narayanan, Narsimha Edala & Lavanya Koppaka, Wright State University, USA*

#### Knowledge State Sensitive Mission Rehearsal

*Nathan Brannon, Sandia National Labs, USA*

#### Analysis and Simulation of Core Competences in Human Resource Development

*Jussi Kantola, Tomi Vesanen & Antti Piirto, Tampere University of Technology, Finland, Waldemar Karwowski, University of Louisville, USA & Hannu Vanharanta, Tampere University of Technology, Finland*

#### Human Interaction with Computers: Cognitive Skills Employed in Digital Work

*Yoram Eshet, The Open University of Israel, Israel*

# Parallel Tech

Wednesday, July 27, 2005 • Morning 8–10 am

## HIMI

### HCI in the Automotive Industry

#### Trevi

*Chair: Vincent Duffy, Mississippi State University, USA*

#### Using Computerized Ergonomic Analysis Tools for Work Assessment

Christy Jinyan Du, Mississippi State University, USA, Sabrina Williams, Jackson State University, USA, Vincent Duffy, Qiuli Yu, John McGinley, Daniel Carruth, Mississippi State University, USA

#### Towards Utilization of Motion Capture for Dynamic Ergonomic Assessment

Tara Cappelli & Vincent Duffy, Mississippi State University, USA

#### Digital Human Modeling for Ergonomic Analysis and Design in the Automotive Industry: An Overview

Vincent Duffy, Mississippi State University, USA

#### Validation of the Virtual Build Methodology for Automotive Manufacturing

Tinghao Wu, Vincent Duffy, Jihun Kang, Daniel Carruth, Renran Tian & Zach Rowland, Mississippi State University, USA

#### Towards Integrating Cognitive Models and Digital Human Models

Daniel Carruth & Vincent Duffy, Mississippi State University, USA

#### A Methodology for Non-Intrusive Mental Workload Measurement in Simulated and On-Road Driving

Calvin Ka-Lun Or, University of Wisconsin-Madison, USA & Vincent Duffy, Mississippi State University, USA

#### Virtual Design Optimization Tool for Improved Human-Machine Interaction

Vincent Duffy, Mingzhou Jin, Burak Eksioglu, Qiuli Yu, Jihun Kang & Christy Jinyan Du, Mississippi State University, USA

#### Definition and Assessment of In-Vehicle Information Delivering Hysteresis in Transitions Between Critical and Non-Critical Scenarios

Roberto Montanari, University of Modena and Reggio Emilia, Italy

## OCSC

### Computer Mediated Collective Action

#### Tiberius 5

*Chair: Marc Smith, Microsoft Research, USA*

#### Reputation, Quality, and Democratic Participation in Collaborative Web Authoring Environments

Susan Herring, Indiana University Bloomington, USA

#### Friendster and the Collective Creation of Digital Identity

danah boyd, University of California, Berkeley, USA

#### Douglas.Net: The Socio-Technical Infrastructure of the Alternative Birth Movement

Christine Morton, Seattle University, USA

#### Smart Mobs and the Collective Creation of Common Resources: Examples from the Field

Howard Rheingold, Freelance Instigator, USA

#### Question and Answer Populations in Technology-Focused Usenet Newsgroups: Implications for Online Community Developers

Brian Butler, University of Pittsburgh, USA

#### Online Dating: Making Sense of the Meet Market

Andrew Fiore, University of California, Berkeley, USA

## VR

### Virtual Reality— Learning Systems

#### Tiberius 6

*Chair: Pat Banerjee, University of Illinois at Chicago, USA*

#### Using Elementary and Undergraduate Students to Compare 3D System with Minimalist Tutorials

Fred Strickland & Cheryl Seals, Auburn University, USA

#### Co-CreativePen: A System for Children Constructing Sharing Virtual World

Feng Tian, Fengjun Zhang, Guo-Zhong Dai, & WeiXin Wang, Chinese Academy of Sciences, China

#### Heuristic Evaluation of Animated Help in Hypermedia

Francisco Cipolla Ficara, F&F Multimedia Communications Corp. and Università degli Studi di Bergamo, Italy

#### Computer Assisted Instruction Using Augmented Reality in Operating the Transportable Earth Station—Comparison Between Single-Sided and Both-Sided HMDs

Kikuo Asai, National Institute of Multimedia Education, Japan & Hideaki Kobayashi, The Graduate University for Advanced Studies, Japan

#### Virtual Learning Environment Through Design Principles: What the Experiments Reveal

Rosamelia Parizotto-Ribeiro & Nick Hammond, University of York, United Kingdom

#### Developing Mathematics Skills Through Audio Interfaces

Jaime Sanchez & Mauricio Saenz, University of Chile, Chile

### Benefits of Virtual Environments

#### Majestium

*Chairs: Miglena Dontschewa & Philipp von Hellberg, Vorarlberg University of Applied Sciences, Austria*

#### Immersion Research in the Area of the Virtual Reality at the User Centered Technologies Research Institute

Miglena Dontschewa, Karl-Heinz Weidmann, Philipp Von Hellberg & Andreas Kunz, Vorarlberg University of Applied Sciences, Austria & Marin Marinov, Technical University of Sofia, Bulgaria

#### UI Concepts of VR Systems for Product Development

Andre Stork, Pedro Santos & Stefan Wundrak, Fraunhofer-IGD, Germany

#### Benefit of VR in the Development-Process

Beat Bruderlin, Technical University Ilmenau, Germany

#### The Virtual Set as a Kind of Virtual Environment

Arne Nowak & Hans-Peter Schade, Technical University Ilmenau, Germany

#### User Centered Virtual Prototyping: Do Users Feel Real with Virtual Prototypes?

Guido Kempter, Miglena Dontschewa, Pascale Roux & Walter Ritter, Vorarlberg University of Applied Sciences, Austria

#### Immersive Virtual Reality for a Well-Being Experience: Psychological Support Through Immersive Virtual Reality

Constantin Boytscheff, University of Applied Science Constance, Germany & Marilu Kanacri Sfeir, Next Reality, Germany

#### Analysis of Flow Phenomena in Virtual Environments— Benefits, Challenges and Solutions

Torsten Kuhlen, Andreas Gerndt, Ingo Assenmacher, Bernd Hentschel, Marc Schirski, Marc Wolter & Christian Bischof, RWTH Aachen University, Germany

# nical Sessions

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## VR Simulation & Modeling

### Regalium

*Chair: Dennis Jones, University of Wisconsin-Madison, USA*

#### Connected Immersion

Gurminder Singh, Naval Postgraduate School, USA & Michael Zyda, USC Viterbi School of Engineering, USA

#### Ancient Technology Works Presentation Using Haptic Interaction and Gesture Recognition

Georgios Nikolakis, Dimitrios Tzouvaras & Sotirios Malassiotis, Centre for Research and Technology Hellas, Greece & Michael Srintzis, Aristotle University of Thessaloniki, Greece

#### An Assume of a New Kind of Smart House

Zhang Shujie, eleror@163.com, China

#### Dynamic Simulation and Real-Time Interactions with Reconstructed Human Body Organs

Giovanni Aloisio, Lucio De Paolis, Euro Blasi & Alessandro De Mauro, University of Lecce, Italy

#### Simulating On-the-Job Training Using a Collaborative Virtual Environment with Head Slaved Visual Deictic Reference

Sajay Sadasivan, Rachana Rele, Joel Greenstein, Andrew Duchowski & Anand Gramopadhye, Clemson University, USA

#### The Design of a Performance Simulation System for Virtual Reality

Maribeth Gandy, Scott Robertson & Ed Price, Georgia Institute of Technology, USA, Joseph Bailey, Naval Postgraduate School, USA

## Simulated and Virtual Environments

### Pisa

*Chair: Randall Shumaker, University of Central Florida, USA*

#### Experimental Investigation for Presentation for AIS Symbols on ECDIS in a Motion-Based Ship Bridge Simulator

Florian Motz & Heino Widdel, FGAN-FKIE, Germany, Scott MacKinnon & Anthony Patterson, Memorial University of Newfoundland, Canada & Lee Alexander, University of New Hampshire, USA

#### Modeling of Human Gait in Virtual Reality

Haining Dong, Simon Hsiang, Yanxin Zhang & Ji Lin, Texas Tech University, USA

#### Design of a Virtual Borescope: A Presence Study

Deepak Vembar, Sajay Sadasivan, Andrew Duchowski, Paris Stringfellow & Anand Gramopadhye, Clemson University, USA

#### Virtual Dancer: Architecture for Generating Semi-Automatic 3D Automations

Rodrigo Lima, Davi Cabral, Roberto Barros & Geber Ramalho, UFPE, Brazil

#### Comparison of the Impression of the Space Between Virtual Environment and Real Environment

Michiko Ohkura, Yoshie Komatsu, Yuki Shimada, Takumi Shibata, Shin-ichiro Nakayama & Yoko Watanabe, Shibaura Institute of Technology, Japan

#### Evaluating Collaboration in Distributed Virtual Environments for a Puzzle-Solving Task

Ilona Heldal, Chalmers University, Sweden, Anthony Steed, University College London, United Kingdom & Ralph Schroeder, University of Oxford, United Kingdom

#### Cognitive Model-Enabled Simulation-based Training of Aerospace Operations Center Operators

Azad Madni & Carla Madni, Intelligent Systems Technology, Inc., USA & Sharon Garcia, ARFL/HEAI, USA

## U&I

## Cultural Studies

### Naples

*Chair: Kerstin Roese, University of Kaiserslautern, Germany*

#### Development of Web-Based Tool for Cross-Cultural Design

Kim-Pyo Lee, KAIST, S. Korea

#### Products Interface Design: Cultural Design

Pierre-Henri Dejean, Universite de Technologie de Compiègne, France

#### Cultural Issues and their Representation in Cultural Variables for Human-Machine Systems

Kerstin Rose, University of Kaiserslautern, Germany

#### Usability Engineering in a German Context—How Cultural Values Can Influence Product Design

Pia Quat-Faslem, Siemens AG, Germany

#### How Cultural Diversity be Treated in the Interface Design? A Case Study of e-Learning System

Masaaki Kurosu, National Institute of Multimedia Education, Japan

#### Perspectives to Evaluations of Usage Scenarios in Intercultural Projects

Veikko Ikonen, Katja Rentto & Hanna Stromberg, VTT Information Technologies, Finland

## EPCE

## Uninhabited Vehicles: Intelligent Behaviour and the Integration of the Human Element

### Genoa

*Chair: Axel Schulte, Munich University of the German Armed Forces, Germany*

#### Evaluation of a Multimodal Display in a Multirobot User Interface

Boris Trouvain, FGAN, Germany & Christopher Schlick, RWTH Aachen University, Germany

#### Experimental Set-Up for the Development of Autonomous Capabilities and Operator Assistance in UAV Guidance

Claudia Ertl, Michael Kriegel & Axel Schulte, Munich University of the German Armed Forces, Germany

#### Project Alchemy: An Experimental Human Factors Test Bed for iSTAR UAVs in Urban Operation

Robert Stone, University of Birmingham, United Kingdom

#### Designing an Intuitive Interface for Control of Autonomous UAVs

Sarah Louise Howitt, Dale Richards & Alan White, QinetiQ, Ltd., United Kingdom & Robert Taylor, Defence Science and Technology Lab, United Kingdom

#### Management of Multiple Dynamic Human Supervisory Control Tasks for UAVs

Mary Cummings & P.J. Mitchel, Massachusetts Institute of Technology, USA

#### A Conversation-Based Interaction and Inference Capability for UAV Supervisory Control (C-BIIC)

Mark Draper, David Williamson & John Friskie, Air Force Research Laboratory, USA, Timothy Barry, Sytronics, Inc., USA, Michael Patzek & Gloria Calhoun, Air Force Research Laboratory, USA

# Parallel Tech

Wednesday, July 27, 2005 • Morning 10:30 am–12:30 pm

Wednesday • 10:30 am–12:30 pm

## AC

### EEG for Functional Operator State Assessment

**Tiberius 7**

*Chair: Glenn Wilson, Air Force Research Laboratory, USA*

#### The Invisible Electrode—Zero Prep Time, Ultra Low Capacitive Sensing

Robert Matthews, Neil McDonald, Igor Fridman, Paul Hervieux & Tom Nielsen, QUASAR, USA

#### Artifact Detection and Correction of Operator Functional State Estimation

Chris Russell, Air Force Research Laboratory, USA, Ping He, Wright State University, USA & Glenn Wilson, Air Force Research Laboratory, USA

#### On-line Correction of Artifacts in Cognitive State Gauges

Don Tucker, Pieter Poolman & Phan Luu, Electrical Geodesics, Inc., USA

#### eXecutive Load Index (XLI): Spatial-Frequency EEG Tracks Moment-to-Moment Changes in High-Order Attentional Resources

Donald DuRousseau & M.A. Mannucci, Human Bionics LLC, USA

#### Imaging the Cortical Dynamics of a Driver Under Real Driving Conditions

Michael Schrauf & Wilhelm Kincses, DaimlerChrysler AG, Germany

#### Cortical Activity of Soldiers During Shooting as a Function of Varied Task Demand

Scott Kerick, U.S. Army Research Laboratory, USA

#### Cluster Analysis to Assess Task Design as it Relates to EEG and Other Physiological Measures in Operational Settings

Chris Russell & Richard Burns, Air Force Research Laboratory, USA

### Augmented Cognition and Its Influence on Decision Making

**Tiberius 8**

*Chair: Robert Taylor, Defence Science & Technology Laboratory, United Kingdom*

#### Augmenting Decision Making—What GOES?

Robert Taylor, Defence Science & Technology Laboratory, United Kingdom

#### Survey of Decision Support Control/Display Concepts: Classification, Lessons Learned, and Application to Unmanned Aerial Vehicle Supervisory Control

Gloria Calhoun, Air Force Research Laboratory, USA, Heath Ruff, General Dynamics Corporation, USA, Jeremy Nelson & Mark Draper, Air Force Research Laboratory, USA

#### Enabling Autonomous UAV Cooperation by Onboard Artificial Cognition

Claudia Ertl & Axel Schulte, Munich University of the German Armed Forces, Germany

#### Integration of Human Domains to Enhance Decision Making through Design, Process, Procedures, and Organizational Structure

Jennifer McGovern Narkevicius, ARINC Engineering Services LLC, USA, Michael Brown, SkillsNET Corporation, USA & Nancy Dolan, U.S. Department of the Navy, USA

#### Implications of Adaptive vs. Adaptable UIs on Decision Making: Why “Automated Adaptiveness” Is Not Always the Right Answer

Christopher Miller, Harry Funk, Robert Goldman, John Meisner & Reggy Wu, Smart Info Flow Technologies, LLC, USA

#### Supervising UAVs: Improving Operator Performance by Optimising the Human Factor

Leo van Breda, Chris Jansen & Hans Veitman, TNO Human Factors, The Netherlands

#### Operator in the Loop? Adaptive Decision Support for Military Air Missions

Robert Cottrell, David Dixon & Thomas Hope, QinetiQ Ltd., United Kingdom & Robert Taylor, Defence Science & Technology Lab, United Kingdom

## UAHCI

### On the Quest for Omnipresent Education

**Claudius 3**

*Chairs: Vlado Glavinic, University of Zagreb, Croatia & Andrina Granic, University of Split, Croatia*

#### Adaptive Interface of a Human Teacher Emulator

Andrina Granic, University of Split, Croatia & Vlado Glavinic, University of Zagreb, Croatia

#### Usability Study of Web-Based Video Lecturing for People with Special Needs

Matjaz Debevc & Bogdan Dugonik, University of Maribor, Slovenia, Beth Meyer, Semilla Consulting, USA & Ziva Peljhan, Institute for the Deaf and Hard of Hearing, Slovenia

#### Situated Learning in the Work Process

Reinhard Oppermann, Fraunhofer-FIT, Germany

#### Low Vision Students: Considerations about the Accessibility of Educational Software

Silvia Dini, Istituto David Chiossone Onlus, Italy, Lucia Ferlino, Istituto Technologie Didattiche-CNR, Italy, Cristina Martinoli, Istituto David Chiossone Onlus, Italy & Michela Ott, Istituto Technologie Didattiche-CNR, Italy

#### Older Adults Adopt New Communication Technology

Mia Lahteenmaki, Nokia Research Center, Finland & Anne Kaikkonen, Nokia Technology Platforms, Finland

### Accessibility in the Context of Software Development Processes

**Claudius 2**

*Chair: Theresa O'Connell, Humans & Computers, Inc., USA*

#### Usability Engineering as a Critical Process in Designing for Accessibility

Deborah Hix, Virginia Tech, USA & Theresa O'Connell, Humans & Computers, Inc., USA

#### Integrating Accessibility and User-Centered Design: A U.S. Government Agency Case Study

David Hoffman, MILVETS Systems Technology, USA & Lisa Battle, Technology Services, USA

#### Steps Toward Integrating Accessibility into Development of an Internet Option for the 2010 U.S. Census

Elizabeth Murphy, U.S. Census Bureau, USA

#### Integrating Accessibility into the Spiral Model of the Software Development Life Cycle

Jonathan Addeleston, UpStart Systems, LLC, USA & Theresa O'Connell, Humans & Computers, Inc., USA

#### Cost-Justifying Web Accessibility in the Software Development Process

Jonathan Lazar & Aaron Allen, Towson University, USA

#### A Working Model for Incorporating Universal Access in a Rapid Deployment Software Process: Usability Enters, but Quietly Through the Back Door

Theresa O'Connell, Humans & Computers, Inc., USA, Jeff Burgett, Jhonghee Park, Timothy Sebel, Donna Burgett & Karsten Silz, Seldon Systems, USA

#### Tenuta: Simplified Guidance for Usability and Accessibility

Nigel Began, Serco Usability Services, United Kingdom, Nigel Claridge, Scandinavian Usability Associates, Sweden & Helen Petrie, Centre for HCI Design, United Kingdom



# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

HCI

## Personalization Meets Accessibility

**Claudius 4**

*Chairs: Anita Cremers & Jasper Lindenberg, TNO Human Factors, The Netherlands*

### Designing a Multimodal Interface for the Visually Impaired

Xiaoyu Chen, New Jersey Institute of Technology, USA

### What Do People Really Want from Their 'Smart' Homes?

Diane Gyi, Roy Kalawsky, William Green & David Atkins, Loughborough University, United Kingdom

### New Accessibility Model for Microsoft Windows

Rob Haverty, Microsoft Corporation, USA

### Increasing Usability of Search Engine Interface for the Blind

Patrizia Andronico, Marina Buzzi & Barbara Leporini, IIT-CNR, Italy

### Accessibility on the Job: Cognitive Capacity Driven Personalization

Mark Neerincx, Jasper Lindenberg & Mark Grootjen, TNO Human Factors, The Netherlands

### The Applicability of Behavioural Measures in Face-to-Virtual-Face Communication for Elderly

Don Bouwhuis, Yevgenia Bondareva & Lydia Meesters, Technische Universiteit Eindhoven, The Netherlands

### From Accessibility Standards to Accessible Products:

#### A Best-Practice Example from ETSI Usability Standards

Martin Boecker, Siemens, Germany, Anita Cremers, TNO Human Factors, The Netherlands & Walter Mellors, WM Services, United Kingdom

### Personalised PDA Accessibility for Intellectually Disabled Persons: Concept Guidelines Based on the Development of an Electronic Travel Companion

Dick Van der Pijl & Mathijs Soede, iRv, Institute for Rehabilitation Research, The Netherlands & Anita Cremers, TNO Human Factors, The Netherlands

## Generic Universal Design Methods

**Claudius 1**

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

### Design of a Multi-Modal for Effective Screen Cursor Movements

JiHyee Han, Woo-Sik Choi & Changgeun Song, Hallyam University, S. Korea & Sungwoo Kim, Samsung Electronics, S. Korea

### Direction-Indicating, Traction Manipulator to Support Mental Image Creation of Line Drawings

Yoshihiko Nomura, Maki Omoto, Tokuhiko Sugiura, Hirokazu Matsui & Norihiko Kato, Mie University, Japan

### Effective Master-Client Closed Caption Editing System for Wide Range Workforces

Kohtaroh (Cole) Miyamoto, IBM Japan, Japan

### A Component-Based Approach to Support End-User Development

Antonio Piccinno, Università di Bari, Italy

### Combining Text Mining and Information Retrieval Techniques for Enhanced Access to Statistical Data on the Web

Martin Rajman & Martin Vesely, Ecole Polytechnique Federale de Lausanne, Switzerland

### A Study of Text and Numeric Input Modalities on PDAs

Nestor Rodriguez, Jose Borges & Naomi Acosta, University of Puerto Rico-Mayaguez, Puerto Rico

### Rapid Prototyping Methods to Develop Applications for Seniors

Young Sam Ryu, Tonya Smith-Jackson & Robert Williges, Virginia Tech, USA

## Web Tools for Universal Access

**Pisa**

*Chair: Gregg Vanderheiden, University of Wisconsin-Madison, USA*

### Personalisation Through Inferring User Navigation Maps from Web Log Files

Federico Botella Bevia & Enrique Lazcorreta, University Miguel Hernandez of Elche, Spain, Antonio Fernandez-Caballero & Pascual Gonzalez, University of Castilla-La Mancha, Spain

### New Approach for Web Browsing Accessibility—A Concept of Developing Accessibility Tool

Daiji Kobayashi, Yuichi Takahashi & Sakae Yamamoto, Tokyo University of Science, Japan

### The eFORMS Prototyping: An Accessible Online Environment for Authoring and Administering Usability-Related Studies

Alexandros Mourouzis, George Kartakis, Evangelos Boutsakis & Constantine Stephanidis, FORTH-ICS, Greece

### Incorporating Accessibility in Web-Based Work Environments: Two Alternative Approaches and Issues Involved

Ioannis Basolekis, Chrisoula Alexandraki, Alexandros Mourouzis & Constantine Stephanidis, FORTH-ICS, Greece

## User-Centered Design (For IT Industry)

**Tiberius 1**

*Chair: Yong Gu Ji, Soongsil University, Korea*

### The ISO 9241-11 Definition of Usability in Usability Requirements Determination: Lessons Learnt from Case Studies

Timo Jokela, Oulu University, Finland

### The Maturing of a Successful Usability Group

Pradeep Henry, Cognizant Technology Solutions, India

### User-Centered Development Framework for Mobile Business Application

Yong Gu Ji, Soongsil University, S. Korea

### User-Centered Interface Design of Health Measurement Device in Next Generation

Myunghwan Yun, Seoul National University, S. Korea, Dongsoo Suh, Hongik University, S. Korea, Junho Park, Joohwan Lee & Jinwook Oh, Seoul National University, S. Korea

### Understanding and Designing for Exploratory Interaction with Devices

Wan Chul Yoon, Neung Kang & Hwan-Soo Park, KAIST, S. Korea

### User-Participatory Usability Testing Using Web

Kun-Pyo Lee, KAIST, S. Korea

### Prevention of Repetitive Stress Injury by User-Centered Software Solution

Dongjoon Kong, The University of Tennessee, USA, Simon Hardman & Garry Sneddon, Binary Logic Corporation, USA

## Internet/Web—Visual & Audio

### Tiberius 2

*Chair: Armando Barreto, Florida International University, USA*

#### **Augmenting Internet Browser History with Contextual Visual Representations**

Benjamin Murphy & Dennis Groth, Indiana University, USA

#### **An Empirical Assessment of Color Use on the WWW**

Thomas Mandl, University of Hildesheim, Germany & Maximilian Eibl, GESIS, Germany

#### **A VoiceXML-based Spoken Scripting Language for Voice-Based Web Navigation**

Michael Nichols & Gopal Gupta, University of Texas at Dallas, USA

#### **Differences in Web-Interaction Styles of Hard-of-Hearing and Hearing Persons**

Miki Namatame, Tsukuba College of Technology, Japan & Muneo Kitajima, National Institute of Advanced Science & Technology, Japan

#### **Controlling Networked Appliance Using Voice-Enabled Web Browser on the Internet**

Eunjeong Choi & Junsuk Park, ETRI, S. Korea

#### **Voice-Controlled Browser Using Information on the Positions of Words in the Browser Window**

Masahide Yuasa, Susumu Miwa & Minoru Ohyama, Tokyo Denki University, Japan

## Mobile Commerce and Users

### Tiberius 3

*Chair: Xiaowen Fang, DePaul University, USA*

#### **Mobile Commerce: Perspectives from Customers**

Fiona Fui-Hoon Nah, Keng Siau & Hong Sheng, University of Nebraska-Lincoln, USA

#### **Mobile Phone Usability Evaluation Framework Using Function-Emotion Hierarchy Deployment**

Myunghwan Yun, Seoul National University, S. Korea, Yong Gu Ji, Soongsil University, S. Korea, Youngbo Suh & Sangwoo Bahn, Seoul National University, S. Korea

#### **A Study on Acceptability Barriers of Mobile Commerce and User-Perceived Problems**

Asim Ant Ozok, University of Maryland Baltimore County, USA

#### **Relationships Between Customization and Mobile Customer Satisfaction**

Susy Chan, Jean Lam & Xiaowen Fang, DePaul University, USA

#### **User Model-Based Information Split for Multimodal Information Presentation**

Jacek Brzezinski, DePaul University, USA

## User Interface Design

### Tiberius 4

*Chair: Michael Byrne, Rice University, USA*

#### **User-Centered Multimodal Design on a PDA: An Experimental Evaluation of Natural Language Multimodal Dialog Interaction and Usability**

Delia Grenville, Oracle Corporation, USA

#### **HCI Design for Pervasive Computing**

Anxo Cerejjo Roibas, University of Brighton, United Kingdom & Daria Loi, RMIT University, Australia

#### **The Benefits of the Formal Approaches in User Interface Design and Specification**

Faouzi Moussa, Faculte des Sciences de Tunis, Tunisia

#### **Abduction and HCI: A Cognitive Model for Evaluating and Designing Human Interfaces**

Lorenzo Magnani, University of Pavia, Italy & Emanuele Bardone, University Piazza Botta, Italy

#### **A Guideline for Application of Dynamic Information in Consideration of the Characteristics of Tasks**

Masanori Takemoto & Yusaku Okada, Keio University, Japan

#### **Novel Interaction Methods for Product Design**

Monica Bordegoni & Umberto Cugini, Politecnico di Milano, Italy

## HCI & Learning/Education 2

### Tiberius 5

*Chair: Jianming Dong, eBay Inc., USA*

#### **HCI Aspects for Pen-Based Computers in Classrooms and Lecture Halls**

Wolfgang Huerst, Khaireel Mohamed & Thomas Ottmann, Albert-Ludwigs-Universiteit Freiburg, Germany

#### **UI-On-Demand and Within-Reach for Wall-Mounted Digital Boards in Classrooms**

Khaireel Mohamed, Albert-Ludwigs-Universiteit Freiburg, Germany

#### **A Visualization System for Program Modularization Education**

Shoichi Nakamura, Fukushima University, Japan, Keisuke Suzuki, Setsuo Yokoyama & Youzou Miyadera, Tokyo Gakugei University, Japan

#### **Analysing Interaction with Computers of SME Staff in eLearning Processes**

Ileana Hamburg, Judith Terstriep & Christiane Lindecke, IAT, Wissenschaftszentrum NRW, Germany

#### **Adapting OCC Theory for Affect Perception in Educational Software**

George Katsionis & Maria Virvou, University of Piraeus, Greece

#### **How to Study the Learnability of Complex Systems—Evaluating a System by Observing Training Sessions**

Minttu Linja-Aho & Pia Nakari, Tekla Corporation, Finland & Sari Kujala, Helsinki University of Technology, Finland

#### **Improving the Usability of Web-Based Information Systems by Accounting for Content Provider Needs and Capabilities During the Information Architecture Process**

Arno Reichenauer & Tobias Komischke, Siemens AG, Germany

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## E&H

### Health and Psychosocial Aspects of Telework

#### Palermo

*Chairs: Danuta Koradecka, Central Institute for Labour Protection-National Research Institute, Poland & Waldemar Karwowski, University of Louisville, USA*

#### Characteristics of Psychosocial Telework Environment in Poland

Andrzej Najmiec, Central Institute for Labour Protection—National Research Institute, Poland

#### Intelligent Lighting and Telework

Agnieszka Wolska, Central Institute for Labour Protection—National Research Institute, Poland

#### Health Aspects and Psychosocial Conditions of Disabled Teleworkers in Polish Studies

Bożena Kurkus-Rozowska, Central Institute for Labour Protection—National Research Institute, Poland

#### Finite Elements Analysis of Spine During Computerised Tasks

Joanna Kaminska & Danuta Roman-Liu, Central Institute for Labour Protection—National Research Institute, Poland, Tomasz Zagrajek & Pawel Borkowski, Warsaw University of Technology, Poland

#### Legal Aspects of Telework

Monika Drygala-Puto, Central Institute for Labor Protection, Poland

#### System Group of Support in Telework

Susanne Geister, University of Kiel, Germany

#### Macroergonomic Issues in Call Center Work—Implications for the Indian IT Industry

Farheen Khan & Michael Smith, University of Wisconsin-Madison, USA

## HIMI

### Human Computer Interaction in Knowledge Management

#### Verona

*Chair: Yasufumi Kume, Kinki University, Japan*

#### Human Response Under Multiple Modal Situation in Knowledge Management

Masao Nakagawa, Shiga University, Japan, Hidetoshi Nakayasu, Konan University, Japan, Tetsuya Miyoshi, Toyohashi Sozo College, Japan & Kimihiro Yamanaka, Konan University, Japan

#### Underlying Cognitive Process for Knowledge Acquisition During Visual Search—Approach by Means of Eye Movement Analysis

Atsuo Murata, Hiroko Nakamura, Nobuyasu Furukawa & Makoto Morikawa, Hiroshima City University, Japan

#### Management of Creative Process Using Cusp Surface Analysis System

Yasufumi Kume, Kiichiro Okada & Loren Cobb, Kinki University, Japan

#### Comparison of Annual Results of the Questionnaire of Investment Environment and Risk Survey in Mainland China by Evidential Dominance Rules

Chung-Yong Liu, Industrial Technology Research Institute, Tokyo Office, Japan & Yasufumi Kume, Kinki University, Japan

Japan

#### A Trial to Support the Store Improvement Task by Using Text Mining—As Case of Small and Medium-Sized Supermarkets in Japan

Yumiko Taguchi, Shohoku College, Japan & Tsutomu Tabe, Aoyama Gakuin University, Japan

#### Application of Evidential Dominance to Decision Making in e-Community (Lotus Notes and World Wide Web)

Maung Zaw Aung Htwe & Yasufumi Kume, Kinki University, Japan

#### Modulation of Oscillatory Neural Activities by Cholinergic Activation—Local Field Potential Recording with Computer Models

Pei-Shan Liu, Cheng-Hsien Tsai & Chiou-Min Chen, Soochow University, Taiwan & Chung-Yong Liu, Industrial Technology Research Institute, Tokyo Office, Japan

#### Distortion of Time Estimation as Affected by the Type A Coronary-Prone Behavior Pattern—Application to Mental Workload Evaluation

Atsuo Murata & Kazunari Meguro, Hiroshima City University, Japan, Misoroku Sorai, Nippon Bunri University, Japan & Makoto Moriwaka, Hiroshima City University, Japan

### Accessibility in Japan—Technical Trend and Activity in Japanese Enterprises

#### Trevi

*Chairs: Shin'ichi Fukuzumi, NEC Corporation, Japan & Sakae Yamamoto, Tokyo University of Science, Japan*

#### Japanese Activities for the Accessibility (ISO and Other Activities)

Sakae Yamamoto, Tokyo University of Science, Japan

#### Current Activity and Policy of ISO/IEC JTC1/SC35/WG6 in Japan for Accessibility Guideline

Satoshi Suzuki, Tokyo Metropolitan University, Japan, & Yoshikazu Seki, National Institute of Advanced Industrial Science and Technology, Japan

#### Activities for Accessibility in IBM Japan

Shinji Iizuka & Kohzoh Kitamura, IBM Japan, Japan

#### Universal Design Activities in Fujitsu—Focusing on Web Accessibility Activities

Yukinori Nagano & Yasuaki Takamoto, Fujitsu Ltd., Japan & Tadashi Kobayashi, Fujitsu Information Software Technologies Ltd., Japan

#### Web Contents Accessibility Check Tool

Shin'ichi Fukuzumi, NEC Corporation, Japan

#### Development of the Web Accessibility Tool for Elderly People

Yuichi Takahashi, Daiji Kobayashi & Sakae Yamamoto, Tokyo University of Science, Japan

## HIMI

### Networked Collaboration & Cooperation in Education

Turin

*Chairs: Takashi Mitsuishi, Tohoku University, Japan & Kentaro Go, University of Yamanashi, Japan*

#### Automatic Inspection of Remote Classroom with Network Camera

Yoshitaka Nitta, Aiguo He & Zixue Cheng, The University of Aizu, Japan

#### A Methodology and a System for Scenario-Based Instructional Design of Interactive Instruction with Multimedia Educational Materials

Yuki Higuchi & Takashi Mitsuishi, Tohoku University, Japan & Kentaro Go, University of Yamanashi, Japan

#### Willingness-to-Learn Promotion System for CMC Environments Based on Inter-Personal Relationships

Masateru Hishina, Tokyo International University, Japan, Roberto Okada, Miyagi University, Japan & Katsuki Suzuki, Iwate Prefectural University, Japan

#### Theoretical Framework to Practice Collaborative Learning Among Distant Schools

Tadashi Inagaki, Tohoku-Gakuin University, Japan

#### Are Commonly-Used Email Applications Suitable for Information Literacy Courses?—Development of Seemit and the Practical Use in a University-Wide Course

Makoto Miyazaki & Toshihiro Kita, Kumamoto University, Japan

#### Visualization of Temporal Topic-Flow in Collaborative Learning Environment

Tomoko Kojiri, Kaori Yamaguchi & Toyohide Watanabe, Nagoya University, Japan

#### An Experimental Study on the Effective Use of Mobile Phones in the Large-Scale Classroom Lecture Environment

Tatsunori Matsui, Waseda University, Japan & Fumiaki Sugaya, KDDI R&D Labs, Inc., Japan

## OCSC

### Creating a Sense of Presence in Hybrid Spaces

Tiberius 6

*Chair: Geri Gay, Cornell University, USA*

#### Designing for Interpretation

Phoebe Sengers, Cornell University, USA & Bill Gaver, Royal College of Art, United Kingdom

#### Presence, Community and Immersion in Hybrid Learning Environments

Peggy Odom-Reed, Jeffrey Hancock & Geri Gay, Cornell University, USA

#### Designing for a Sense of Place: Imprints of Presence

Kirsten Boehner, Geri Gay & Helen Hembrooke, Cornell University, USA

#### Social Positioning: Designing the Seams Between Social, Physical and Digital Space

Asa Rudstrom, Kristina Hook & Martin Svensson, SICS, Sweden

#### The Life of the Place: Technology and Communities

John Sherry, Richard Beckwith, Wendy March, Tony Salvador & Steve Barile, Intel Corporation, USA

#### Remote Spaces for Real-Time Collaborative Musical Performance

Michael Schober, New School University, USA

#### A Preliminary Investigation of Alien Presence

Michael Mateas & Mario Romero, The George Institute of Technology, USA

## VR

### Effective Use of VR

Naples

*Chair: Wei Zhang, Tsinghua University, China*

#### The Effect of Background Occlusion and User Perceptual Characteristics on Sickness and Visual Attention During Immersion

Mark Turner, University of Portsmouth, United Kingdom, Steve Love, Brunel University, United Kingdom & Darren Van Laar, University of Portsmouth, United Kingdom

#### A Telepresence System by Using Live Video Projection of Wearable Camera onto a 3D Scene Model

Tomoaki Adachi, Takefumi Ogawa, Kiyoshi Kiyokawa & Haruo Takemura, Osaka University, Japan

#### Dynamic Shared States Management for Distributed Interactive Virtual Environment

Youndong Park, Jinwook Kim, Seulki Kang & Heedong Ko, Korea Institute of Science and Technology, S. Korea & Yoonchul Choi, Yonsei University, S. Korea

#### Haptic Rendering with Six Virtual Cameras

Jong-Phil Kim, Beom-Chan Lee & Jeha Ryu, Gwang-Ju Institute of Science & Technology, S. Korea

#### To Get More Information from 3D VR Virtual Space: A Bodily User Interface

Kai-Ming Yang, National Chiao Tung University, Taiwan

#### User Experiences and Lessons Learned from Developing and Implementing an Immersive Game for the Science Classroom

Tim Marsh, Wee Ling Wong, Eduardo Carriazo, Luciano Nocera, Kiyong Yang, Aditiya Varma, Hyunjin Yoon, Jih-Lun Huang, Chris Kyriakakis & Cyrus Shahabi, University of Southern California, USA

#### Untethered VR Interface with Multi-Directional Force Feedback Based on Air Jets

Minoru Kobayashi & Yuriko Suzuki, NTT Corporation, Japan

#### Integration of Physics Based Simulation with Haptic Interfaces for VR Applications

Jinwook Kim, Irawati Sylvia, Heedong Ko & Hyunggon Kim, Korea Institute of Science and Technology, S. Korea & Makoto Sato, Tokyo Institute of Technology, Japan

# nical Sessions

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EPCE

## Beyond Sight & Sound: Virtual Representation and Multimodal Integration of Cutaneous, Kinesthetic, or Vestibular Cues

### Regalium

*Chairs: Roger Cholewiak & Ben Lawson, Naval Aerospace Medical Research Laboratory, USA*

#### Top-Down and Multi-Modal Influences on Self-Motion Perception in Virtual Reality

Bernhard Riecke, Max-Planck Institute for Biological Cybernetics, Germany, Daniel Vestfjall & Pontus Larsson, Chalmers University of Technology, Sweden & Jorg Schulte-Pelkum, Max Planck Institute for Biological Cybernetics, Germany

#### Virtual Reality Locomotion Interface for the Study of Gait Kinematics

Mohamed Sheik-Nainar, David Kaber & Gary Mirka, North Carolina State University, USA

#### Exploiting the Illusion of Self-Motion (vection) to Achieve Feeling of "Virtual Acceleration" in an Immersive Visual Display

Ben Lawson, Naval Aerospace Medical Research Laboratory, USA

#### The Representation of Space Through Static and Dynamic Tactile Displays

Roger Cholewiak & Kristy Beede, Naval Aerospace Medical Research Laboratory, USA

#### Are Correct Visual Cues Enough for Direct Manipulation of Virtual Objects?

Long Nguyen & Andrew Mead, NAVAIR Orlando TSD, USA, Linda Malone, K. Williams, Cali Fidopiastis & Jannick Rolland, University of Central Florida, USA

#### A Multi-Sensory Integrated Representation Architecture for Notional Display Applications

Anil Raj, Roger Carff, Matthew Johnson, Shriniwas Kulkarni, Jeremy Higgins & Jeffrey Bradshaw, Florida Institute for Human and Machine Cognition, USA

#### Perceptual Tools for Developing Tactile Displays for Virtual Environments

J. Christopher Brill, University of Central Florida, USA, Roger Cholewiak, Naval Aerospace Medical Research Laboratory, USA & Richard Gilson, University of Central Florida, USA

#### Integration of Physics Based Simulation with Haptic Interfaces for VR Applications

Jinwook Kim, Yonsei University, S. Korea, Irawati Sylvia, Heedong Ko & Hyunggon Kim, KIST IMRC, S. Korea & Makoto Sato, Tokyo Institute of Technology, Japan

## Virtual Reality—Modeling & Simulation

### Majestium

*Chair: Ulrich Neumann, University of Southern California, USA*

#### Design and Implementation of Models Generating Tool Software for Manufacturing Systems

Tariq Mujber, Tamas Szecsi & M.S.J. Hashmi, Dublin City University, Ireland

#### The HYPERREAL Design System—Visual Forming of Real Object Using Virtual-Shade Projection

Ichiroh Kanaya, Masaru Hisada, Keiko Yamamoto & Kosuke Sato, Osaka University, Japan

#### A User Model for Prototyping Augmented Reality and Virtual Reality System for Computer

Accessory Maintenance Assistance  
Ng Giap Weng & Fauzan Norsiah, University Malaysia Sarawak, Malaysia, Timothy Ritchings & George Papoulakis, University of Salford, United Kingdom

#### A 3D Model-Based Maintenance Training System for Complex Products with Adaptive Interaction

Wei Dong, Zhizhong Li, Yuhang Yang & Li Zheng, Tsinghua University, China

#### Intelligent HRI Planning in Virtual Reality—Humanoid Home Service Robot for Human-Robot Coexisting: "Robot Gets Closer to Humans"

Jinsul Kim, Hyunsang Ahn, Jihwan Park, Hyunsoo Lee & Yong Hwang, Information and Communication University, S. Korea

#### Distance Estimation in a VR Application: Inter-Individual Differences and Intra-Individual Stabilities from a Psychological Point of View

Claudia Armbruster, Ines Ann Heber, Jakob Valvoda, Torsten Kühlen, Bruno Fimm & Will Spijkers, RWTH Aachen University, Germany

#### THUPS: Two-Handed 3-Dimensional Urban Planning Using a Desktop Workbench System

Peter Vandoren, Chris Raymaekers, Karin Coninx, Maarten Cardinaels & Eddy Flerackers, Limburgs Universitair Centrum, Belgium

## Cognitive Design Models

### Genoa

*Chair: Arthur Fisk, Georgia Institute of Technology, USA*

#### The Effect of Visual Information in Collaborative Troubleshooting

Shun'ichi Yonemura, Masaru Miyamoto, Momoko Nakatani & Katsuhiko Ogawa, NTT Cyber Solutions Labs, Japan

#### A Paradigm of Co-Evolutionary Management: Creative Tension and Brain-Based Company Development Systems

Hannu Vanharanta & Jussi Kantola, Tampere University of Technology, Finland & Waldemar Karwowski, University of Louisville, USA

#### The Effects of Audio Spatial Cue Precision on Target Detection and Identification

Hugo Bertolotti & Thomas Strybel, California State University, Long Beach, USA

#### Designing Narrative Tools for Travellers: What Do We Learn from Activity Analysis?

Anne Bationo, France Telecom R&D, France

#### Using the Lens Model Framework to Characterize Compensatory and Noncompensatory Decision Making Strategies

Ling Rothrock & Jing Yin, The Pennsylvania State University, USA & Alex Kirlik, University of Illinois at Urbana-Champaign, USA

#### Eye Activity Measures of Cognitive Workload: Equating the Baselines of Task Performance

Bradley Chase, University of San Diego, USA, Erik Viirre & Yi-Fang Tsai, University of California, San Diego, USA

#### Using Abstract Functional Information to Offset Incomplete Answers in Troubleshooting

Masaru Miyamoto, Momoko Nakatani & Shunichi Yonemura, NTT Cyber Solutions Labs, Japan

## AC

### Psycho-Physiological Sensor Technologies

#### Tiberius 7

*Chair: Robert Matthews, QUASAR, USA*

#### Postural Measurements: Seated Subjects as Gauges of Cognitive Engagement

Carey Balaban, Jarad Prinkey, Greg Frank & Mark Redfern, University of Pittsburgh, USA

#### A Suite of Physiological Sensors for Assessing Cognitive States

Curtis Ikehara, Martha Crosby & David Chin, University of Hawaii at Manoa, USA

#### Use of Near-Infrared Methods to Augment Cognition

Gabriele Gratton, Kathy Low & Monica Fabiani, University of Illinois at Urbana-Champaign, USA

#### Facial Temperature as a Measure of Operator State

Hans Vettman & Wouter Vos, TNO Human Factors, The Netherlands

#### Robust Feature Extraction and Classification of EEG Spectra for Real-Time Classification of Cognitive State

John Wallerius & Leonard Trejo, Pacific Development and Technologies LLC, USA, Robert Matthews, QUASAR, USA, Roman Rosipal, Austrian Research Institute for Artificial Intelligence, Austria & John Caldwell, Brooks Air Force Base, USA

#### Psycho-Physiological Sensor Technologies: An Overview

Robert Matthews & Neil McDonald, QUASAR, USA & Leonard Trejo, Pacific Development and Technologies LLC, USA

#### Assessing Cognitive Engagement and Cognitive State from Eye Metrics

Sandra Marshall, Eye Tracking, Inc., USA

#### Detection of Human Physiological State Change Using Fisher's Linear Discriminant

Li Yu, Adam Hoover & Eric Muth, Clemson University, USA

### Team Cognition

#### Tiberius 8

*Chair: Nancy Cooke, Arizona State University & CERl, USA*

#### Augmented Team Cognition

Nancy Cooke, Arizona State University & CERl, USA

#### Modeling, Measuring, and Improving Cognition at the Team Level

Frederick Diedrich, Jared Freeman, Elliot Entin, Shawn Weil & Jean MacMillan, Aptima, Inc., USA

#### Social Psychophysiological Compliance as a Gauge of Teamwork

Robert Henning, University of Connecticut, USA, Thomas Smith, University of Minnesota, USA & Kristopher Korbelak, University of Connecticut, USA

#### Tools for Enhancing Team Performance Through Automated Modeling of the Content of Team Discourse

Peter Foltz, Pearson Knowledge Technologies, USA

#### FAUCET: Using Communication Flow Analysis to Diagnose Team Cognition

Preston Kiekel, Cognitive Engineering Research Institute, USA

#### Effect of Decision Support for Distributed Command and Control Teams

Stephen Allen, Emiror, Inc., USA, Christopher Jones, Booz Allen Hamilton, USA & Stephanie Guerlain, University of Virginia, USA

#### Cognition, Teams, and Augmenting Team Cognition: Understanding Memory Failures in Distributed Human-Agent Teams

Stephen Fiore, Florian Jentsch & Eduardo Salas, University of Central Florida, USA & Neal Finkelstein, U.S. Army Simulation & Training Center, USA

## UAHCI

### Quality Models for Human Computer Interaction

#### Claudius 2

*Chair: Ebba Hvannberg, University of Iceland, Iceland*

#### Information Needs: Overcoming Design Barriers Through the Adoption of International Standards

Shane Anderson & Paul Bohman, Utah State University, USA, Oliver Burmeister, Swinburne University of Technology, Australia & Gian Sampson-Wild, PurpleTop, Australia

#### How Helpful is Help? Use of and Satisfaction with User Assistance

Andrew Martin, Melody Ivory, Beverly Slabosky & Rodrick Megraw, University of Washington, USA

#### On Investigating Quality Models of Learning Object Repositories: Case Studies

Effie Law, ETH Zurich, Switzerland

#### ISO/IEC9126-3 Internal Quality Measures: Are They Still Useful?

Witold Suryrn & Blanca Gil, Ecole de Technologie Superieure, Canada

#### Multimodal User Interface Design Increasing the Accessibility to Mathematical Information for Blind Students: A Preliminary Study

Yayoi Shimomura & Ebba Hvannberg, University of Iceland, Iceland

#### Web Site Engagibility: A Step Beyond Usability

Ronan Fitzpatrick, Dublin Institute of Technology, Ireland, Peter Smith, University of Sunderland, United Kingdom & Brendan O'Shea, Dublin Institute of Technology, Ireland

#### Satisfied and Dissatisfied at the Same Time—A Preliminary Two-Factor Theory of User Satisfaction

Timo Jokela, Kari-Pekka Aikio & Ilari Jounila, Oulu University, Finland

#### Empirical Study of Emotions to Improve User Experience Quality in Broadband Access Services

Marianne Jensen, Kari Hamnes, Heidi Rognskog, Nina Khalayli, John Rugelbak, Jan Kristian Rasmussen & Silja Nyhus, Telenor R&D, Norway

### Personalised Interaction for Universal Access

#### Claudius 3

*Chairs: Sherry Chen, Brunel University, United Kingdom; George Magoulas, University of London, United Kingdom; & Robert Macredie, Brunel University, United Kingdom*

#### Perceptual Multimedia Quality: Implications of an Empirical Study

Stephen Gulliver & Gheorghita (George) Ghinea, Brunel University, United Kingdom

#### An Effective Accessibility Improvement Method for Server-Side Java-based Web Applications

Kentarou Fukuda, Hironobu Takagi, Junji Maeda & Chieko Asakawa, IBM Japan, Japan

#### Personalized Tiling Paradigm for Motor Impaired Users

Paul Gnanayutham, University of Portsmouth, United Kingdom

#### Enabling Accessibility and Enhancing Web Experience: Ordering Search Results

According to User Needs  
Alice Good, Jenny Jerrams-Smith & Brett Stevens, Portsmouth University, United Kingdom

#### Mining User Preferred Navigation Patterns: Toward Personalized Learning

Christine Minetou, Sherry Chen & Xiaohui Liu, Brunel University, United Kingdom

#### Design of a Hypermedia Case Study to Enhance Student Learning

Jonathan Foster & Angela Lin, The University of Sheffield, United Kingdom

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## HCI

### Realizing Universal Design Based on Human Centered Design

#### Claudius 4

*Chair: Toshiki Yamaoka, Wakayama University, Japan*

#### Practical 10 Universal Design Guidelines

Toshiki Yamaoka, Wakayama University, Japan

#### Chord Input Arrangement for the Mobile Computer

Fong-Gong Wu, Hsiang-Yin Hung & Chien-Hsu Chen, National Cheng Kung University, Taiwan

#### Cognitive Work Analysis Based on Methodology for Work Systems

Ryota Mori & Toshiki Yamaoka, Wakayama University, Japan

#### Designing E-Books for Commuters: An Application of Universal Design

Rungtai Lin, National Taiwan University of Arts, Taiwan, Yen-Yu Kang, National Kaohsiung Normal University, Taiwan, Chen-Hao Fan & Shao-Yen Wen, National Taiwan University of Arts, Taiwan

#### Practice of Universal Design for a Front-Loading Washing Machine Based on the Human Centered Design Processes

Yoshinori Wakizaka, Kei Tomioka & Hiroyuki Ikemoto, Toshiba Corporation, Japan

#### User-Centered Design Applied to Non Visual Interaction

Bernard Oriola, Alban Hermet & Mathieu Raynal, Université Paul Sabatier, France

#### Datamining of Universal Access Log by Using In-Situ Ergonomics Method

Atsushi Shinya, Shimadzu Corporation, Japan & Toshiki Yamaoka, Wakayama University, Japan

### HCI & Special Populations

#### Claudius 1

*Chair: Jiaying Shen, University of Wisconsin-Madison, USA*

#### Participatory Design of an Inter-Personal and Intergenerational Communication Support with Elderly People

Abir Ghorayeb & Norbert Nourry, CLIPS-IMAG, France

#### Computer Technology Based Interventions for Alzheimer's Caregiving: A Review of the Literature and Implication for Future Study

Jiaying Shen, University of Wisconsin-Madison, USA

#### Enabling Computer Access for Children with Cerebral Palsy

Ting Fang Wu, Chang Chung University, Taiwan, Hwa-Pey Wang, NNTU, Taiwan & Ming Chung Chen, National Chiayi University, Taiwan

#### Facilitating User Feedback in the Design of a Novel Joke Generation System for People with Severe Communication Impairment

Annalu Waller & David O'Mara, University of Dundee, United Kingdom, Ruli Manurung & Helen Pain, University of Edinburgh, United Kingdom & Graeme Ritchie, University of Aberdeen, United Kingdom

#### A Walking Guide for the Blind Using a Scanning Sound Beam Made by Parametric Array Effect

Yoshimichi Yonezawa, Shinshu University, Japan, Toru Makabe, SONY, Japan, Hiroki Mori, Kazunori Itoh & Masami Hashimoto, Shinshu University, Japan

#### SMART HOUSE for the Disabled

Vidas Lauruska, Siauliai University, Lithuania

#### User Linguistic Model Adaptivity for Production in AAC Message Composition

Nicola Gatti, Matteo Matteucci & Licia Sbattella, Politecnico di Milano, Italy

### Accessing Digital Libraries

#### Tiberius 1

*Chair: Tiziana Catarci, University of Rome, Italy*

#### Semantic Organization of Multimedia Data for Meaningful Display

Isabel Cruz & Olga Sayenko, University of Illinois at Chicago, USA

#### Exploiting Ubiquitous Computing to Support Digital Library Tasks

Stephen Kimani & Enrico Bertini, University of Rome, Italy

#### Agent-based Interaction Management for Document-Centered Collaboration in a Digital Library

Ulrich Thiel, Holger Brooks & Adelheit Stein, Fraunhofer-IPSI, Germany

#### User Requirements and Usage Life-Cycle for Digital Libraries

Margherita Antona, Alexandros Mourouzis, George Kartakis & Constantine Stephanidis, FORTH-ICS, Greece

#### Users and Usage Driven Adaptation of Digital Talking Books

Carlos Duarte & Luis Carrico, University of Lisbon, Portugal

### Industrial Perspectives of HCI

#### Tiberius 2

*Chair: Jianming Dong, eBay Inc., USA*

#### Researching the eBay Cross Border Trade User Experience

Maureen Fan, eBay Inc., USA

#### Understanding of Task Interruption Coordination

Chen Zhao, Hui Su, Shaoke Zhang, Tianshu Wang, Qiang Zhang & Zhepeng Wang, IBM China Research Laboratory, China

#### Case Study: Virus Outbreak User Experience in Different Regions

Yanxia Yang, Trend Micro, Inc., USA

#### Designing the e-Commerce User Experience for China

Limin Fu, Jianming Dong & Kelly Braun, eBay Inc., USA

#### Moving Beyond Minimal Accessibility to Ease of Access

Ed Kunzinger, IBM Software Group, USA

## Information Visualization

### Tiberius 3

*Chair: Monique Noirhomme-Fraiture, University of Namur, Belgium*

#### **Visualization in Large Datasets—There's More to It Than Meets the Eye**

Antony Unwin, Augsburg University, Germany

#### **"Guided Cognition" and "Validated Cognition" Approaches in Visual Data Mining**

Michael Bohlen, Free University of Bozen-Bolzano, Italy, Simeon Simoff, University of Technology Sydney, Australia & Arturas Mazeika, Free University of Bozen-Bolzano, Italy

#### **A Cooperative Approach for Scalable Visualization Methods**

Francois Poulet & Lydia Boudjeloud, ESIEA Recherche, France

#### **Visualization of Annual Time Series on PDAs**

Luca Chittaro, University of Udine, Italy, Monique Noirhomme-Fraiture & Frederic Randolet, University of Namur, Belgium

## User Interface Development

### Tiberius 4

*Chair: Sheue-Ling Hwang, National Tsing-Hua University, Taiwan*

#### **From Experience Economy, Brand Image, to User Interface Development**

Shiaw-Tsyr Uang, Ming Hsin University of Science & Technology, Taiwan & Cheng-Li Liu, Vanung University, Taiwan

#### **Developing a Usable Interface of FDAS through Comparing Expert and Novice Knowledge Structures: Using Taiwan Motorcycle Maintenance Staff as an Example**

Kuo-Wei Su, National Kaohsiung First University of Science & Technology, Taiwan, Sheue-Ling Hwang & Yu-Fa Chou, National Tsing-Hua University, Taiwan

#### **An Analysis of Error Rate as a Predictor of User Persistence in Machine Systems**

Ronald Miller, Rustin Terry, Evan Johnson & Don Colton, Brigham Young University-Hawaii, USA

#### **The Fuzzy Control Interface Design of Massage Seat for Alerting Drowsy Drivers**

Cheng-Li Liu, Vanung University, Taiwan & Shiaw-Tsyr Uang, Ming Hsin University of Science & Technology, Taiwan

#### **Annoyance of Noise from Computer Systems: Psychoacoustics and Models**

Andreas Schalin, Lulea University of Technology, Sweden & Bo Schenkman, Gosta Ekman Laboratory, Sweden

#### **What's Wrong with the Games in Mobile Phones? A Heuristic Analysis for Interface Development of Games in Mobile Phones**

Chee Boon Tan & Henry Been-Lirn Duh, Nanyang Technological University, Singapore

#### **Design and Evaluation of a Computerized Operating Procedure System**

Ying-Lien Lee, Sheue-Ling Hwang & Min-Yang Eric Wang, National Tsing Hua University, Taiwan

## Modeling 1

### Tiberius 5

*Chair: Yan Liu, Purdue University, USA*

#### **Interactive Visual Association Rules Modeling**

Yan Liu & Gavriel Salvendy, Purdue University, USA

#### **The 7Cs: An Iterative Process for Generating Pattern Components**

Ashraf Gaffar, Concordia University, Canada

#### **TPO-Based Recommendation Service with Personal Situation Model**

So Kimura & Toshikazu Kato, Chuo University, Japan & Isao Shinohara, Kyodo Printing Co. Ltd., Japan

#### **An Interactive Modeling Approach Using Distributed Processing**

Norihiro Nakamura, Osaka Institute of Technology, Japan, Yuji Teshima, Shizuoka Institute of Science & Technology, Japan, Koji Nishio & Ken-ichi Kobori, Osaka Institute of Technology, Japan

#### **A Dynamic Gesture-Based Docking Simulation System**

Jee-In Kim, Sunjun Park, Jun Lee, Youngjin Choi & Seunho Jung, Konkuk University, S. Korea

#### **Supporting Requirements Reuse in Notification Systems Design Through Task Modeling**

Cyril Montabert, Dillon Bussert, Solomon Gifford, Christa Chewar & D. Scott McCrickard, Virginia Polytechnic Institute & State University, USA

#### **LUCIA: Developing a Comprehensive Information Architecture Process Model**

Arno Reichenauer & Tobias Komischke, Siemens AG, Germany

## Vision-Based Perceptive Interfaces for PC Interaction

### Tiberius 6

*Chair: Marco Porta, University of Pavia, Italy*

#### **Contributing Hand Gestures and Flow Menus in Computer Vision Based Interfaces**

Lars Bretzner, Bjorn Thuresson & Soren Lenman, Royal Institute of Technology (RTH), Sweden

#### **Vision-Based Human-Computer Interaction at VISILab**

Giancarlo Iannizzotto, University of Messina, Italy

#### **Exploiting the Flexibility of Vision-Based User Interaction**

Rick Kjeldsen, IBM TJ Watson Research Center, USA

#### **Multimodal Sensing for Explicit and Implicit Interaction**

Andrew Wilson & Nuria Oliver, Microsoft Research, USA

#### **Social Perception**

Alex Pentland, The MIT Lab, USA

#### **Capturing Human Body Motion from Video for Perceptual Interfaces by Sequential Variational MAP**

Gang Hua & Ying Wu, Northwestern University, USA



# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## E&H

### Does Visual Stress Influence Optometric Parameters and Muscle Load?

#### Palermo

Chair: *Arne Aaras*, Buskerud University College, Norway

### Correlation Between Musculoskeletal Disorders (MSD) and Visual Discomfort

Arne Aaras & Gunnar Horgen, Buskerud University College, Norway

### Do the Luminance Levels of the Surroundings of Visual Display Units (VDU) and the Size of the Characters on the Screen Effect the Accommodation, the Fixation Pattern and the Muscle Load During VDU Work

Gunnar Horgen, Tor Martin Kvikstad, Jan Richard Bruenech, Magne Helland & Arne Aaras, Buskerud University College, Norway

### Eye Blinking—Dry Eyes—VDU (Visual Display Unit) Work

Magne Helland, Buskerud University College, Norway

### The Influence of Accommodation on Progression of Myopia in Children

Trine Langaas, Ellen Svarverud, Irene Langeggen & Jorunn Lid, Buskerud University College, Norway

### Visual Discomfort During VDU Work after LASIK Surgery

Bente Monica Aakre, Buskerud University College, Norway

### The Neuroanatomical Basis for Fine Tuning of Eye Movements During Close Work

Jan Richard Bruenech & Inga-Britt Kjellefold Haugen, Buskerud University College, Norway

### Neuroanatomical Studies of Oculomotor Control

Inga-Britt Kjellefold Haugen & Jan Richard Bruenech, Buskerud University College, Norway

## HIMI

### Human Factors Considerations in Web and Application Design

#### Turin

Chairs: *Robert Proctor*, Purdue University, USA & *Kim-Phuong Vu*, California State University, Northridge, USA

### An Overview of Human Factors in Web and Application Design

Kim-Phuong Vu, California State University, Northridge, USA & Robert Proctor, Purdue University, USA

### Web-based Presentation of Information: The Top Ten Mistakes and Why They Are Mistakes

Thomas Tullis, Fidelity Investments, USA

### User Search Strategy in Web Searching

Xiaowen Fang, DePaul University, USA

### Cross Cultural Web Design

Pei-Luen Patrick Rau, Tsinghua University, China, Yee-Yin Choong, Global eXchange Services, USA & Tom Plocher, Honeywell International, USA

### Understanding Online Consumers: A More Complete Picture

Frederick Volk, SAS Institute & Georgetown University, USA & Frederic Kraft, Grand Valley State University, USA

### Web-based Programs and Applications for Business

Misha Vaughan & Joseph Dumas, Oracle Corporation, USA

### Accessible Java-Application User Interface Design Guidelines

Lawrence Najjar, BMC Software, Inc., USA

### Applications of Knowledge Tools

#### Trevi

Chair: *Tsutomu Tabe*, Aoyama Gakuin University, Japan

### Ontology Based Auditing in Complex Organizations

Andreas Gehrmann & Syohei Ishizu, Aoyama Gakuin University, Japan

### A Robust Facial Edge Extraction under Varying Direction

Hideaki Sato & Katsuhiko Sakamoto, Aoyama Gakuin University, Japan, Yasue Mitsukura, Okayama University, Japan & Norio Akamatsu, University of Tokushima, Japan

### Development of Educational SCM Simulator

Katsuhiko Sakamoto, Yoshiki Nakamura & Hideaki Sato, Aoyama Gakuin University, Japan

### Evaluation Methods of the e-Learning Materials by EEG Topography

Michiko Anse, Tsutomu Tabe & Syohei Ishizu, Aoyama Gakuin University, Japan

### A Strategy Deployment Appraisal Method for Balanced Scorecard by Covariance Structural Analysis

Morihiro Ota, Tsutomu Tabe, Katsuhiko Sakamoto & Ryosuke Inuzuka, Aoyama Gakuin University, Japan & Junichi Watanabe, NEC Corporation, Japan

### Development of a Support Application to Provide an Improved Understanding of "Consumer Movement"

Kosuke Osawa, Michiko Anse & Tsutomu Tabe, Aoyama Gakuin University, Japan

### Development of a Support System for Improving Internet-Store Based on the Consideration of Customer Satisfaction and Text Mining

Yasushi Akiyama, Aoyama Gakuin University, Yumiko Taguchi, Shohoku College, Japan & Tsutomu Tabe, Aoyama Gakuin University, Japan

### HCI in MIS 1

#### Verona

Chair: *Scott McCoy*, College of William and Mary, USA

### How Attribution of Presentation Flaws Affects Users' Website Experience

Andrea Everard, University of Delaware, USA

### Four Studies on Web Delay

Dennis Galletta, Temple University, USA, Ray Henry, Clemson University, USA, Scott McCoy, College of William and Mary, USA & Peter Polak, University of Miami, USA

### Point of Sale Information Tracking: Do Retail Stores Know More About You Than You Want Them To?

Brian Jones, Tennessee Technical University, USA

### 3-D Imaging Accessibility for People with Disabilities

Eleanor Loiacono, Blake Dunkel, Paul Liberman, Jason MacInnes & Glenn Watkins, Worcester Polytechnic Institute, USA

### The Effects of Familiar Logos on Trust of Websites Designed for Small User Interfaces

Paul Lowry, Brigham Young University, USA, Tom Roberts, University of Kansas, USA & Bryce Caine, Brigham Young University, USA

### The Pervasively Low Accessibility Rate of Websites: A Cross-Disciplinary Analysis of Validation Results

Nicholas Romano, Jr., Oklahoma State University

### Derivation and Validation of Optimal Vibration Characteristics for Pleasure and Attention: Implication for Cell Phone Design

Taezoon Park & Wonil Hwang, Purdue University, USA

# Parallel Tech

Wednesday, July 27, 2005 • Afternoon 1:30–3:30 pm

## OCSC

### Collective Creativity in Knowledge Work

#### Pisa

*Chair: Kumiyo Nakakoji, University of Tokyo, Japan*

#### Dynamic Communities in Support of Situated Knowledge Collaboration

Yunwen Ye, SRA Key Technology Lab, Japan & Yasuhiro Yamamoto, University of Tokyo, Japan

#### Patterns to Promote Individual and Collective Creativity

John Thomas, IBM Research, USA

#### Creative Collaboration: Communication, Translation and Generation in the Development of a Computer-Based Artwork

Alistair Weakley, Andrew Johnston, Ernest Edmonds & Greg Turner, University of Technology Sydney, Australia

#### Humane Requirements for Enabling and Nurturing Collective Creativity

Kumiyo Nakakoji, University of Tokyo, Japan

#### Clustering Interaction Histories in Support of Collaboration

Kazuaki Yamada, University of Tokyo, Japan, Yoshiyuki Nishinaka, SRA Key Technology Lab, Japan, Yoshinari Shirai & Kumiyo Nakakoji, University of Tokyo, Japan

#### An Approach to Expressing and Sharing Value in Collaboratively Producing Creative Knowledge Artifacts

Keiji Hirata, Toshihiro Takada, Yasunori Harada & Shigemi Aoyagi, NTT Communication Science Laboratories, Japan, Yasuhiro Yamamoto & Kumiyo Nakakoji, University of Tokyo, Japan

#### From Reflective Practitioner to Reflective Communities

Gerhard Fischer, University of Colorado, L3D, USA

## VR

### 3D User Interface Design and Interaction Techniques in VE

#### Majestium

*Chairs: Doug Bowman, Virginia Tech, USA & Robert Lindeman, The George Washington University, USA*

#### A Tunnel Window and Its Variations: Seamless Teleportation Techniques in a Virtual Environment

Kiyoshi Kiyokawa & Haruo Takemura, Osaka University, Japan

#### Characterizing the Effect of Level of Immersion on a 3D Marking Task

Jurgen Schulze, Andrew Forsberg, Alexander Kleppe, Robert Zeleznik & David Laidlaw, Brown University, USA

#### Baseline Factors for Raycasting Selection

Chadwick Wingrave & Doug Bowman, Virginia Tech, USA

#### Using Vibrotactile Cues for Virtual Contact and Data Display in Tandem

Robert Lindeman, The George Washington University, USA, Robert Page, U.S. Naval Research Laboratory, USA, John Sibert, The George Washington University, USA & James Templeman, U.S. Naval Research Laboratory, USA

#### The Quest for Intuitive 3D Input Devices

Bernd Froehlich, Bauhaus University Weimar, Germany

#### Integrating a Projection-Based Olfactory Display with Interactive Audio Visual Contents

Yasuyuki Yanagida, ATR Media Information Science Labs, Japan, Takuya Adachi & Tsutomu Miyasato, Kyoto Institute of Technology, Japan, Akira Tomono, Tokai University, Japan, Shinjiro Kawato, Haruo Noma & Kenichi Hosaka, ATR Media Information Science Labs, Japan

#### Interactive Digital Patient for Triage Nurse Training

Caroline Ziemkiewicz, Amy Ulinski, Catherine Zambaka, Sonya Hardin & Larry Hodges, University of North Carolina at Charlotte, USA

### VR Applications

#### Regalium

*Chair: Carolina Cruz-Neira, Iowa State University, USA*

#### Enhancing Costume Designer Creativity Utilizing Haptic Interaction in Cloth Editing Applications

Konstantinos Moustakas, Aristotle University of Thessaloniki, Greece, Dimitrios Koutsonanos & Dimitrios Tzovaras, Centre for Research and Technology Hellas, Greece & Michael Strintzis, Aristotle University of Thessaloniki, Greece

#### Artificial Tactile Feel Display for Textile Fabrics

Akinori Yoshida & Satoshi Tadokoro, Kobe University, Japan, Naoki Saiwaki & Maki Taniguchi, Nara Women's University, Japan

#### Effect of Narrow Road Driving Assistance System on Driving Performance

Sheue-Ling Hwang, National Tsing-Hua University, Taiwan & Jian-Ming Chen, AU Optronics Corporation, Taiwan

#### Hybrid Objects—A Concept for the Seamless Integration of 2D and 3D User Interfaces

Stefan Wundrak, Holger Graf, Moritz Goellner & Andre Stork, Fraunhofer-IGD, Germany

#### Simulation of Manual Lifting in Virtual Environments

Yanxin Zhang, Simon Hsiang & Haining Dong, Texas Technical University, USA

#### Basic Hand Gesture Recognition for Human-Computer Communication

Marco Porta & Luca Lombardi, University of Pavia, Italy

#### The Effect of Adding Smell into a Mixed Reality Space: An Experimental Study

Yasuo Yamashita, Keio University, Japan

#### VR in Entertainment

Carolina Cruz-Neira, Iowa State University, USA

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

## U&I

### Cross-Cultural User-Centered Design

#### Naples

*Chair: Supriya Singh, RMIT University/  
Smart Internet Technology CRC,  
Australia*

#### **Innovating for Emerging Markets: Confluence of User, Design, Business and Technology Research**

Girish Prabhu, HP Labs India, India &  
David Frohlich, University of Surrey,  
United Kingdom

#### **Cultural Barriers in the Adoption of Emerging Technologies**

Jenine Beekhuysen, Liisa von Hellens  
& Mark Siedle, Griffith University,  
Australia

#### **The Mobile Phone as the Globalizing Icon of the Early 21st Century**

Christine Satchell & Supriya Singh,  
RMIT University/Smart Internet Tech  
CRC, Australia

#### **Another Culture, Another Method**

Apala Lahiri Chavan, Asia Human  
Factors International, India

#### **Designing for Money Across Borders**

Supriya Singh, RMIT University/Smart  
Internet Tech CRC, Australia

#### **Crossing Cultures: How Understanding “The Other” Can Enhance the Process and Purpose of IT Design**

Paul Turner, University of Tasmania,  
Australia

#### **Designing for Global Markets: The Gender Perspective**

Anita Anand, TCIS India, India

#### **Sociology of ICT: Rural Internet Kiosks as “Shared Space”**

Nimmi Rangaswamy, Microsoft  
Research India, India

## EPCE

### Cognitive Work Analysis and Design

#### Genoa

*Chair: Michelle Rogers, VA GAPS Center,  
USA*

#### **A Study to Develop Public Work Environment Design Guidelines for Handling Personal Information**

Shigeyoshi Iizuka, Katsuhiko Ogawa &  
Shinya Nakajima, NTT Cyber Solutions  
Labs, Japan

#### **Migrating Collaborative Work in Healthcare to Electronic Environments**

Michelle Rogers & Marta Render, VA  
GAPS Center, USA & Patricia Ebright,  
Indiana University School of Nursing,  
USA

#### **Contextual Factors in Household Products: A Study of User Characteristics for the Case of Washing Machine Usability**

Zeynep Karapars & Cigdem Erbug,  
Middle East Technical University,  
Turkey

#### **“Walk Up and Use”—HFE Considerations in the Design of Retail Self Service Devices**

Kate Cook & Stefan Faulkner, Wincor  
Nixdorf Ltd., United Kingdom

#### **Text-Background Color Combinations and Chinese Scripts Reading on Mobile Phone**

Zhang Guangqiang, Yang Winnie  
Wanli, Baihong Chen, Yang Rong & Li  
Yan, User Research Center of Legend  
Corporation R&D, China

#### **Encountering Computer-Supported Cooperative Work via the Living Lab: Application to Emergency Crisis Management**

Michael McNeese, Erik Connors,  
Rashaad Jones, Ivanna Terrell, Tyrone  
Jefferson, Jr., Isaac Brewer & Priya Bains,  
The Pennsylvania State University, USA

# Parallel Tech

Wednesday, July 27, 2005 • Afternoon 4–6 pm

AC

## Transforming Sensors into Cognitive State Gauges

**Tiberius 7**

*Chair: Richard Barker, The Boeing Company, USA*

### Transforming Sensors into Cognitive State Gauges

Richard Barker, The Boeing Company, USA

### Feature Saliency Analysis for Operator State Estimation

Chris Russell & Glenn Wilson, Air Force Research Lab, USA

### Comparing Classifiers for Real Time Estimation of Cognitive Workload

Chris Russell & Glenn Wilson, Air Force Research Lab, USA, Mateen Rizki, Wright State University, USA, Timothy Webb & Steven Gustafson, Air Force Institute of Technology, USA

### EEG Indices Distinguish Spatial and Verbal Working Memory Processing: Implications for Real-Time Monitoring in a Closed-Loop Tactical Tomahawk Weapons Simulation

Chris Berka, Daniel Levendowski, Gene Davis, Michelle Lumicao & Caitlin Ramsey, Advanced Brain Monitoring Inc., USA, Kay Stanney & Leah Reeves, University of Central Florida and Design Interactive, Inc., USA, Patrice Tremoulet & Susan Harkness Regli, Lockheed Martin Advanced Technologies Labs, USA

### Statistical Process Control as a Triggering Mechanism for Augmented Cognition Mitigations

Jerry Tollar, The Boeing Company, USA

### From Disparate Sensors to a Unified Gauge: Bringing Them All Together

James Weatherhead & Sandra Marshall, Eye Tracking, Inc., USA

### Construction of Appropriate Gauges for the Control of Augmented Cognition Systems

Andrew Belyavin, QinetiQ Ltd., United Kingdom

## Future Applications of Augmented Cognition

**Tiberius 8**

*Chair: Henry Girolamo, US Army Soldier Systems Center, USA*

### Augmented Cognition for Warfighters: A Beta Test for Future Applications

Henry Girolamo, U.S. Army Soldier Systems Center, USA

### AugCogifying the Army's Future Warfighter

Patricia Ververs, Stephen Whitlow, Michael Dorneich & Santosh Mathan, Honeywell Laboratories, USA & James Sampson, U.S. Army Natick Soldier Center, USA

### Augment Cognition for Fire Emergency Response: An Interactive User Study

Daniel Steingart, Joel Wilson, Russell Romero, Lloyd Lim, Andrew Redfern, Colin Patton & Paul Wright, University of California, Berkeley, USA

### An Intelligent Deception Verification System

Donald DuRousseau, Human Bionics LLC, USA

### Augmented Higher Cognition: Enhancing Speech Recognition Through Neural Activity Measures

Erik Viirre & Tzyy-Ping Jung, University of California, San Diego, USA

### Augmented Cognition for Bioinformatics Problem Solving

Olga Anna Kuchar & Jorge Reyes-Spindola, Pacific Northwest National Lab, USA & Michel Benaroch, Syracuse University, USA

### Fire Information and Rescue Equipment: Enhanced Decision-Making and Situational Awareness Equipment

Joel Wilson, University of California, Berkeley, USA

UAHCI

## Physiologically Based Human Computer Interfaces

**Claudius 3**

*Chairs: Guido Kempter & Walter Ritter, Vorarlberg University of Applied Sciences, Austria*

### Evolutionary Feature Detection in Interactive Biofeedback Interfaces

Guido Kempter, Walter Ritter & Miglena Dontschewa, Vorarlberg University of Applied Sciences, Austria

### Non-Invasive Physiological Sensing for Human-Aware Interfaces

Michael Sung, Massachusetts Institute of Technology, USA & Alex Pentland, The MIT Laboratory, USA

### Physiological Measures in Virtual Environments

Michael Meehan & Anuja Antony, Stanford University, USA

### Using Psychophysiological Signals in a User-Adaptive Personal Assistant

Boris Brandherm, Margeritta von Wilamowitz-Moellendorff, Tim Schwartz & Michael Schmitz, Saarland University, Germany & Holger Schultheis, University of Bremen, Germany

### An Agent Framework for the Development of Psychophysiological Interactive Systems

Toni Vanhala & Veikko Surakka, University of Tampere, Finland

Wednesday • 4–6 pm

# nical Sessions

Refreshment breaks are in Exhibition Hall • Morning (10-10:30 am) & afternoon (3:30-4 pm)

HCI

## Accessibility for Users with Special Needs 1— Enhancing Lifestyles for the Elderly

### Claudius 2

*Chairs: Asimina Vasalou, Imperial College London, United Kingdom & Dyi-Yin Michael Lin, I-Shou University, Taiwan*

#### Interface Design for Older Adults: Findings from the Center for Research and Education on Aging and Technology Enhancement (CREATE)

Neil Charness, Florida State University, USA, Sara Czaja & Joseph Sharit, University of Miami, USA, Wendy Rogers & Arthur Fisk, Georgia Institute of Technology, USA

#### Comparing Shopping Performances Between Older and Young Adults in a Virtual-Reality Digital Mall

Dyi-Yih Michael Lin & Po-Hui Lu, I-Shou University, Taiwan

#### Picture Health: Using Personal Photo Diaries to Improve Diabetes Self-Management

Jeana Frost, MIT Media Lab, USA, Meltem Albayrak & Brian Smith, The Pennsylvania State University, USA

#### Sensing to Support Peace of Mind: An Iterative Design for the Digital Family Portrait

Jim Rowan & Elizabeth Mynatt, Georgia Institute of Technology, USA

#### Non-Verbal Acoustic Control of Mouse Cursor (U3I): A Usability Study with the Elderly

Adam Sporka, Czech Technical University in Prague, Czech Republic, Sri Hastuti Kurniawan & Murni Mahud, University of Manchester, United Kingdom & Pavel Slavik, Czech Technical University in Prague, Czech Republic

#### Prompting and Feedback Displays to Support the Morning Routines of Elders

Jay Lundell, Intel Corporation, USA & Gillian Hayes, Georgia Institute of Technology, USA

#### Electronic Travel Booking, the Evaluation of Usability, Accessibility and Fitness for Purpose by Older People and People with Disabilities

Gill Whitney, Suzette Keith & Irena Kolar, CIRCUIA, Middlesex University, United Kingdom

## Rich User Interactions with Mobile Devices and Systems

### Claudius 4

*Chair: Stephen Kimani, University of Rome, Italy*

#### A Diner's Guide to Evaluating a Framework for Ubiquitous Computing Applications

Mary Theofanos & Jean Scholtz, National Institute of Standards & Technology, USA

#### Handheld Assistive Technology in Museums: The Evolution of the Digital Guide

Jennifer Martin, IBM, USA

#### Usability Requirements for Mobile Service Scenarios

Lucia Terrenghi, LMU Universitat Munchen, Germany, Marcus Kronen & Carla Valle, Fraunhofer-FIT, Germany

#### Comparative Handset Usability: Mobile Media Download and Installation

Scott Weiss, Usable Products Company, USA

#### Scenarios in Ubiquitous Computing System Design: User-Driven vs. Technology-Driven Usages

Veikko Ikonen, VTT Information Technology, Finland

#### Designing Mona: User Interactions with Multimodal Mobile Applications

Lynne Baillie, Raimund Schatz, Rainer Simon, Hermann Anegg, Florian Wegscheider & Georg Niklfeld, FTW, Austria & Alexander Gassner, Siemens, Germany

#### Testing Accessibility in Mobile Computing

Laura Murzagli, Marco Billi, Francesco Gabbanini, Paolo Graziani & Enrico Palchetti, CNR-IFAC, Italy

## HCI in the Medical Field

### Tiberius 1

*Chair: Ben-Tzion Karsh, University of Wisconsin-Madison, USA*

#### Domain-specific Computer-Aided Requirements Elicitation and Validation (CAREV): Critical Role in Fetal Heart Rate Analysis

Mark Dixon, University of Plymouth, United Kingdom

#### Nomadic Nurse: Toward Optimizing Home Healthcare with Voice Interaction

Junius Gunaratne, Siemens Corporate Research, Germany

#### Cognitive Errors in Medical Diagnosis: Designing a Useful Decision Support System

Gitte Lindgaard, Carleton University, Canada

#### Information Visualization of Allelic Copy Number Data for Genome Imbalance Analysis

Kunihiro Nishimura, Shumpei Ishikawa, Koichi Hirota, Hiroyuki Aburatani & Michitaka Hirose, The University of Tokyo, Japan

#### Hand-held Psychotherapy Artifacts

Luis Carrico & Marco So, University of Lisbon, Portugal

#### Assessment of Physiological Measures for Affective Computing Interventions in Radiologists' Workspace

James Lin, Siemens Corporate Research, USA, Chandra Harrison, City University London, United Kingdom, Xianjun Zheng & April McGee, Siemens Corporate Research, USA

## HCI

### Interactive Edutainment Applications

#### Tiberius 2

*Chair: Sepideh Chakaveh, Fraunhofer-IMK, Germany*

#### **From Passive Viewer to Nomad Producer: Ubiquitous iTV**

Anxo Cereijo Roibas, University of Brighton, United Kingdom, Riccardo Sala, The Times Online, United Kingdom & Manuela Brandao, University of Brighton, United Kingdom

#### **Interactive TV and User Experience—Does Interactivity Contribute to a Greater Television User Experience? A Human Computer Perspective**

Petter Bae Brandtzaeg, Jan Heim & Asbjorn Folstad, SINTEF ICT, Norway

#### **New Interactive Broadcasting Formats**

Olaf Geuer, Fraunhofer-IMK, Germany

#### **Edutainment Game Design for Mobile Digital Television**

Sonja Kangas, Technical Research Centre of Finland, Finland

#### **e-iTV: Online Learning Environment Generator System for Interactive Television**

Alcina Prata, Escola Superior de Ciencias Empresariais, Portugal

#### **Interactive Applications Based on Multimedia Home Platform (MHP)**

Heike Fischer, Fraunhofer-IMK, Germany

#### **User Interface Realism: Ambient Utility Games Challenge Edutainment Applications**

Sepideh Chakaveh, Fraunhofer-IMK, Germany

### Transportation

#### Tiberius 3

*Chair: Sheue-Ling Hwang, Tsing-Hua University, Taiwan*

#### **An Integrated Approach to Virtual Tape Drawing for Automotive Design**

Pedro Santos & Andre Stork, Fraunhofer-IGD, Germany, Rodrigo Fiipe & Jorge Joaquim, Technical University of Lisbon, Portugal

#### **Menu Selection Based on Haptic and/or Graphic Information**

Camilla Grane & Peter Bengtsson, Lulea University of Technology, Sweden

#### **An Intelligent Augmented Environment for the Contents of Street Signs**

Timothy Ritchings, George Papoulakis & Apostolos Antonacopoulos, University of Salford, United Kingdom

#### **A Study of the Parking-Training Simulator in the Environment of Virtual Reality**

Tsang-Wei Lin & Sheue-Ling Hwang, National Tsing-Hua University, Taiwan

#### **Human Operational Errors: A Virtual Driver's Simulation**

Toru Nakata, Altion Simo, Koji Kitamura & Takeo Kanade, National Institute of Advanced Industrial Science & Technology, Japan

#### **A Robust, Context-Adaptive and Multimodal Search Engine for Efficient Information Retrieval in Car Environments**

Markus Ablassmeier, Gregor McGlaun, Gerhard Rigoll, Tony Poitschke & Juergen Gast, TU Munich, Germany

#### **Methodologies for Driver-Centred Evaluation of Perceptive and Cognitive Requirements of In-Vehicle Display**

Annie Pauzie, INRETS/LESCOT, France

### Modeling 2

#### Tiberius 4

*Chair: Anita Komlodi, University of Maryland Baltimore County, USA*

#### **Exploiting Semantics and User Modeling for Enhanced User Support**

Liana Razmerita, INRIA, France

#### **Using Modelling to Put HCI Design Patterns to Work**

Russell Beale & Behzad Bordbar, University of Birmingham, United Kingdom

#### **Evaluating the Benefit of Modeling Notations on the Quality of PLC-Programming**

David Friedrich & Birgit Vogel-Heuser, University of Wuppertal, Germany

#### **Integrating Interaction and Service Workflow Models by Object-Orientation**

Thomas Schlegel, Fraunhofer-IAO, Germany

#### **The Information-Technology-People Abstraction Hierarchy: A Modeling Tool for Situation-Scaling Information Systems**

Arthur Jones & Michael McNeese, Penn State University, USA

#### **UMAR: A Modeling of Multimodal Artifact**

Laurent Le Bodic & Pierre De Loor, CERV, France & Julien Kahn, France Telecom RD, France

#### **IDM—A User-Centered Model Shaping User Interaction as a Dialogue**

Davide Bolchini, Nicola Piccinotti, Giovanni Randazzo & Daniele Gobbetti, University of Lugano, Switzerland

### Ergonomics and Health Aspects of Work with Computers

#### Naples

*Chair: Dieter Spath, Fraunhofer-IAO, Germany*

#### **Eye-Controlled Applications—Opportunities and Limits**

Wolfgang Beinhauer, Fraunhofer-IAO, Germany, Roman Vilimek & Anke Richter, Siemens AG, Germany

#### **Ambient Amenities—Smart Interfaceless Assistance**

Dieter Spath, Wolfgang Beinhauer & Frank Heidmann, Fraunhofer-IAO, Germany

#### **Multi-Disciplinary Teams in User Centered Development Processes**

Markus Turber, Intuity Media Lab GmbH, Germany

#### **Safeness and More Comfortable Living for the Elderly—Interaction Design for an Intelligent Domestic Control Device**

Brigitte Ringbauer, Fraunhofer-IAO, Germany

#### **The Empirical Office 21<sup>o</sup>-Study "Soft Success Factors"**

Alexander Rieck & Jorg Ketter, Fraunhofer-IAO, Germany

#### **Incidence of Self-Reported Reduced Productivity Due to Musculoskeletal Symptoms Among White Collar Computer Users**

Mats Hagberg & Rebecka Vilhelmsson, Sahlgrenska Academy and University Hospital, Sweden, Eva Tornqvist & Allan Toomingas, NIWL Stockholm, Sweden

# nical Sessions

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E&H

## Activity Theory

### Palermo

*Chairs: Gregory Bedny, Essex County College, USA & Waldemar Karwowski, University of Louisville, USA*

#### The Task as a Basic Object of Study in HCI System

Gregory Bedny, Essex County College, USA, Olexiy Chebykin, South Ukrainian K. Ushinskiy State Pedagogical University, Russia & Waldemar Karwowski, University of Louisville, USA

#### The Principle of Unity of Cognition and Behavior in the Study of Human Computer Interaction Tasks

Tirthankar Sengupta, New Jersey Institute of Technology, USA, Waldemar Karwowski, University of Louisville, USA & Gregory Bedny, Essex County College, USA

#### Evaluating the Usability of Visual Programming Environments for Educational Robotics: An Activity Walkthrough Approach

Steven Harris & Mike Reddy, University of Glamorgan, United Kingdom

#### Analysis of Student's Functional State During Computer Training

Ludmila Chainova, All-Russia Research Institute of Industrial Art, Russia, Diliara Yakovetc, Astrakhan State Technical University, Russia, Inna Bedny, The Pedagogical University of S. Ukraine, Russia & Gregory Bedny, Essex County College, USA

#### Intelligent Medical Diagnosis System Using the Fuzzy Systems

Yasue Mitsukura, Okayama University, Japan & Witold Pedrycz, University of Alberta, Canada

#### Investigating Interaction Breakdown: A Systemic-Structural Activity Approach to the Analysis of HCI Field Data

Steven Harris, University of Glamorgan, United Kingdom

HIMI

## Measurement and Analysis of Driver's Behavior

### Turin

*Chairs: Yoshinori Horie, Nihon University, Japan & Mieko Ohsuga, Osaka Institute of Technology, Japan*

#### Driver's Psycho-Physiological Reaction for Driving Support System

Yoshinori Horie, Nihon University, Japan

#### HR Triggered Extraction of Driving Scenes with Danger and Difficulties Using Driving Simulator

Yukiyo Kuriyagawa, Nihon University, Japan, Mieko Ohsuga, Osaka Institute of Technology, Japan, Ichiro Kageyama & Yoshinori Horie, Nihon University, Japan

#### Evaluating Driver's Visual Behavior While Driving on Highway

Akihiko Takahashi, Toshihisa Sato & Motoyuki Akamatsu, National Institute of Advanced Science & Technology, Japan

#### Evaluation of Driver's State of Tension

Kiyomi Sakakibara & Toshiyuki Taguchi, TOYOTA Central R&D Labs, Inc., Japan

#### A Voice Activity Detection Using Driver's Lip Image for Bimodal Speech Recognition System in Automobile

Yoshihiro Noguchi & Keiji Shimada, Asahi Kasei Corporation, Japan

#### A Startled-Sensor for Traffic Safety Management

Kohzoh Yoshino, National Institute of Advanced Industrial Science & Technology, Japan, M. Edamatsu & M. Yoshida, Osaka Electro-Communication University, Japan & K. Matsuoka, National Institute of Advanced Industrial Science & Technology, Japan

#### Construction of Driver Model to Analyze Driver Behaviour—Application to Analysis of Alcoholic Driver

Ichiro Kageyama, Nihon University, Japan, Magnus Hjalmdahl, Lena Nilsson & Bjorn Peters, Swedish National Road & Transport Research Institute, Sweden

## Human Interfaces for Risk Communication

### Trevi

*Chairs: Hidekazu Yoshikawa, Kyoto University, Japan & Mariko Nakamura, NTT Energy and Environment Systems Laboratories, Japan*

#### Asymmetric Communication Mode which is Suitable for Collaboration Between Remotely Located Participants in Emergency Situations

Tadashi Tanaka, Hitachi Ltd., Japan

#### Building Progressive Interest in Risk Communication

Mariko Nakamura, Satoru Yamaguchi & Yasuyuki Sugiyama, NTT Energy & Environment Systems Labs, Japan & Masako Itoh, Tokiwa University, Japan

#### Development of Computerized Debate Support System and its Application for Real Lecture for Graduate School Students

Hidekazu Yoshikawa, Hiroshi Shimoda, Tomotake Imaki & Taijiroh Hongo, Kyoto University, Japan & Kyoko Ito, Osaka University, Japan

#### MFMS: A Graphical MFM Tool and its Application to Industrial Process System

Yangping Zhou, Hidekazu Yoshikawa, Jingquan Liu, Jun Ouyang & Ming Yang, Kyoto University, Japan

#### Affective Information Presentation Toward Online Active Risk Communication on High Level Radioactive Waste Disposal

Kyoko Ito, Osaka University, Japan, Yasunaga Wakabayashi, Kyoto University, Japan, Akihide Kugo, Kansai Electric Power Co., Inc., Japan, Akinobu Uda, Tomotaka Imaki, Hiroshi Shimoda & Hidekazu Yoshikawa, Kyoto University, Japan

#### The Effect of Bilateral Risk Communication on the Web with Multi-Layered Ethical Contents on High-Level Radioactive Waste Disposal

Akihide Kugo, Kansai Electric Power Co., Inc., Japan, Hidekazu Yoshikawa, Hiroshi Shimoda, Tomotaka Imaki, Akinobu Uda & Yasunaga Wakabayashi, Kyoto University, Japan & Kyoko Ito, Osaka University, Japan

#### Analysis of Questionnaires Regarding Safety of Drug Use Application of Text Mining to Free Description Questionnaires

Masaomi Kimura, Shibaura Institute of Technology, Japan, Hiroyuki Furukawa, Kanazawa University Hospital, Japan, Hitoshi Tsukamoto, Hisao Tasaki & Masahiro Kuga, TOA Eiyo Ltd., Japan & Michiko Ohkura, Shibaura Institute of Technology, Japan

## HIMI

### HCI in MIS 2

Verona

*Chair: Fiona Nah, University of Nebraska-Lincoln, USA*

#### **Task in HCI Research in the Management Information Systems (MIS) Literature: A Critical Survey**

Ping Zhang & Ugur Eseryel, Syracuse University, USA

#### **Cultural Fit as User's Perceptual Lens: Focusing on Mobile Internet Users' Post-Adoption Behavior**

Inseong Lee, Boreum Choi & Jinwoo Kim, Yonsei University, S. Korea

#### **Implications of Mobile Education**

Keng Siau, Fiona Fui-Hoon Nah & Hong Sheng, University of Nebraska-Lincoln, USA

#### **The Visualization of an Expert System's Rule Base**

Robbie Nakatsu, Loyola Marymount University, USA

#### **Personalization of Web Services: A Study on the Fit Between Web Tasks and Personalization Mechanisms**

Fiona Fui-Hoon Nah, Keng Siau & Min Ling, University of Nebraska-Lincoln, USA

#### **Measurement of User Satisfaction with an Intranet Site and its Relationship with the Usage**

Mei Lu & E.C. Mueller, Intel Corporation, USA

## OCSC

### Community Informatics: Beyond "Users" to "Communities": Designing Systems as Though "Communities" Matter

Claudius 1

*Chairs: Fiorella De Cindio, University of Milan, Italy & Michael Gurstein, New Jersey Institute of Technology, USA*

#### **Communities of Sovereign People as "Everyman" in Online Public Services**

Fiorella De Cindio & Anna Laura Ripamonti, University of Milan, Italy

#### **Towards a Design Theory for Community Information Systems**

Aldo de Moor, STARLab, Vrije Universiteit-Brussel, Belgium

#### **Making Use of Scenarios for Achieving Effective Use in Community Computing Contexts**

Roderick Lee, Cecelia Merkel, Craig Ganoe & Wendy Schafer, The Pennsylvania State University, USA, Karen James, Pennsylvania Museums and Historical Commission, USA, Mary Beth Rosson & John Carroll, The Pennsylvania State University, USA

#### **Community Inquiry and Collaborative Practice: The iLabs of Paseo Boricua**

Ann Bishop & Bertram Bruce, University of Illinois, USA

#### **A Design Theory Approach to Community Informatics: From Kernel Concepts and Social Applications**

Dave Bourgeois, Biola University, USA & Thomas Horan, Claremont Graduate University, USA

#### **Localizing ICTs for Community Benefit: A Role for MNCs**

Tony Salvador, John Sherry & Kenneth Anderson, Intel Corporation, USA

#### **Towards Supporting Community Information Seeking and Use**

Nkechi Nnadi & Michael Gurstein, New Jersey Institute of Technology, USA

## VR

### Virtual Reality—Design

Majestium

*Chair: Mary Whitton, University of North Carolina at Chapel Hill, USA*

#### **Gestural Medial 3D Freeform User Interfaces with Standard 2D Input Devices**

Eva-Maria Michelcic, Siemens AG, Germany

#### **MMK: 3D Manipulation Using Macro-Micro Kinematics**

Mourad Bouzit, Rutgers University, USA, Biing-Hwang Juang & Ghassan AlRegib, Georgia Institute of Technology, USA

#### **Developing Interaction Devices with 6 DOF for Virtual Environments**

Oliver Stefani, COAT-Basel, Switzerland, Brenda Wiederhold, Interactive Media Institute, USA, Frank Haselberger, Institute for Human Factors & Technology Management, Germany, Ioannis Karaseitanidis, NTUA, Greece, Harshada Patel, University of Nottingham, United Kingdom & Alex Bullinger, COAT-Basel, Switzerland

#### **3D Direct Manipulation Interface by Human Body Posture and Gaze**

Kazuya Takaki & Daiisaku Arita, Kyushu University, Japan, Satoshi Yonemoto, Kyushu Sangyo University, Japan & Rin-ichiro Taniguchi, Kyushu University, Japan

#### **Simulating Humanoid Agent in Virtual City**

Cheng-Yu Lu, National Chiao-Tung University, Taiwan

#### **Transparent Sphere: A New Three-Dimensional Interaction Technique**

Nguyen-Thong Dang, Ecole Pratique des Houttes Etudes, France & Vu Duong, EUROCONTROL Experimental Centre, France



# nical Sessions

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## U&I

### Virtual and Immersive Environments

#### Regalium

*Chair: Mel Slater, University College London, United Kingdom*

#### An Augmented Virtuality Environment for 3D Interaction with Volumetric Data

Wen Qi & Jean-Bernard Martens, Eindhoven University of Technology, The Netherlands

#### The Potential Societal Impact of Virtual Reality

Mark Koltko-Rivera, Professional Services Group, Inc., USA

#### Methodical Preservation of Technical Knowledge by Computerized 3D-Figure Visualization

Regina Beuthel, TU Darmstadt, Germany

#### Effects of Visual and 3D Sound Feedback on Assembly Task Performance in a Virtual Environment

Ying Zhang & Reza Sotudeh, University of Hertfordshire, United Kingdom & Terrence Fernando, University of Salford, United Kingdom

#### Development of High Presence Immersive Environments with Intuitive Objects Manipulation Using Body Action

Tadayuki Takeda, Masataka Imura, Yoshihiro Yasumuro, Yoshitsugu Manabe & Kunihiro Chihara, Nara Institute of Science & Technology, Japan & Hiroshi Sasaki, Kobe University, Japan

#### The Importance of Usability in Product Development of Machines Controlled Through Displays

Katarina Patt & Juha Ainoi, Helsinki University of Technology, Finland

### VR Models

#### Pisa

*Chair: Sunil Lakhiani, University of Wisconsin-Madison, USA*

#### TOTEM: An Engine for Task-Oriented Multimodal Rendering in Virtual Environments

Guillaume Bouyer, Patrick Boudot & Jean-Marc Vezien, LIMSI-CNRS, France

#### Generalized Performance Evaluation for Haptic Force Feedback Interfaces: A Review of Tactile Sensing for Object Recognition

Mansour Rahimi & Greg Placencia, University of Southern California, USA

#### AMIRE-ES: Authoring Mixed Reality Once, Run it Anywhere

Michael Haller, Upper Austria University of Applied Sciences, Austria, Erwin Stauder, Software Competence Center, Austria & Juergen Zauner, Upper Austria University of Applied Sciences, Austria

#### BilliARds: Augmented Reality System with Wearable Force-Feedback Device

Usman Sargaana, Woontack Woo, Hossein Shahrabi Farahani & Jeha Ryu, Gwang-Ju Institute of Science and Technology, S. Korea & Jongweon Yungwon Lee, Sejong University, S. Korea

#### IRVO: An Interaction Model for Designing Collaborative Mixed Reality Systems

Rene Chalon & Bertrand David, ICTT-Ecole Centrale de Lyon, France

#### VARAMM: Mental Model of Remote Communication

Hideaki Shimada, Muneo Kitajima & Osamu Morikawa, National Institute of Advanced Industrial Science & Technology, Japan

### Cultural Difference and Ergonomic Design

#### Tiberius 5

*Chairs: Ravindra Goonetilleke, Hong Kong University of Science & Technology, Hong Kong & Alan Chan, City University of Hong Kong, Hong Kong*

#### The Cultural Effects of Time Usage and Process Complexity on Control Performance

Yan Zhang & Ravindra Goonetilleke, Hong Kong University of Science & Technology, Hong Kong

#### A Comparative Analysis of Color Associations for Different Regional Populations

Rui Feng Yu, Tsinghua University, Taiwan, Alan Chan, City University of Hong Kong, Hong Kong, Y. Shen, Tsinghua University, Taiwan, Sung Han, Pohang University of Science & Technology, S. Korea & Suebsak Nanthavanij, Thammasat University, Thailand

#### Differences in the Perceived Affective Satisfaction Among Users with Different Nationalities: A Case Study on Mobile Phones

Sang Hong & Sung Han, Pohang University of Science & Technology, S. Korea & Alan Chan, City University of Hong Kong, Hong Kong

#### Evaluating the Cultural Fitness of User Interface: An Analysis Paradigm for In-Vehicle Information Systems Display

Myunghwan Yun, Seoul National University, S. Korea, Steven Johnson, University of Arkansas, USA, Dongjoon Kong, The University of Tennessee, USA, Jonghyun Park & Inki Kim, Seoul National University, S. Korea

#### The Study of Cultural Interface in Taiwan Aboriginal Twin-Cup

Tyan-Yu Wu & Hong Cheng, Chang Gung University, Taiwan & Rungtai Lin, National Taiwan University of Arts, Taiwan

#### Physical Health Problems Related to Computer Use in Hong Kong

Grace Szeto, The Hong Kong Polytechnic Institute, Hong Kong

#### Development of a Trilingual Ergonomics Knowledge and Intelligent Design System (EKIDES)

Ryoko Fukuda, Keio University, Japan, Iwona Jastrzebska-Fraczek, Heiner Bubb & Heinz Schmidtke, Technische Universitat Munchen, Germany

#### HCI Culture Involvement in Industrial Products: Tools Proposition

Pierre-Henri Dejean, Universite de Technologie de Compiègne, France

HIMI

## Usability and Internationalization

### Tiberius 6

*Chair: E.F. Sheridan, Web of Culture, USA*

#### **Correlation Between the Gazing Point Movement and Usability for the Purpose of Web Page Selection Containing Usability Problems**

Shota Fukushima & Noboru Nakamichi, Nara Institute of Science & Technology, Japan, Makoto Sakae, SRA Key Technology Laboratory, Inc., Japan, Kazuyuki Shima, Hiroshima City University, Japan & Ken-Ichi Matsumoto, Nara Institute of Science & Technology, Japan

#### **Increasing Usability Through Standards: Generic User Interface Elements for Mobile Terminals and Services**

Martin Bocker, Siemens AG, Germany, Bruno Von Niman, vonniman consulting, Sweden, Matthias Schneider-Hufschmidt, Siemens AG, Germany, Riitta Jokela, Nokia, Finland, Mike Pluke, Caslte Consulting, Ltd., United Kingdom & Kristoffer Aberg, Sony Ericsson Mobile Communications AB, Sweden

#### **Emotional Usability Model: Impacts of Interface Elements on the Emotions of Digital Television**

Jungwon Lee, Samsung Electronics Co., Ltd., S. Korea

#### **Usability Testing: A Collaborative Approach**

Cigdem Erbug, Middle East Technical University, Turkey, Jelle Attema & Arnold Vermeeren, Delft University of Technology, The Netherlands, Martin Maguire, University of Loughborough, United Kingdom, Ali Berkman, Middle East Technical University, Turkey & Deana McDonagh, University of Illinois at Urbana-Champaign, USA

#### **The Impact of Culture on Website-Navigation Behaviour**

Anett Kralisch & Bettina Berendt, Humboldt University Berlin, Germany & Martin Eisend, Free University Berlin, Germany

#### **Asynchronous Distributed Knowledge Space and Cultural Nuances**

Mungai Andrew Gichuho & Thorsten Hampel, LIMSI-CNRS, France

EPCE

## Engineering Psychology

### Genoa

*Chair: Youngho Rhee, Samsung Electronics, S. Korea*

#### **The Importance of Risk Communication in Study Risk and Safety**

Hilja Taal, Tallina University of Technology, Estonia

#### **Tailoring Training Through the Use of Concept Mapping: An Investigation into Improving Pilot Training**

A. William Evans, III, Raegan Hoeft, Janeen Kochan & Florian Jentsch, University of Central Florida, USA

#### **Economic Assessment of Human Error in Semiconductor Manufacturing Environment**

Hunszu Liu, Ming Hsin University of Science & Technology, Taiwan, Sheue-Ling Hwang, National Tsing-Hua University, Taiwan & Thu-Hua Liu, Chang Gung University, Taiwan

#### **Experimental Investigation of Relation Between Information Flow of Diagnosis Tasks and Workload**

Chang Hoon Ha, Jong Hyun Kim, Seo Ryong Koo & Poong Hyun Seong, Korea Advanced Institute of Science & Technology, S. Korea

#### **The Human Factors (HF) Methods Matrix: A Tool for Integrating HF Methods**

Paul Salmon, Neville Stanton, Guy Walker & Damian Green, Brunel University, United Kingdom & Chris Baber, The University of Birmingham, United Kingdom

#### **Towards the Development of a Model of Risk-Taking Behavior in Telerobotic Task Performance**

Daniel Mountjoy, North Carolina A&T State University, USA

#### **Expanding the Technology Acceptance Model: The Role of Organizational Characteristics and Individual Characteristics**

Youngho Rhee, Samsung Electronics, S. Korea, Dongseop Lee & Randall Dunham, University of Wisconsin-Madison, USA

# nical Sessions

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## SPECIAL INTEREST GROUPS

Monday, July 27 •  
**Morning 8–12:30 pm**

**Simulation Technology for Physical and Mental Health**

**Forum Boardroom**

Brenda Wiederhold, The Virtual Reality Medical Center, USA & Alex H. Bullinger, University of Basel, Switzerland

Tuesday, July 26 •  
**Morning 8–12:30 pm**

**eWork: Trends and Challenges from the European Perspective**

**Forum Boardroom**

Pekka Huuhtanen, Finnish Institute of Occupational Health, Finland

Wednesday, July 27 •  
**Morning 8–12:30 pm**

**User Interface Development**

**Forum Boardroom**

Sheue-Ling Hwang, National Tsing-Hua University, Taiwan

Monday, July 25 •  
**Afternoon 1:30–6 pm**

**Human Oriented Approach for Computer Embedded Environments**

**Forum Boardroom**

Sakae Yamamoto, Tokyo University of Science, Japan & Hirohiko Mori, Musashi Institute of Technology, Japan

Tuesday, July 26 •  
**Afternoon 1:30–6 pm**

**Information in Three Dimensional Space: Visuo-Spatial Cognition in New Media**

**Forum Boardroom**

Arthur Tang & Frank Biocca, Michigan State University, USA, Wijnand Ijsselstein, Eindhoven University of Technology, The Netherlands, Lynette Lim, University of Michigan, Ann Arbor, USA & Weimin Mou, Chinese Academy of Sciences, China

# Exhibition

Monday & Tuesday • 9 am–5 pm • Wednesday • 9 am–4 pm • Augustus Ballroom

## Exhibition

You are invited to visit the Exhibition Hall where the leading organizations and posters will demonstrate the latest in HCI International 2005.

### Exhibitors

Advanced Brain Monitoring	Micro Analysis and Design
Aerospace Experimental Psychologies	Morgan Kaufmann Publishers
Anthrotronix	National Research Council of the National Academies
BMH Associates	Noldus Information Technology, Inc.
Boeing/AFRL	QinetiQ
Clemson University	QUASAR
Compumedics USA, Ltd.	Sandia National Laboratories
DaimlerChrysler Corporation	Springer
Design Interactive, Inc.	Seeing Machines
Electrical Geodesics	Taylor & Francis
Embry-Riddle Aeronautical University	TechSmith Corporation
Eye Response Technologies	Tobii Technology
Eye Tracking, Inc.	University of Hertfordshire
Florida Institute for Human and Machine Cognition	University of Illinois—Chicago and Industrial Virtual Reality
HCI International 2007	University of Virginia, Carnegie Mellon University and NovaSol
Honeywell	U.S. Army—Aberdeen Test Center
Human Bionics	User Centric, Inc.
ICS-Forth	VIRTE
Infrascan	VMASC/Old Dominion University
Lawrence Erlbaum Associates, Inc. Publishers	VRsonic Inc.
LC Technologies, Inc.	Wiley Publishing
Li Creative Technologies	
Lockheed Martin Advanced Technology Laboratories	
Mangold Software & Consulting	

### Transport Safety Risks: Should We Tolerate Human Error?

Mark Young, Brunel University, United Kingdom & John Faulkner, University of New South Wales, Australia

### A Comparison of the Usability and Effectiveness of Web-Based Delivery of Instructions for Inherently 3-D Construction Tasks with PDAs

Michael Sharp, Rensselaer Polytechnic Institute, USA

### Outcome Measurement of Instillation of 0.45% Saline to Catheter Suction on the Endotracheal Patients

Tseng Yi, National Defense Medical Center, Taiwan

### AUI WALK—Online Usability Test Application for Performance Analysis of Auditory Mappings

Alexander Nischelwitzer & Gerald Janisch, University of Applied Sciences, Joanneum, Austria

### Design of 2-Dimension Fourier Interpolating Templates with Window

Li Wen-Yuan, Huang Xiang-Dong & Su Fei, Tianjin University, China

### Effects of Color Combination of Traditional Chinese Texts on Reading Time and Preference Rating in RSVP Displays

Shih-Miao Huang, National Formosa University, Taiwan, Borshuing Liu, San Jonan University of Science & Technology, Taiwan & Chien-Hsiung Chen, National Taiwan University of Science & Technology, Taiwan

### Human Error Seeds Simple Evaluation Method for Hospital Works

Yusaku Okada, Keio University, Japan

### Computer and Human Adebayo Olajobi, Muto Tech Communication, Nigeria

### Effects of Automation Reliability and Training on Monitoring Performance and Perceived Mental Workload

Indramani Singh & Anju Lata Singh, Banaras Hindu University, India

### Simulating the Visual System of Compound Eye of Insects by Computer

Huang Xiang-Dong & Li Wen-Yuan, Tianjin University, China

### Frequency Distributions for Names and Unconstrained Words Associated with the Letters of the English Alphabet

James Lewis, IBM Pervasive Computing Division, USA

### Architecture and Ergonomics: Designing in Virtual Reality—Future of Choice?

Katarzyna Ujma-Wasowicz & Adam Gil, Silesian University of Technology, Poland

### Using Personal Computers for Enhanced Presence Detection in Building Automation

Tobi Delbruck, Andi Fenkart & Raphael Zwiker, ETH/University of Zurich, Switzerland

### Using Universal Design Concepts for an Assistive Technology Certificate Program

Kirk Behnke, California State University, Northridge, USA

### A Typology of Website Genres

Abraham van der Vyver, Monash, SA, S. Africa

### Enhanced VoiceXML

Jose Rouillard, Universite des Sciences et Technologies de Lille, France & Philippe Truillet, Université Paul Sabatier, France

### A Dynamic and Interactive System for Managing the Information About the Reinforced Concrete Decay

Rossella Corrao, Antonio De Vecchi, Gabriella La Spina & Annalisa Marceca, University of Palermo, Italy

### Shortcut Integrated Agent as Search Front

Ryosuke Saga, Guiha Jim, Yasuhiko Onitsuka, Akinori Kageyama & Hiroshi Tsuji, Osaka Prefecture University, Japan

### Music Design Assistance Using Examples

Haruhiro Katayose, Kwansai Gakuin University, Japan

### Application of the Episodic Model Association Matrix to Interface Design

Peter Patsula, Nanyang Technological University, Singapore

### UKT—An Editing Tool for Multilingual Thesauri

Ute Koch, Social Sciences Information Center, Germany & Maximilian Eibl, GESIS, Germany

# & Posters

Presenters will be at their posters during the scheduled morning break (10-10:30 am) and afternoon break (3:30-4 pm) each day, and other times at the discretion of presenter.

## **The Assessment of Spatial Presence— The Role of Task Load and User-Related Factors**

Jari Laarni, Niklas Ravaja & Timo Saari,  
Helsinki School of Economics, Finland

## **Augmented Reality: New Approach for Creating Unique Working Environment**

Evgenia Chernenko & Tatiana Glotova,  
Joensuu Science Park, Finland & Esko  
Marjomaa, University of Joensuu, Finland

## **Privacy and Security in an On-Line Social Housing Community**

Linda Macaulay, University of Manchester,  
United Kingdom, Kathy Keeling,  
Manchester Business School, United  
Kingdom & Peter McGoldrick, University  
of Manchester, United Kingdom

## **Harnessing the Power of a VoiceXML Engine to SMS Based HCI**

Jose Rouillard, Universite des Sciences  
et Technologies de Lille, France & Herve  
Dutter, Converge Online, France

## **A Visual Environment for Tuning a Content-Based Vector Image Retrieval Engine**

Tania Di Mascio, Daniele Frigioni & Laura  
Tarantino, University of L'Aquila, Italy

## **Blended Learning and Multimedia for Adult People**

Francisco Cipolla Ficarra, F&F Multimedia  
Communications Corporation and  
Universita degli Studi di Bergamo, Italy

## **A Single-Switch Performance Evaluation Tool**

Blaise Liffick, Millersville University, USA,  
Barry Romich, AAC Institute, USA & Katya  
Hill, Edinboro University, USA

## **Supporting Stakeholder Collaboration Through Pair Writing**

Adi Tedjasaputra & Eunice Ratna Sari,  
TRANSLATE-EASY, Indonesia

## **How Long Should a Task Take? Identifying Specification Limits for Task Times in Usability Tests**

Jeff Sauro, Oracle Inc., USA & Erika  
Kindlund, Intuit, Inc., USA

## **Color Design Support by Color Selection Strategy Mapping Based on Designer Goals**

Eric Cooper & Katsuari Kamei, Ritsumeikan  
University, Japan

## **Reducing the Design Complexity of Auditory Environments**

Palle Klante, OFFIS Research, Germany

## **Evaluating the Relationship Between the Man and the Computer: Interaction, Substitution or Maintenance?**

Edson Paladini, Universidade Federal  
de Santa Catarina, Brazil

## **Designer's Touch on Software Products**

Ekin Dino & Cigdem Erbug, Middle East  
Technical University, Turkey

## **Human Prosocial Response to Facial Expression of Interactive Agent**

Yugo Takeuchi, Shizuoka University,  
Japan & Takuro Hada, Nihon Denwa  
Shisetsu, Japan

## **An Interactive Hybrid Swarm Optimization**

Qing Luo, Haiyu Hou & Gerry Dozier,  
Auburn University, USA

## **Analysis of Mediated Social Interactions: A Matrix of Methodological Confounds**

Chad Harms, Iowa State University, USA

## **Human Interface Design for Controlling Home Appliances with Cellular Phones**

Haeinn Lee, Iowa State University, USA

## **Compensating for the Eye-Hand Span Improves Gaze Control in Human-Computer Interfaces**

Mei Xiao, Judelande Hyppolite, Marc  
Pomplun & Sindhura Sunkara, University  
of Massachusetts at Boston, USA &  
Elena Carbone, University of Bielefeld,  
Germany

## **Automatic Lettering Design Based on Human Kansei**

Masazumi Miyoshi, Yoshifumi Shimoshio  
& Hiroaki Koga, Kumamoto National  
College of Technology, Japan

## **A Study on the Effects of the Usability of Products on User's Emotions—With Emphasis on an Extraction of User's Representative Emotions Expressed While Using Products**

Sang-Hoon Jeong & Kun-Pyo Lee,  
KAIST, S. Korea

## **Text-Based Communication Enhanced by Sharing Human Senses of Values Based on the Agreement Strength of Responding Phrases**

Masayuki Ihara & Minoru Kobayashi,  
NTT Corporation, Japan

## **Emphasis as an Extra-Linguistic Marker for Resolving Spatial and Temporal Ambiguities in Machine Translation for a Speech-to-Speech System Involving Greek**

Christina Alexandris, Stavroula-Evita F.  
Fotinea & Eleni Efthimiou, Institute for  
Language and Speech Processing, Greece

## **Growing Virtuality in a Professional Association—A Data Driven Approach**

Karsten Boye Rasmussen, University of  
Southern Denmark, Denmark & Repke  
de Vries, Royal Library of the Netherlands,  
The Netherlands

## **Understanding the User Model of the Elderly People While Using Mobile Phones**

Hsien-Hui Tang & Shih-an Kao, Chang  
Gung University, Taiwan

## **Collaborative Work with Adapted Data** Martin Klima & Pavla Slavik, Czech Technical University in Prague, Czech Republic

## **Autonomic Gaze Control of Avatars Using Voice Information in Virtual Space Voice Chat System**

Kinya Fujita, Toshimitsu Miyajima &  
Takashi Shimoji, Tokyo University of  
Agriculture & Technology, Japan

## **Unlocking Potential of Research Projects for Broader Access to Education and Learning**

Michela Ott, Lucia Ferlino & Mauro  
Tavella, Istituto Tecnologie Didattiche-  
CNR, Italy

## **On the Roles of a Modality- Independent and Task-Independent Dialogue Manager**

Frederic Landragin & Celestin Sedogbo,  
Thales Research & Technology, France

## **Interactive Image Exploration Using Relational Annotated Images** Marcel Goetze & Stefan Schlechtweg, Otto-von-Guericke University of Magdeburg, Germany

## **Context Cube: Conceptual Framework of Context-Awareness for Ubiquitous Interaction Design** Hyun-Jhin Lee, Hongik University, S. Korea & Hyun-Jeong Kim, KAIST, S. Korea

## **Bi-Modal Interaction Loop for a Geo-Spatial Query**

Franck Dumoncel & Cyril Bazin, Greyc-  
Universite de Caen, France, Mauro Gao,  
LIUPPA-Universite de Pau, France &  
Jacques Madelaine, Greyc-Universite de  
Caen, France

## **An Approach to Optimizing the Employment of Training Media to Facilitate the Rapid Acquisition of Complex Satellite Systems Knowledge**

Charles Barba, CHI Systems, Inc., USA,  
H. Barbara Sorensen, Air Force Research  
Laboratory, USA, Amanda Hafich &  
Kelly Neville, CHI Systems, Inc., USA

## **Translating & Extending 2 Gestalt Grouping Principles to Include Time to Characterize Visual Motion on Screen: Good Continuation & Closure**

Jinsook Kim & Sharon Poggenpohl,  
Institute of Design, IIT, USA

## **Signification in Graphical User Interface Design**

Rodrigo Campos, Pontifical University  
do Rio de Janeiro, Brazil

## **Counting Effective Number of Buttons: An Informational Analysis of Input Device Performance**

Toru Nakata, National Institute of  
Advanced Industrial Science &  
Technology, Japan

## **Turn-Taking in Controlled JSL Conversation**

Eishi Watanabe, Kogakuin University,  
Japan, Mina Terauchi, Polytechnic  
University, Japan, Yuji Nagashima,  
Kogakuin University, Japan & Kazuyuki  
Kanda, Chukyo University, Japan

## **A Comparative Study of the Influence of Color as Culture-Dependent Design Element for Comfortable Websites** Erika Saheki, Inoue Tomoyuki & Roberto Okada, Miyagi University, Japan

## **The Interaction Between ICT and Psychosocial Life Environment: From Young Urban Knowledge Workers to Students in School** Ulrika Danielsson, Mid Sweden University, Sweden & Karin Danielsson, Umea University, Sweden

## **Shared Cognition and Resource Coordination in Distributed Decision-Making Teams** Rita Vick, Quantum Leap Interactive, Inc., USA & Joseph McNamara, Quantum Leap Innovations, USA

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## **Analysis of Driver's Behavior from Heart Rate and Eye Movement When He/She Causes an Accident Between Cars at an Intersection**

Hiroaki Kosaka, Hiroki Koyama & Hirokazu Nishitani, Nara Institute of Science & Technology, Japan

## **User Preference as a Method for Determining Screen Polarity Requirements for Complex Control Room Displays**

Darren Van Laar, University of Portsmouth, United Kingdom, Matthew Cox & Ian Andrew, CCD Design and Ergonomics Ltd., United Kingdom & Mark Turner, University of Portsmouth, United Kingdom

## **Synthesising Method for Subjective Similarity Retrieval Service Adapting for Given Multimedia Contents and Subjective Criteria for Them**

Akihiro Ogino & Toshikazu Kato, Chuo University, Japan

## **Web LOG File Information Analysis and Visualization Inside Organizations**

Oscar Mealha, Florin Zamfir, Jose Nunes & Beatriz Sousa Santos, University of Aveiro, Portugal

## **Driver's Distrust of a Collision Avoidance System**

Akira Kurosaki, Wai Cheong Choy, Hiroaki Kosaka & Hirokazu Nishitani, Nara Institute of Science & Technology, Japan

## **Mobile Interactive Knowledge Elicitation (MIKE)—Mobile Cyberscience in HCI Methods**

Dean Mohamedally, City University London, United Kingdom, Panayiotis Zaphiris & Helen Petrie, Centre for HCI Design, City University, United Kingdom

## **Analyzing User Interfaces with Best-of-Breed Culture Dimensions**

Aaron Marcus, Aaron Marcus and Associates, Inc., USA

## **Towards a Participatory Approach to Support Interface Customization for Groups of Children**

Silvia Soares, Unicamp, Brazil & Maria Cecelia Calani Baranauskas, State University of Campinas, Brazil

## **A Case Study Using a Cognitive Model of Learned Carelessness in Cognitive Engineering**

Andreas Ludtke, OFFIS—Safety Critical Systems, Germany & Claus Mobus, University of Oldenburg, Germany

## **Emotion and User-Interface Design**

Aaron Marcus, Aaron Marcus and Associates, Inc., USA

## **A Distributed Software Agent System for Operational Environments**

Anil Raj, Roger Carff, Matthew Johnson, Shrinivas Kulkarni & Jeffrey Bradshaw, Florida Institute for Human & Machine Cognition, USA & Sergey Drakunov, Tulane University, USA

## **OmniGrasp—A Full Hand Haptics Grasp System**

Behrokh Khoshnevis, Jing Zhang & Baharak Zali, University of Southern California, USA

## **Designing the Future e-Newspaper—The da Vinci Approach**

Carina Ihlstrom, Jesper Svensson & Maria Akesson, Halmstead University, Sweden

## **How Would You Like Your e-Newspaper?—Converging the Best from Two Worlds**

Maria Akesson, Carina Ihlstrom & Jesper Svensson, Halmstead University, Sweden

## **Usability of Synchronous Communication Software in Instructional Context**

Halil Ersoy & Cigdem Erbug, Middle East Technical University, Turkey

## **User-Centered Design Practices Management and Communication**

Ahraf Gaffar, Naouel Moha & Ahmed Seffah, Concordia University, Canada

## **And the Winner Is... The Learner: A Study on Learner Appreciation and Satisfaction in an On-line Learning Environment**

Banu Gundogan, Middle East Technical University, Turkey

## **Introducing Programming by Demonstration Techniques at the Toolkit Level: A Case Study**

Loe Sanou, Patrick Girard & Laurent Guittet, LISI/ENSMA, France

## **Over-Done: When Web Accessibility Techniques Replace True Inclusive User Centered Design**

Jennifer Bilotta, User Insight, Inc., USA

## **Human Error Based Learning Method**

Abir Chaali Djelassi, Philippe Polet & Frederic Vanderhaegen, Universite de Valenciennes, France

## **Expert Knowledge Elicitation Implementation in the Operational Test Arena**

Helene Maliko-Abraham, BCI, Inc., USA

## **The Effects of Interdependence on Team Performance in Human-Robot Teams**

Raegan Hoeft, Florian Jentsch & Client Bowers, University of Central Florida, USA

## **Systematic Usability Inspection of Web Based "Business Processes"**

Franca Garzotto & Vito Perrone, Politecnico di Milano, Italy

## **The Super Compression of the Music Using the 3-Dimensional Genetic Algorithm**

Yasu Mitsukura, Okayama University, Japan

## **Final Destination Knowledge Transfer? Training of Soft Skills in a Virtual Classroom**

Heike Hufnagel & Mareike Geisen, Fraunhofer-IAO, Germany

## **Eye Tracking Analysis on the Cross Effect of a Map Layout and Learner's Prior Knowledge on the Navigation in Hypertext**

David Tisserand & Thierry Baccino, University of Nice Sophia-Antipolis, France

## **Model Based Web Interfaces' Analysis**

Jose Campos, Universidade do Minho, Portugal, Portugal

## **Testing AudioBrowser**

Jose Campos & Antonio Ramires Fernandes, Universidade do Minho, Portugal, Portugal

## **Modeling User Delay Perception and Tolerance Dynamics in Human-Computer Interaction**

Enlie Wang & Barrett Caldwell, Purdue University, USA

## **Questioning the Implicitness—Issues in Developing and Testing Mobile Devices for International Markets**

Christian Sturm, arolis-international ease of use, Germany, Mario Alerto Moreno Rocha, Universidad Tecnologica de la Mixteca, Mexico & Pia Quact-Faslem, Siemens AG, Germany

## **Usability Problems in Digital Home Products: An Interactive TV Case Study**

Pelin Gultekin & Cigdem Erbug, Middle East Technical University, Turkey

## **Adapting Single-User Applications to Groupware—An Example from Industry**

Thomas Roper & Joseph McNamara, Quantum Leap Innovations, USA

## **Usability Evaluation Based on User Reactions**

Avishek Nigam, Atos Origin, Brazil & Maria Turnell, LIHM-DEE-UFCG, Brazil

## **Real-Time Logging Method for Interaction Observation—With Emphasis on the Software Requirement**

Oh Ki-Tae & Kun-Pyo Lee, KAIST, S. Korea

## **UTGeR: A User-Independent Technique for Gesture Recognition**

Farid Parivni & Cyrus Shahabi, University of Southern California, USA

## **Hyperlogo: A Language Which Provides "Visible" Structure of Processing Programs**

Nobuhito Yamamoto, University of Tsukuba, Japan & Tomoyuki Nishioka, Tsukuba College of Technology, Japan

## **Research on Social Interaction Support for Ubiquitous eLearning**

Guozhen Zhang, Waseda University, Japan

## **Haptic User Interfaces: Design, Testing and Evaluation of Haptic Cueing Systems to Convey Shape, Material and Texture Information**

Kanav Kahol, Priyamvada Tripathi & Sethuraman Panchanathan, Arizona State University, USA

## **Traffic Visualization System for Peer-to-Peer Communication Detection**

Satoshi Togawa, Kazuhide Kanenishi & Yoneo Yano, University of Tokushima, Japan

## **Maximum Likelihood Approach to Language Identification**

C. Santhosh Kumar & V.P. Mohandas, Amrita Vishwa Vidyapeetham, India & Li Haizhou, Institute for Infocomm Research, Singapore

## **Comparing Models by the Information Transmission Capability Expressed by the Coefficient of the Difficulty Index in Fitts' Law**

Jing Kong & Xiangshi Ren, Kochi University of Technology, Japan

# & Posters

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## **A Design Environment for Audio Services**

Mohamed Ould, Ahmed Limam, Patrice Enjalbert & Jacques Madelaine, Universite de Caen, France

## **Remote Controlling Slides-Based Presentations**

Mirko Cesarini, Politecnico di Milano, Italy

## **Bringing Cognitive Models into the Domain of Web Accessibility**

Ion Juvina & Herre Van Oostendorp, Utrecht University, The Netherlands

## **User Centered Design of Multimodal Interfaces for Use in Hybrid Shopping Environments**

Thomas Jockel & Thomas Berger, inter.research.e.V., Germany & Karim Khakzar, Fulda University of Applied Sciences, Germany

## **Cross-Cultural Differences that Influence Users' Preferences**

Maysoon Abulkhair, King Abdulaziz University, Saudi Arabia & Siobhan North, University of Sheffield, United Kingdom

## **A Dialog Model for Multi Device Interfaces with Different Modalities**

Robbie Schaefer & Wolfgang Mueller, Paderborn University, Germany & Steffen Bleul, University of Kassel, Germany

## **A Study on Elements Influencing the Visually Impaired in Recognition of Haptic Pictures in Design**

Chih-Fu Wu, Yong-Hsiang Tu & I-Ting Yeh, Tatung University, Taiwan

## **Effect of Signal-Noise Ratio on Auditory Spatial Facilitation of Visual Search in Noise**

Thomas Strybel & Marshall Dion, California State University, Long Beach, USA

## **A Study on the Complicacy of Chinese Characters Approaching from Visual Comprehension**

Min-Yuan Ma & Chai-You Chao, National Cheng Kung University, Taiwan & Takashi Nagata, Chiba University, Japan

## **The Biometric HULK: A Secure, Keyless Input Device for Personal Computing Devices**

Raegan Hoeft & Florian Jentsch, University of Central Florida, USA & Peter McAlindon, Keybowl, Inc., USA

## **Evaluation of Web Based Course Units in Medical Education**

Joern Krueckeberg, Gustav Meyer & Herbert K. Matthies, Hanover Medical School, Germany

## **Virtualising Online-Seminars Entirely—A Variation of the Variables**

Dominic Becking, Stefan Betermieux & Gunther Schlageter, University of Hagen, Germany

## **A Telephone Based E-Information Access System—Its Infrastructure and Architecture**

Norman Soong & Rakhi Gandhi, Villanova University, USA

## **Openness, Transparency and Adaptation: Enhancing Interface Efficiency in Complex Management Systems**

Sotiria Drivalou, NTUA, Greece

## **Using Eye-Tracking Technology and Brain Wave Measurements in Medical Diagnostics: Current Status and Research Perspectives**

Heike Sichtig & Mohammad Khasawneh, SUNY at Binghamton, USA

## **Tamoa: Task Model Analyser—A Java-based Framework for the Analysis of Safety-Critical Computer Systems to Reveal Safety-Critical Sections in the System's Design Phase**

Bjoern Zeiger & Tomasz Mistryk, University of Paderborn, Germany

## **The Relationship Between Skill Acquisition and Shape Perception Through Operating Mental Image: For the Optimum Information Value of Shape for Designing Pre-School Toys**

Hiroshi Takenouchi & Yoshiyasu Takefuji, Keio University, Japan

## **Analysis of Teacher's Activity with Educational Software into Computer Laboratory**

Walquiria Castelo-Branco, Veronica Gitirana & Alex Sandro Gomes, Federal University of Pernambuco, Brazil

## **Towards Plasticity of Digital Learning Spaces**

Birgit Bomsdorf, University of Hagen, Germany

## **Description and Evaluation of a Portuguese AAC System**

Luis Garcia, ESTIG, Portugal & Luis Oliveira, INESC-ID/IST, Portugal

## **A Study on Designers' and Users' Perception for the User Interface Design of Computerized Product**

Kwang Tae Jung, Korea University of Technology & Education, S. Korea & Jacques Giard, Arizona State University, USA

## **Development of a Usability Evaluation Tool for the Web Application Design**

Jae Hee Park & Inseok Lee, Hankyong National University, S. Korea & Chang-Rok Oh, Malgum.com, S. Korea

## **A Facial Expression Interface System with Feature Tracking and Factorization**

Xiaozhou Wei, Lijun Yin & Jun Wang, State University of New York at Binghamton, USA

## **A Study on Human Behavior Processes for the Development of Smart Home Service Designs Based on Service Level Classification**

Eun-Jong Lee, Handong University, S. Korea, Changsu Kim, Samsung Advanced Institute of Technology, S. Korea & Pieter Stappers, TU Delft, The Netherlands

## **Rehabilitation of Patients with Hemispatial Neglect Using Visual-Haptic Feedback in Virtual Reality Environment**

Priyamvada Tripathi & Kanav Kahol, Arizona State University, USA, Leslie Baxter, Barrow Neurological Institute, USA, Troy McDaniel, Anthony Baker & Sethuraman Panchanathan, Arizona State University, USA

## **Characterizing System Users: Application of the Diversity Wheel**

Melody Ivory, Andrew Martin, Rodrick Megraw & Beverly Slabosky, University of Washington, USA

## **A Comparative Study on the Old's and the Young's Control Time for Universal Design**

Bok Hee Song, Kwang Tae Jung & Han Kyung Yun, Korea University of Technology and Education, S. Korea

## **A Systematic Approach for Gesture Interactive System Design**

Ki Ae Seong, Sang Whan Kim, Minchul Kim & Mijeong Kim, Samsung Electronics Co., Ltd., S. Korea

## **Articulating the Cognitive Walkthrough Method Based on an Extended Model of HCI**

Takashi Kato & Masahiro Hori, Kansai University, Japan

## **Do Ergonomic Design Features Influence Mobile Phone Users' Perception of Usability and Their Intention to Purchase a Next Phone?**

Youngho Rhee, Samsung Electronics, S. Korea & Michael Smith, University of Wisconsin-Madison, USA

## **A 2D+3D Virtual Prototyping System for the Design of Mechatronic System**

Qing Shen, Juergen Gausemeir, Jochen Bauch & Rafael Radkowski, Heinz Nixdorf Institute, Germany

## **Back to the Future, Back to Home, Back to Mom: Use and Abuse of the Back Button on English and Non-English Web Sites**

Marco Lazzari & Daniela Iovino, University of Bergamo, Italy

## **Decision-Centric Human-Computer Interface for Collaborative Planning**

Celestine Ntuen, Obafemi Balogun, Xiaochun Jiang & Daniel Mountjoy, North Carolina A&T State University, USA

## **Using Engineering Softwares in a Non-Mother Language: Some Findings in a Case Study in Rio de Janeiro, Brazil**

Claudia Monte Alvao, PUC-Rio, Brazil

## **Breadcrumbs, Usability and Architecture: A Field Research**

Felipe Memoria & Claudia Felipe Memoria & Claudia Monte Alvao, PUC-Rio, Brazil

## **Cognition, Education and Training**

Mirosljub Grozdanovic & Evica Stojiljkovic, University of Nis, Serbia and Montenegro

## **Gesture Interpretation in a Smart Room**

Bill Palmer, Land of Objects, USA

## **Human Computer Interaction in a Real Ambient Intelligence Application at Home**

Alfonso Garate, Fagor Electrodomesticos, Spain, Nati Herrasti & Antonio Lopez, Ikerlan, Spain

## **The Mobile, Computer-Aided, Multimedia-Based Learning Application—Mobile Learning Engine (MLE)**

Alexander Nischelwitzer & Matthias Meisenberger, University of Applied Sciences Joanneum, Austria

## **Automatic Teller Machine Accessible to Elderly Cross-Cultural Users**

Alexandra Tarakanov, Technion-Israeli Institute of Technology, Israel

## **Ergonomic Approach for the Universal Design of Computerized Products**

Han Kyung Yun, Bok Hee Song & Kwang Tae Jung, Korea University of Technology and Education, S. Korea

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## **The Design of an Interactive Webpage Embedded with Psychological Feelings**

Helen Siu & John Ho, City University of Hong Kong, Hong Kong

## **A Study about Expert Systems and Their Applications**

Eduardo Ferreira de Abreu, Faculdades Associadas de Ariquemes (FAAr), Brazil

## **Administration of the Knowledge and Modelling of a System of Information for the Current Process of Distribution and Donation of Blood of the Unit of Collection and Transfusion of Ariquemes-UCTA Using UML**

Eduardo Ferreira de Abreu, Faculdades Associadas de Ariquemes (FAAr), Brazil & Jose Bogarin, Universidad Autonoma de Asuncion (UAA), Brazil

## **System of Penitentiary Safety**

Eduardo Ferreira de Abreu, Faculdades Associadas de Ariquemes (FAAr), Brazil & Jones Giacon, Centro Universitario Luterano di Ji-Parana/Ro (CEULJI), Brazil

## **A Study Comparative Between the Human Process of Learning and the Process of Artificial Learning Through the Artificial Neural Networks**

Eduardo Ferreira de Abreu & Liduina Kenya Fernandes Januario, Faculdades Associadas de Ariquemes (FAAr), Brazil

## **A Comparative Study on the Degree of Knowledge of Users of Internet with Emphasis in the Technology Wireless in the City of Ariquemes-RO-Brazil, in the Year of 2004**

Eduardo Ferreira de Abreu & Rodrigo Ferreira do Nascimento, Faculdades Associadas de Ariquemes (FAAr), Brazil

## **Study about Viability of the Use of Pedagogic Techniques as Middle of Aid in the Sick Children's Recovery in the Hospitals the Year of 2005 in the City of Redencao, Pennsylvania**

Eduardo Ferreira de Abreu, Faculdades Associadas de Ariquemes (FAAr), Brazil & Vilma Maria de Sousa, Universidade Estadual do Para (UEPA), Brazil

## **Emotional Responses Produced by Virtual Environments in Patents with Eating Disorders**

Jose Gutierrez-Maldonado & Marta Ferrer-Garcia, University of Barcelona, Spain

## **Improving User Trust with a Likelihood Alarm Display**

Corey Fallon, Ernesto Bustamante, Katherine Ely & James Bliss, Old Dominion University, USA

## **A Novel Integrated Deception Recognition System Using 3D/Thermal Imaging and Acoustic/Biosensor Analysis**

Steven Yi, Genex Technologies, Inc., USA

## **Evaluation of Artificial Cues in 3D Aircraft Displays**

Torbjorn Alm, Linkoping Institute of Technology, Sweden & Patrik Lif, FOI, Sweden

## **A Psychophysiological Study of Computer-Based Testing and Workload**

Philip Fatolitis, Naval Aerospace Medical Research Lab, USA

## **A Sign Language Recognition System Using VR Technology**

Lianyi Chen & Hideo Fujimoto, Nagoya Institute of Technology, Japan

## **An Agent Based Approach for Augmenting Cognition**

Shrinivas Kulkarni, Matthew Johnson, Anil Raj & Jeffrey Bradshaw, Florida Institute for Human and Machine Cognition, USA

## **Application of Augmented Reality for Aerospace Maintenance Training**

Nickolas Macchiarella, Sathya Gangadharan & Dahai Liu, Embry-Riddle Aeronautical University, USA, Anthony Majoros, The Boeing Company, USA & Dennis Vincenzi, Jardon and Howard Technologies, Inc., USA

## **ATOMOS IV: Enabling Integrated Decision Support in the Supervisory Control of Ships**

Leo van Breda & Hendrik-Jan Van Veen, TNO Human Factors, The Netherlands

## **Augmented Cognition for Mobile Operators in Unpredictable Environments**

Misha Pavel, Oregon Health Sciences University, USA

## **Augmented Cognition in a Fielded Operational System Command and Control Operator Module: Augmented (The C2OM-A System)**

Richard Cornwall & Gary Kollmorgen, BMH Associates, Inc., USA

## **Augmenting Cognition for Adversarial Reasoning**

Russell Vane III & Douglas Griffith, General Dynamics Advanced Information Systems, USA

## **The Role of Critical Thinking for Control of Unmanned Military Vehicles (UMVs)**

Peter Svenmarck, Swedish Defence Research Agency (FOI), Sweden

## **Dynamic Electrophysiological Measures of Brain Activity in Context-Modeling**

Don Tucker & Phan Luu, Electrical Geodesics, Inc., USA & J. Chris Forsythe, Sandia National Laboratories, USA

## **EEG Signal Quality Acquired During Standing, Walking Slow and Walking Fast With a Wireless EEG System**

Daniel Levendowski, Gene Davis & Milenko Cvetinovic, Advanced Brain Monitoring, Inc., USA, Miodrag Popovic, University of Belgrade, Serbia and Montenegro, Vladimir Zivkovic, Michelle Lumicao, Miroslav Petrovic & Chris Berka, Advanced Brain Monitoring, Inc., USA

## **Extending the Reach of Augmented Cognition to Real-World Decision-Making Tasks**

Frank Greitzer, Pacific Northwest National Laboratory, USA

## **Integrated Multi-Environment Operator Support System (IMEOS)**

William Fraser, Defence R&D Canada-Toronto, Canada, Tom Gee, Covenant Systems Development, Canada & Ed Kozak, Serenica Technologies Corp., Canada

## **Enhancing the Common Distributed Mission Training Station Through Augmented Cognition Technology**

Susan Eitelman, CHI Systems, Inc., USA, Beth Wheeler Atkinson & Eric Stewart, JHT, Inc., Melissa Walwanis Nelson, NAVAIR Orlando TSD, USA & Michael Stiso, Chi Systems, USA

## **Episodic Cuing of Past Events**

Gabriel Radvansky, University of Notre Dame, USA & David Copeland, University of Southern Mississippi, USA

## **KNOME: Knowledge-Based Organizational Modeling Environment—Phase 1**

W. David Clark, Aptima, Inc., USA

## **Machine Support for Human Analogical Reasoning in Case-Method Instruction**

Susann Luperfoy, Stottler Henke Associates, Inc., USA & Bradley Myers, Carnegie Mellon University, USA

## **Measuring Preparatory States with Optical Imaging**

Echo Leaver, University of Illinois at Urbana-Champaign, USA

## **Multisensory Cueing for Enhancing Orientation Information During Flight**

William Albery, AFRL/HEPA, USA

## **NuWAM: The Development of a Modular, Real-Time Augmented Cognition System**

Erin Krizo, Air Force Research Laboratory, USA, Glenn Wilson, USAF/AFRL, USA & Chris Russell, Air Force Research Laboratory, USA

## **Physiological Measures of Driver Fatigue**

Jennifer Freeman May, Carryl Baldwin & Fred Freeman, Old Dominion University, USA

## **Task Allocation in Teams for Launch and Range Operations**

Katia Sycara, Paul Scerri & Joseph Giampapa, Carnegie Mellon University, USA, Samvith Srinivas & Michael Lewis, University of Pittsburgh, USA

## **The Potential Societal Impact of Augcog**

Mark Koltko-Rivera, Professional Services Group, Inc., USA

## **The Concept of Long Memory in Assessing the Global Effects of Augmented Team Cognition**

Jamie Gorman, New Mexico State University, USA

## **Toward Clarity in Augmented Cognition Theory and Research: Cognitive and Physiological States and Processes**

Mark Koltko-Rivera, Professional Services Group, Inc., USA

## **Using KAOs to Reduce Chaos in Augmented Cognition**

Shrinivas Kulkarni, Matthew Johnson, Jeffrey Bradshaw, Anil Raj, Renia Jeffers & Andrzej Uszok, Florida Institute for Human and Machine Cognition, USA



# & Posters

Presenters will be at their posters during the scheduled morning break (10-10:30 am) and afternoon break (3:30-4 pm) each day, and other times at the discretion of presenter.

## **A Study on Integrated Support Tool for Web Interface Design and Web Development Project**

Tsutomu Konosu, Hiroyuki Sekijima & Ryuichiro Matsuzawa, Chiba Institute of Technology, Japan

## **Three Dimensional Vision for Endoscopic Surgery**

Kauhiko Shinohara, Tokyo University of Technology, Japan, Yasushi Yamauchi, National Institute of Advanced Industrial Science & Technology, Japan & Tsuneo Fukuyo, Shinko Optical Co., Ltd., Japan

## **Glyph: A New Stroke Alphabet for Stylus-Based or Key-Based Text Entry**

Franck Poirier, Universite de Bretagne Sud, France

## **Posters, Lurkers, and In Between: A Multidimensional Model of Online Community Participation Patterns**

Gilly Leshed, Cornell University, USA

## **Interface Design and Intensions to Use Health Information in Low-Income Adults**

Linda Jackson, Chi Dang, Frank Biocca, Alexander von Eye, Yong Zhao, Gretchen Barbatsis & Hiram Fitzgerald, Michigan State University, USA

## **An evaluation Comparing the Performance of Novice Users Using Health Information Websites**

Susanne Stokes, Portsmouth University, United Kingdom

## **Army Cognitive Readiness Assessment: A "Next-Generation" Performance Battery**

Madeline Swann, U.S. Army Research Laboratory, HRED, USA & Regina Schmidt, NTI, Inc., USA

## **AGILE - AGed People Integration, Mobility, Safety and Quality of Life Enhancement Through Driving**

Marcel Delahaye, COAT-Basel, Switzerland, Bruno Fimm, PSYTEST, Germany, Isabelle Angehrn, K. Estoppey & R. Mager, COAT-Basel, Germany, Maria Panou & Evangelos Bekiaris, Hellenic Institute of Transport, Greece & Alex Bullinger, COAT-Basel, Switzerland

## **Gender Differences in the Performance of VDT-Based Perceptive Task**

Keiko Kasamatu, Kanazawa Institute of Technology, Japan, Hiroyuki Izumi, University of Occupational and Environmental Health, Japan, Satoshi Suzuki, Aoyama Gakuin University, Japan & Masaharu Kumashiro, University of Occupational and Environmental Health, Japan

## **User Modelling for Adaptive E-Shopping**

Maria Virvou & Anastasios Savvopoulos, University of Piraeus, Greece

## **Analysing the Accessibility of Web Pages According to Specific Algorithms**

Alice Good, Portsmouth University, United Kingdom

## **The Persuasive Mirror: Computerized Persuasion for Healthy Living**

Ana Andres del Valle & Agata Opalach, Accenture Technology Labs, France

## **Applying Automatic Speech Recognition to a Microwave Oven: Designing an Effective Speech Dialogue**

Laura Vennie, Whirlpool Corporation, USA

## **Evaluating Trusted Metadata Through Defined Social Networks**

Stanley James, University of Osnabruck, Germany

## **Designing an Energy Management System for the Civil Flight Deck—Some HCI Issues**

Jan Noyes, University of Bristol, United Kingdom & Alison Starr, Smiths Aerospace, United Kingdom

## **The Usability Improvement Process During Electric Product Development**

Bong Koh, Hee Lee & Seolhye Won, Samsung Electronics Co., Ltd., S. Korea

## **Optimizing Training Interventions for Specific Learning Objectives within Virtual Environments: A Training Intervention Matrix (TIMx)**

Wendi Van Buskirk, NAVAIR Orlando TSD, USA, Jessica Morage, James Kinzer, Joseph Dalton & Randolph Astwood, Jardon Howard Technologies, USA

## **Driver's Behavior and Characteristics According to Road Convention**

Yong Wook Jeon, Tatsuru Daimon & Hironao Kawashima, Keio University, Japan

## **Web Page Classification Using Artificial Neural Networks through Automatic Features Extraction**

Md. Saifur Rahman & Md. Abdullah Al Mamun, International Islamic University Chittagong, Bangladesh & S.M. Kamruzzaman, Manarat International University, Bangladesh

## **A Method of Similarity Retrieval for Three-Dimensional Shapes**

Yuji Teshima, Shizuoka Institute of Science and Technology, Japan, Takayuki Kanaya, Hiroshima International University, Japan, Koji Nishio & Ken-Ichi Kobori, Osaka Institute of Technology, Japan

## **Survey of Modeling, Recognition and Adaptation Strategies for User Adaptive Systems**

Keith Knudsen, Jack Zeaeientz & Elyon DeKoven, Soar Technology, USA

## **User Information Guidance in Public Transportation Systems**

Assia Mouloudi, UMR CNRS 6599 Heudiasyc, France, Claude Lemarchant & Annette Valentin, Centre de Recherches P. Guillaumat, France & Pierre Morizet-Mahoudeaux, UMR CNRS 6599 Heudiasyc, France

## **On the Use of the Educational Media for Immigrant Children in the U.S.: The Native Language Maintenance and the Learning of English as a Second Language**

Aya Kakefuda, The Graduate University for Advanced Studies, USA & Masaaki Kurosu, National Institute of Multimedia Education, Japan

## **"Living in the Moment": Developing an Interactive Multimedia Activity System for Elderly People with Dementia**

Arlene Astell & Maggie Ellis, University of St. Andrews, United Kingdom, Norman Alm, Richard Dye, Gary Gowans & Jim Campbell, University of Dundee, United Kingdom

## **Attention and Simulator Sickness with a See-Through Head-Mounted Display**

Juha Havukumpu, Stadia, Helsinki Polytechnics, Finland, Gote Nyman, Jari Takatalo & Jukka Hakkinen, University of Helsinki, Finland

## **Identifying the Needs of the Trainee: A Competency Based Approach to Training**

Randolph Astwood & David Holness, NAVAR Orlando TSD, USA & Fleet Davis, Jardon & Howard Technologies, USA

## **Ergonomics Legislation in South Africa: Work Related Upper Limb Disorders, Circular 180**

Simeon Davies, University of Zululand, S. Africa

## **Adaptive Automation for Control of Unmanned Vehicles: Simulation Platform for Rapid Prototyping and Experimentation**

Keryl Cosenzo, U.S. Army Research Laboratory, USA, Raja Parasuraman, Tashfeen Bhimdi & Anthony Novak, George Mason University, USA

## **Sleep-Loss and Complex Team Performance**

Jeffrey Whitmore, Air Force Research Laboratory, USA

## **Beginning Design Without a User: Application of Scenario-Based Design**

Dominic LaCava & Helena Mentis, Lockheed Martin, USA

## **Concatenation of Voice Commands Increases Input Efficiency**

Roman Vilimek, Siemens AG, Germany

## **Workflow Oriented Product Design: A Case Study**

Karsten Nebe, University of Paderborn, Germany & Thorsten Koopmann, Siemens AG, Germany

## **Mobistik—An Effective Small Footprint Mobile Device Communication Method**

Arijit Sengupta & Benjamin Murphy, Indiana University, USA

## **Cognition of Emotion on a Drum Performance by Hearing-Impaired People**

Rumi Hiraga, Bunkyo University, Japan, Teruo Yamasaki, Osaka Shoin Women's University, Japan, Nobuko Kato, Tsukuba College of Technology, Japan

## **The Effects of Time Pressure and Noise Distraction on Visuo-Spatial Memory**

Courtney Crooks, NAVAIR, USA, Jordan Knicely, Research and Engineering Development, Inc & Thomas Mitchell, INS, Inc., USA

# Exhibition

Monday & Tuesday • 9 am–5 pm • Wednesday • 9 am–4 pm • Augustus Ballroom

## **Augmenting Cognition with Wearable Computers**

Kent Lyons & Thad Starner, Georgia Institute of Technology, USA

## **A Cross-Cultural Study on Computer Mediated Communication**

Qiping Zhang, Xiaoning Sun & Thippaya Chintakovid, Drexel University, USA

## **Elaboration of a Critical Situation Simulator Based on a Cognitive Approach**

Charles Santoni & Jean-March Mercantini, LSIS Université d'Aix-Marseille III, France, Maria Turnell & Claudia Serey Guerrero, Universidade Federal de Campina Grande, Brazil & Sebastian Scandolo, Universidad Nacional de Rosario, Argentina

## **A Mobile Game to Explore the Use of Location Awareness on Collaboration**

Nicolas Nova, Fabien Girardin & Pierre Dillenbourg, EPFL, Switzerland

## **Personal Experiences in the Office-Setting Workplace**

Myrna Kasdorf, University of Wisconsin-Madison, USA

## **Effects of Cued Modality Switching on Recall**

Stephanie Wright & Jonathan Zadra, San Diego State University, USA

## **A Mouse Interface Controlled by Teeth-Clenching**

Hyuk Jeong, ETRI, S. Korea

## **Driver's Behavior and Characteristics According to Road Convention**

Yong Wook Jeon, Tatsuru Daimon & Hironao Kawashima, Keio University, Japan

## **A Comparative Study of the Influence of Color as Culture-Dependent Design Element for Comfortable Websites**

Erika Saheki, Tomoyuki Inoue & Roberto Okada, Miyagi University, Japan

## **Online Learning Teams: Impact of Socio-Cultural Dimensions**

Datta Kaur Khalsa, University of Maryland Baltimore County, USA

## **Which Factor Determines People's Attitude Towards Knowledge Sharing: Culture or Working Experience**

Qiping Zhang, Thippaya Chintakovid & Xiaoning Sun, Drexel University, USA, Yang Ge, Qingxin Shi & Kan Zhang, Chinese Academy of Sciences, China

## **Methods for Deriving Customized Content of Adaptive Information**

Michael Albers, University of Memphis, USA

## **Pedagogical Usability Checklist for EFL E-learning Websites**

Chang Joo Lim, Korea Polytechnic University, S. Korea & Sangmin Lee, Woosong University, S. Korea

## **Surgical Residency Time-Study and System Analysis**

Sommer Alexander, Rhonda Struck, Carl Getto & David Zimmerman, University of Wisconsin-Madison, USA

## **Forecast of Delay Time in Teleoperation Systems by Neural Network (Feed-Forward Backpropagation)**

Seyed Mohamad, Amir Hosseiniapanah & Reza Sharifi, Bu Ali Sina University, Iran

## **Computer-Based Training and Multimedia Technology: Mitigating Cognitive and Usability Demands**

Sandro Scielzo, Yaela Dahan, Joseph Lopez, Shawn Stafford & Stephen Fiore, University of Central Florida, USA

## **RESTER: Reusable TODO Synthesizer**

Hiroshi Tsuji, Akinori Kageyama & Ryosuke Saga, Osaka Prefecture University, Japan

## **Is High Information and Communication Technology (ICT) Use a Risk Factor for Developing Psychological Symptoms?**

Sara Thomee, Sahlgrenska Academy & University Hospital, Sweden, GFS Student Health Center, Sweden & Mats Hagberg, Sahlgrenska Academy at Göteborg University, Sweden

## **A Card Sort Methodology to Define Website Information Architectures**

Ed Madigan & Kristen Miller, Sprint, USA

## **Usability Evaluation of the TTE@40 Portal**

Robert Neureiter, Bettina Thurnher & Monika Lanzenberger, Vienna University of Technology, Austria

## **Experiences in and Developing and Delivering a Commercial Eyetracking Service**

John Eklund, Access Testing Centre, Australia

## **Usability Laboratory for Media Communication Systems**

Mitsuhiko Karashima, Tokai University, Japan, Naotake Hirasawa, Otaru University of Commerce, Japan, Shouichi Hosoda, Sapporo Showa Woman's University, Japan, Hiromi Nishiguchi & Akiko Nitta, Tokai University, Japan

## **Education, Democracy, Finance and Bangladesh**

Abdullah Mamun, Bangladesh Supreme Court Bar Association, Bangladesh

## **Adult Education and Bangladesh**

Abdullah Mamun, Bangladesh Supreme Court Bar Association, Bangladesh

## **Discovery in Design: People-Centred Computational Environments**

Jan Noyes, University of Bristol, United Kingdom

## **2D Versus 3D in Virtual Reality, a Comparison**

Kathleen Kihmm, University of Hawaii, USA, Stanley Saiki, Pacific Telehealth Technology Hui, USA, Andrei Sherstyuk, University of Hawaii, USA, Dale Alverson & Thomas Caudell, University of New Mexico, USA

## **Collaborative Sensemaking Support System (CS3)**

Marco Trevino & Celestine Ntuen, North Carolina A&T state University, USA

## **Evaluation of Relaxation Treatments for Computer Work Stress**

Yasuyuki Matsuura & Kiyoko Yokoyama, Nagoya City University, Japan, Hiroki Takada, Nagoya University, Japan, Tom Shiozawa, Nihon University, Japan & Masaru Miyao, Nagoya University, Japan

## **Interacting in a Mobile Virtual World**

Harald Kunczler, Telecommunications Research Center Vienna, Austria

## **Two Way Web**

Jon Schull & Tristan O'Tierney, Rochester Institute of Technology, USA, Mike Axelrod, Excellus, USA & John Resig, Rochester Institute of Technology, USA

## **A Fundamental Study Toward Evaluation System for Postural Control Using Sway Velocity**

Tatsuhiko Kimura, Tokai University, Japan, Yoshiaki Hayasaka, Iwate Prefectural University, Japan, Takashi Itoh, Nippon Medical School, Japan, Kiyoyuki Yamazaki & Kenji Ikeda, Tokai University, Japan

## **Sign Language Learning System Using Cellular Phone**

Tsuyoshi Matsukawa & Kiyoko Yokoyama, Nagoya City University, Japan

## **Dynamic Auditory Hierarchies for Collaborative Virtual Environment (CVE) Awareness—Navigation and Interaction**

Jordi Hernandez & Sam Redfern, National University of Ireland, Galway, Ireland

## **From Concept to Flightline: User-Centered Design for Aircraft Maintenance Systems**

David Kancler, University of Dayton Research Institute, USA, Scott Bachmann, NCI Information Systems, Inc., USA, Christopher Curtis, Air Force Research Laboratory, USA & Darryl Stimson, NCI Information Systems, Inc., USA

## **Performance-Based Measurement and Analysis of Clutter in Electronic Charts**

Maura Lohrenz, Geary Layne, Stephanie Edwards & Marlin Gendron, Naval Research Laboratory, USA

## **Development and Assessment of a Virtual Reality System for Exercise Promotion**

Yumiko Inoue & Mieko Ohsuga, Osaka Institute of Technology, Japan

## **Hazards of Visual Displays: Adverse Side Effects Brought about by Different Pattern Movement**

Cyriel Diels & Peter Howarth, Loughborough University, United Kingdom

## **Understanding Train Driver Route Knowledge—Development of a Model of Situation Awareness**

Elaine Grimes, Rail Safety and Standard Board, United Kingdom

## **Adding Automatic Tool for Accessibility Check in a CMS**

Patrizia Andronico, Marco Andreini & Cristian Lucchesi, IIT-CNR, Italy

# & Posters

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## **MAUSE: A Usability Community**

Ebba Hvannberg, University of Iceland, Iceland, Effie Law, ETH-Zurich, Switzerland, Gilbert Cockton, University of Sunderland, United Kingdom, Philippe Palanque, Universite Paul Sabatier, France, Mark Springett, Middlesex University, United Kingdom, Christian Stary, University of Linz, Austria & Jean Vanderdonckt, Universite Catholique de Louvain (UCL), Belgium

## **Optimal Touchscreen Display Object Sizes for Microgravity**

Sarah Everett & Kritina Holden, Lockheed Martin Space Operations, USA & Mihriban Whitmore, NASA Johnson Space Center, USA

## **Computational Sensemaking Model Architecture (SMA): A Conceptual Model**

Paul Munya & Celestine Ntuen, North Carolina A&T State University, USA

## **Determining Human Factors Requirements for Wireless Headsets in Space**

Phillip Chung, Rice University, USA, Lena Norris & Kritina Holden, Lockheed Martin Space Operations, USA & Mihriban Whitmore, NASA Johnson Space Center, USA

## **Fast Focus: The Use of a Collaboration Engineering Methodology to Develop a Virtual Data Conferencing Focus Group Application**

Daniel Mittleman, DePaul University, USA & Robert Briggs, GroupSystems.com, USA

## **Exposure During Use of Small Keyboards on Mobile Phones—Posture and Physical Load Among Young Adults**

Ewa Gustafsson, Sahlgrenska Academy at Goteborg University, Sweden

## **A Trial on Mathematical Comparison with Electromyography for Perineal Muscles in the Incontinent**

Hiroki Takada, Nagoya University, Japan, Yoriko Watanabe, Seirei Christopher College, Japan, Tom Shiozawa, Nihon University, Japan, Hitoshi Kawasaki, Aoyama Gakuin University, Japan & Masaru Miyao, Nagoya University, Japan

## **PROLEARN—The Network of Excellence “PROfessional LEARNING”**

Effie Law, ETH-Zurich, Switzerland

## **Development of a Biofeedback Training Method for Prevention Against Stress Urinary Incontinence**

Tom Shiozawa, Nihon University, Japan, Miwa Yahagi & Shigeyuki Suzuki, Nagoya University, Yoriko Watanabe, Seirei Christopher College, Japan, Masumi Takada, Hiroki Takada & Masaru Miyao, Nagoya University, Hitoshi Tsunashima, Nihon University, Japan, Shintaro Gomi & Hitoshi Kawasaki, Aoyama Gakuin University, Japan

## **Building a Mobile Tool that Integrates Problem-Solving and Learning Processes to Support Creativity**

Mikko Ahonen, University of Tampere, Finland

## **A Human Hand Simulation System**

Beifang Yi, Frederick Harris & Sergiu Dascalu, University of Nevada, Reno, USA

## **Increasing Understanding of a New Environment Using Location-Based Notification Systems**

Miten Sampat, Virginia Polytechnic Institute & State University, USA, Anupam Kumar & Akshai Prakash, Virginia Tech, USA & D. Scott McCrickard, Virginia Polytechnic Institute & State University, USA

## **Do You Hear Voices? Exploring Notification Characteristics of Voice**

Saurabh Bhatia, Virginia Polytechnic Institute & State University, USA, Sam Edwards & Joe Stegner, Virginia Tech, USA & D. Scott McCrickard, Virginia Polytechnic Institute & State University, USA

## **The Effects of Novelty on Brain Computer Interfaces**

Sarah Mitchell, Tristan O'Tierney & Jessica Bayliss, Rochester Institute of Technology, USA

## **Integrating Claim Quality and Risk into a Usability Engineering Tool**

Mathew Davis & Kai Tang, Virginia Tech, USA, Jaime Smith & D. Scott McCrickard, Virginia Polytechnic Institute & State University, USA

## **Form Meets Function: A Software Development Experience**

Edwin Bachetti, Virginia Tech, USA, & D. Scott McCrickard, Virginia Polytechnic Institute & State University, USA

## **Seamless Interactions Between Real and Virtual Environments**

Serjin Oh, Youngho Lee & Woontack Woo, Gwangju Institute of Science & Technology, S. Korea

## **Study of Japanese Sign Language Comprehension Mechanisms Based on N400 Analysis**

Hisaya Tanaka, Kogakuin University, Japan, Ichiro Miyamoto, Oki Electric Industry Co. Ltd., Japan, Yuji Nagashima, Kogakuin University, Japan & Koichi Takeuchi, Oki Electric Industry Co. Ltd., Japan

## **Mapping Usability to the End-to-End Customer Experience**

Jason Whitney, Clyde Heppner & Brian Landers, Sprint, USA

## **Date is Skin Deep: The Importance of Photo in Date Selection for Online Dating Site**

Nan Tu, Tsinghua University, China

## **Demonstrations**

### **An Immersive, Cultural Training System**

Chris McCollum, Vance Sounders & Larry Rosenzweig, CHI Systems, Inc., USA

### **User-Centered Development (UCD) for Smart Phones: Demonstration of an Practical Mobile Example—The Mobile Learning Engine (MLE) a User Centered Approach**

Alexander Nischelwitzer, University of Applied Sciences Joanneum, Austria, Andreas Holzinger, Graz Medical University, Austria & Matthias Meisenberger, Graz University of Applied Sciences, Austria

### **The Quantitative Assessment of Dysarthric Speech for Use in Evidence—Based Speech Therapy**

William Simm, Lancaster University, United Kingdom

### **A Study on Interface Design for Digital Map**

Lim Jung Hoon, Kookmin University, S. Korea & Choi Eun Rim, Seoul National University, S. Korea

### **Community Learning and Innovation Initiative Portal User-Interface Design Project**

Andrew Stricker & Elizabeth Stricker, Vanderbilt University, USA

### **A Search Engine Interface Responsive to the Topic Narrowing Paradigm**

Kemal Efe & Alp Asutay, University of Louisiana, USA

### **Human Interface and the Management of Information**

Amedzor Kwaku-Mensah, Ghana

### **Community Dynamics in Musical Creativity**

Atau Tanaka, Sony CSL Paris, France

### **A Virtual Reality System for Empirical Evaluation Studies**

Jacquelyn Ford Morie, University of Southern California, USA

### **SoundScapes: Volumetric Information Space**

Anthony Lewis-Brooks, Aalborg University Esbjerg, Denmark

# Program

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**Xiaowen Fang**

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## Ergonomics and Health Aspects of Work with Computers

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Pascale Carayon, *USA*

Arne Aaras, *Norway*  
Barbara G.F. Cohen, *USA*  
Marvin J. Dainoff, *USA*  
Wolfgang Friesdorf, *Germany*  
Martin Helander, *Singapore*  
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Susumu Saito, *Japan*  
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Dominique L. Scapin, *France*  
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Naomi Swanson, *USA*  
Peter Vink, *Netherlands*  
John Wilson, *United Kingdom*

## Human Interface and the Management of Information

**Program Chair:**  
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Gunilla Bradley, *Sweden*  
Hans-Jörg Bullinger, *Germany*  
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Tsutomu Tabe, *Japan*  
Alvaro Taveira, *USA*  
Kim-Phuong L. Vu, *USA*  
Sakae Yamamoto, *Japan*  
Hidekazu Yoshikawa, *Japan*  
Li Zheng, *PRC*  
Bernhard Zimolong, *Germany*

## Human-Computer Interaction

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Xiaowen Fang, *USA*  
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Patrick Rau, *PRC*  
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Holly Vitense, *USA*  
Tomio Watanabe, *Japan*  
Nong Ye, *USA*  
Wenli Zhu, *PRC*

## Augmented Cognition

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Susan Chipman, *USA*  
Blair Dickson, *United Kingdom*  
Henry Girolamo, *USA*  
Peter Hancock, *USA*  
Eric Horvitz, *USA*  
Wilhelm Kincses, *Germany*  
Robert Matthews, *Australia*  
Klaus-Robert Mueller, *Germany*  
Denise Nicholson, *USA*  
Dennis Proffitt, *USA*  
Mark Scerbo, *USA*  
George Solhan, *USA*  
Kay Stanney, *USA*  
Robert Taylor, *United Kingdom*  
John Wagner, *USA*

# Boards

## Universal Access in Human-Computer Interaction

### Program Chair:

Constantine Stephanidis, *Greece*

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Elizabeth Andre, *Germany*

Margherita Antona, *Greece*

Christian Buhler, *Germany*

Noelle Carbonell, *France*

Pier Luigi Emiliani, *Italy*

Michael Fairhurst, *United Kingdom*

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Arthur Karshmer, *USA*

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George Kouroupetroglou, *Greece*

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# General Info

## Registration

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

Thursday, July 21	4 pm – 7 pm
Friday, July 22	7:30 am – 5 pm
Saturday, July 23	7:30 am – 5 pm
Sunday, July 24	7:30 am – 5 pm
Monday, July 25	7:30 am – 6 pm
Tuesday, July 26	7:30 am – 6 pm
Wednesday, July 27	7:30 am – 6 pm

The Conference registration fee includes participation in all open parallel technical sessions (excluding tutorials, which require additional payment of fees), refreshment breaks, CD with conference proceedings of all seven conferences, and one ticket for the reception.

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

## Cyber Cafe

Next to the Registration Desk • Office 4 • Promenade Level

Ten computers with Internet connections are available for use by conference registrants at the following times:

Sunday, July 24	12 noon – 5 pm
Monday, July 25	8 am – 5 pm
Tuesday, July 26	8 am – 5 pm
Wednesday, July 27	8 am – 5 pm

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The official bi-monthly, e-newsletter about human-computer interaction with news in the area of HCI, book reviews, upcoming conferences and events in HCI, and more. For your complimentary subscription, please contact Abbas Moallem (abbas.moallem@oracle.com) or visit [www.lists.ics.forth.gr/mailman.listinfo/hciinternational](http://www.lists.ics.forth.gr/mailman.listinfo/hciinternational).

## Tours

Tickets are still available; please inquire at Registration.

### Grand Canyon Scenic Flight

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Depart the hotel at 4 pm and scheduled return to the hotel at 7:30 pm.

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The conference will cover a broad spectrum of HCI-related themes on theoretical, generic, and applied areas of HCI through the following modes of communication: plenary/keynote presentation(s), parallel sessions, poster sessions, and tutorials. For more information, please visit the Conference Web site: [www.hci-international.org](http://www.hci-international.org).

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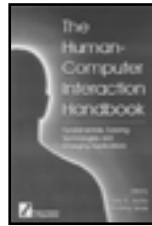
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