

HCI 2020

International

22st International Conference on Human - Computer Interaction

Thematic areas

HCI: Human-Computer Interaction

HIMI: Human Interface and the Management
of Information

Affiliated conferences

EPCE: 17th International Conference on
Engineering Psychology and Cognitive Ergonomics

UAHCI: 14th International Conference on
Universal Access in Human-Computer Interaction

VAMR: 12th International Conference on
Virtual, Augmented and Mixed Reality

CCD: 12th International Conference on
Cross-Cultural Design

SCSM: 12th International Conference on
Social Computing and Social Media

AC: 13th International Conference on
Augmented Cognition

DHM: 11th International Conference on
**Digital Human Modeling and Applications in Health,
Safety, Ergonomics & Risk Management**

DUXU: 9th International Conference on
Design, User Experience and Usability

DAPI: 8th International Conference on
Distributed, Ambient and Pervasive Interactions

HCIBGO: 7th International Conference on
HCI in Business, Government and Organizations

LCT: 7th International Conference on
Learning and Collaboration Technologies

ITAP: 6th International Conference on
Human Aspects of IT for the Aged Population

HCI-CPT: 2st International Conference on
HCI for Cybersecurity, Privacy and Trust

HCI-Games: 2st International Conference on
HCI in Games

MobiTAS: 2st International Conference on
HCI in Mobility, Transport and Automotive Systems

AIS: 2st International Conference on
Adaptive Instructional Systems

C&C: 8st International Conference on
Culture and Computing

MOBILE: 1st International Conference on
**Design, Operation and Evaluation of Mobile
Communications**

AI-HCI: 1st International Conference on
Artificial Intelligence in HCI

<http://2020.hci.international/>



Final program

19-24 July 2020

The times indicated are
in
**Central European Summer Time
CEST (Copenhagen)**

Program On-line



Under the auspices of 21 distinguished
international boards, of 492 Members
from 49 countries

2020.hci.international/program



**Conference Founder,
General Chair Emeritus and
Scientific Advisor**

Gavriel Salvendy
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Tsinghua University, P.R. China
and University of Central Florida, USA

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Table of Contents

| | |
|--|-----------|
| Conference contacts | 2 |
| Conference at a Glance | 3 |
| Welcome Note | 4 |
| Plenary Session | 5 |
| International Program Boards | 6 - 7 |
| Proceedings | 8 |
| General Information | 9 |
| Parallel Sessions | 10 - 104 |
| Sunday 19 July 2020, 17:00-21:30 | 10 - 25 |
| Monday 20 July 2020, 09:00-13:30 | 26 - 41 |
| Tuesday 21 July 2020, 10:00-14:30 | 42 - 57 |
| Wednesday 22 July 2020, 11:00-15:30 | 58 - 72 |
| Thursday 23 July 2020, 14:00- 18:30 | 73 - 88 |
| Friday 24 July 2020, 17:00 – 21:30 | 89 - 104 |
| Note: The times indicated are in "Central European Summer Time - CEST (Copenhagen)" | |
| Posters | |
| Sunday, 19 July - Friday, 24 July 2020 | 106 - 126 |

Conference at a Glance

Conference Program Overview

The times indicated are in
“Central European Summer Time - CEST (Copenhagen)”

You can check and calculate your local time, using an online time conversion tool,
 such as www.timeanddate.com

PROGRAM

| | | | |
|-----------------------------|------------------------|--|---|
| Sunday 19 July | 17:00-21:30 All Day | Parallel sessions with paper presentations - Day 1 Poster presentations | - page 10 - page 106 |
| Monday 20 July | 09:00-13:30 All Day | Parallel sessions with paper presentations - Day 2 Poster presentations | - page 26 - page 106 |
| | 10:00-14:30 | Parallel sessions with paper presentations - Day 3 | - page 42 |
| | All Day | Poster presentations | - page 106 |
| Tuesday 21 July | 15:00-16:00 | Plenary Session Welcome - page 4 Introductions Keynote Speech - page 5 “Advancing technologies will allow us to reinvent HCI Can we use it to finally address digital interface inequality - with less effort - and to better effect?” , by: Gregg Vanderheiden Awards Announcement |  |
| Wednesday 22 July | 11:00-15:30 | Parallel sessions with paper presentations - Day 4 | - page 58 |
| | All Day | Poster presentations | - page 106 |
| Thursday 23 July | 14:00-18:30 | Parallel sessions with paper presentations - Day 5 | - page 73 |
| | All Day | Poster presentations | - page 106 |
| Friday 24 July | 14:00-18:30 | “AI in HCI” Workshop (participation by invitation) by: Helmut Degen | |
| | 17:00-19:00 | Open Seminar on “Cybersecurity and Privacy Awareness” by: Abbas Moallem | - page 9 |
| | 17:00-21:30 | Parallel sessions with paper presentations - Day 6 | - page 106 |
| | All Day | Poster presentations | - page 106 |

HCI International 2020 - Welcome Note



Gavriel Salvendy
Conference Founder,
General Chair Emeritus
and Scientific Advisor

Dear Colleague,

It is with great honor and pleasure that I welcome you to HCI International 2020, the 22nd International Conference on Human-Computer Interaction, to be held 19 – 24 July 2020. The conference was planned to be held at the AC Bella Sky Hotel and Bella Center, Copenhagen, Denmark, but due to the COVID-19 coronavirus pandemic and the decision of the Danish government not to allow events larger than 500 people to be hosted until the 1st of September 2020, it will be held virtually.

HCI 2020 incorporates 21 Affiliated Conferences / Thematic Areas:

- HCI: Human-Computer Interaction Thematic Area
- HIMI: Human Interface and the Management of Information Thematic Area
- EPCE: 17th International Conference on Engineering Psychology and Cognitive Ergonomics
- UAHCI: 14th International Conference on Universal Access in Human-Computer Interaction
- VAMR: 12th International Conference on Virtual, Augmented and Mixed Reality
- CCD: 12th International Conference on Cross-Cultural Design
- SCSM: 12th International Conference on Social Computing and Social Media
- AC: 14th International Conference on Augmented Cognition
- DHM: 11th International Conference on Digital Human Modeling & Applications in Health, Safety, Ergonomics & Risk Management
- DUXU: 9th International Conference on Design, User Experience and Usability
- DAPI: 8th International Conference on Distributed, Ambient and Pervasive Interactions
- HCIBGO: 7th International Conference on HCI in Business, Government and Organizations
- LCT: 7th International Conference on Learning and Collaboration Technologies
- ITAP: 6th International Conference on Human Aspects of IT for the Aged Population
- HCI-CPT: 2nd International Conference on HCI for Cybersecurity, Privacy and Trust
- HCI-Games: 2nd International Conference on HCI in Games
- MobiTAS: 2nd International Conference on HCI in Mobility, Transport and Automotive Systems
- AIS: 2nd International Conference on Adaptive Instructional Systems
- C&C: 8th International Conference on Culture and Computing
- MOBILE: 1st International Conference on Design, Operation and Evaluation of Mobile Communications
- AI-HCI: 1st International Conference on Artificial Intelligence in HCI



Constantine Stephanidis
General Chair HCI 2020

HCI International is the worldwide renowned international forum for the dissemination and exchange of up-to-date scientific information on theoretical, generic and applied areas of Human-Computer Interaction.

Like its predecessor conferences, HCII 2020 promises to be an unforgettable cluster of high quality international scientific events, and an ideal occasion to come to be exposed to the rapidly evolving ICT market in the world. The Thematic Areas / Affiliated Conferences of HCII 2020 explore a wide variety of new hot topics which reflect and contribute to a paradigm shift towards ubiquitous interaction, intelligent environments and interactive technologies supporting all aspects of human life and activities in a global and social perspective.

The Conference Proceedings are published by Springer in the Lecture Notes in Computer Science (LNCS), Lecture Notes in Artificial Intelligence (LNAI) and Communications in Computer and Information Science (CCIS) series and are available on-line through the SpringerLink Digital Library (<http://www.springer.com/lncs> and <http://www.springer.com/series/7899>), readily accessible by all subscribing libraries around the world.

HCII 2020 also offers the option of "Late Breaking Work", for both for papers and posters, with the corresponding volumes of the proceedings to be published after the Conference. Full papers will be included in the "HCII 2020 - Late Breaking Papers" volumes (LNCS series), while Poster Extended Abstracts will be included as short papers in the "HCII 2020 - Late Breaking Posters" volumes (CCIS series).

All Conference participants are able to browse, search, read and download in PDF format, the initial 40 volumes of the Proceedings already available through their conference (CMS) account. After the conference, the "Late Breaking Work" volumes of the proceedings will also become available, all together forming the full set of the HCII 2020 Conference Proceedings. Springer also offers for sale all volumes, individually and as a full set, in soft cover, with a significant discount for authors.

An impressive number of more than 2,350 individuals from 77 countries are participating in this truly international in scope event, where the work of world leaders in the field is presented.

We are privileged to have Professor Gregg Vanderheiden, School of Information Studies, University of Maryland, Director of the Trace R&D Center and Co-Director of Raising the Floor – International and the Global Public Inclusive Infrastructure Project, joining us as the keynote speaker at the plenary session. His speech is entitled: "Advancing technologies will allow us to reinvent HCI. Can we use it to finally address digital interface inequality - with less effort - and to better effect?"

As established in previous years, twenty-two awards will be conferred during the Plenary Session. The awards, in the form of a certificate, will be presented to the author(s) of the Best Paper of each Thematic Area / Affiliated Conference and of the Best Poster Extended Abstract.

I would like to thank each and every one of you for your valuable contribution towards the success of this Conference, and to wish you a professionally rewarding and enjoyable attendance of the virtual HCII 2020 Conference.

We are hopeful that the current situation with the pandemic will improve and allow us to meet each other in person next year for the HCII 2021 conference, scheduled to take place at the Washington Hilton Hotel, Washington DC, USA, 24-29 July 2021. And as we were obliged to miss Copenhagen this year, we are planning to schedule the conference venue there for 2023.

We look forward to welcoming you to the virtual HCI International Conference 2020!

Constantine Stephanidis
General Chair

HCI International 2021

The 23rd International Conference on Human-Computer Interaction, HCI International 2021, will be held jointly with the affiliated conferences in Washington DC, USA, at the Washington Hilton Hotel, 24-29 July 2021. It will cover a broad spectrum of themes related to Human-Computer Interaction, including theoretical issues, methods, tools, processes, and case studies in HCI design, as well as novel interaction techniques, interfaces, and applications. The proceedings will be published by Springer.

General Chair: Prof. Constantine Stephanidis
University of Crete and ICS-FORTH Heraklion, Crete, Greece
Email: general_chair@hci2021.org

<http://2021.hci.international>



Plenary Session

Tuesday, 21 July 2020 | 15:00-16:00

Central European Summer Time - CEST (Copenhagen)

ADVANCING TECHNOLOGIES WILL ALLOW US TO REINVENT HCI

***Can we use it to finally address
digital interface inequality - with
less effort - and to better effect?***

Gregg Vanderheiden

Professor, School of Information Studies,
University of Maryland, United States
Director, Trace R&D Center,
University of Maryland, United States
Co-Director, Raising the Floor - International
and the Global Public Inclusive
Infrastructure Project

Abstract

When we think of access to or accessibility of ICT we often think of people with disabilities. But there is a much larger group of people who are finding it ever more difficult to learn, work or live in the increasingly "technified" world we are creating - perhaps a third of the population, young and old. Further, our current approaches to ICT access work only moderately well for today's technologies, but will not work at all for many of the next-next-generation interface technologies.

In order to create interfaces that can really revolutionize the world - for everyone - we need to 1) understand the scope of the problem today, 2) understand the impact of each person's TQ (Technology Quotient) on their ability to use our designs, 3) thoroughly explore both the barriers and the opportunities that next-next-generation interface technologies will create, and 4) look to new paradigms both for creating our (standard) interfaces and for creating alternate interfaces for those who cannot use the standard interfaces... interfaces (real and virtual) that we will be providing on almost everything and every activity in our environments.

We also need to find a different approach to creating products that are accessible/usable by all. An approach that does not expect every organization designing products to be able to understand the needs of everyone who cannot use our shipping interface, nor expect them to understand all the strategies needed to address their very varied needs. Can our emerging technologies, and a new social contract between consumers and industry, allow us to create such an alternate approach to accessibility and extended usability?



GREGG VANDERHEIDEN

Biographical Sketch

Gregg Vanderheiden Dr Vanderheiden has worked in technology and disability for just shy of 50 years. He was a pioneer in Augmentative Communication (a term he coined in the 1970's) and in cross-disability access to ICT. His work is found in every Windows and Macintosh computer, iOS and Android phone or tablet, US Automated Postal Stations, Amtrak ticket machines and many other products you encounter daily. Most of the initial access features in both Microsoft Windows and Apple Mac operating systems came from work of his research group.

Dr Vanderheiden created the first accessibility guidelines for computers and software ('85), consumer products ('91) and the web ('95)- and co-chaired both WCAG 1.0 and 2.0 working groups. He has worked with over 50 companies and numerous consumer groups and government advisory & planning committees, including the Federal Communications Commission (FCC), the National Science Foundation (NSF), National Institutes of Health (NIH), Global Mobile Suppliers Association (GSA), the United States Access Board and The White House. He has received over 35 awards for his work. Dr Vanderheiden holds a BS in Electrical Engineering, MS in Biomedical Engineering, and Ph.D in Technology in Communication and Child Development from the University of Wisconsin-Madison.

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6th International Conference on Human Aspects of IT for the Aged Population

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12th International Conference on Social Computing and Social Media

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11th International Conference on Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management

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Beatriz Sousa Santos, PORTUGAL
Leonor Teixeira, PORTUGAL
Renran Tian, USA
Dugan Um, USA
Kuan Yew Wong, MALAYSIA
S Xiong, KOREA
James Yang, USA
Zhi Zheng, USA
Rachel Zuanon, BRAZIL

9th International Conference on Design, User Experience, and Usability

Program Chairs:

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Elizabeth Rosenzweig, USA
Sisira Adikari, AUSTRALIA
Claire Ancient, UK
Silvia De los Rios, SPAIN
Marc Fabri, UK
Juliana J. Ferreira, BRAZIL
Josh Halstead, USA
Chris Hass, USA
Wei Liu, P.R. CHINA
Martin Maguire, UK
Judith A. Moldenhauer, USA
Kerem Rizvanoğlu, TURKEY
Francisco Rebelo, PORTUGAL
Christine Riedmann-Streitz, GERMANY
Patricia Search, USA
Marcelo M. Soares, P.R. CHINA
Carla G. Spinillo, BRAZIL
Virgínia Tiradentes Souto, BRAZIL

1st International Conference on Artificial Intelligence in HCI

Program Chair:

Helmut Degen, USA
Lauren Reinerman-Jones, USA
Esma Aimeur, CANADA
Iman Avazpour, AUSTRALIA
Gennaro Costagliola, ITALY
Ahmad Esmaeili, USA
Mauricio Gomez, USA
Jennifer Heier, GERMANY
Rania Hodhod, USA
Sandeep Kuttal, USA
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Rob Macredie, UK
Adina Panchea, CANADA
Giovanni Pilato, ITALY
Robert Reynolds, USA
Gustavo Rossi, ARGENTINA
Carmen Santoro, ITALY
Anil Shankar, USA
Marjorie Skubic, USA
Davide Spano, ITALY
Roberto Vezzani, ITALY
Giuliana Vitiello, ITALY

7th International Conference on Learning and Collaboration Technologies

Program Chairs:

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Andri Ioannou, CYPRUS
Ruthi Aladjem, ISRAEL
Kaushal Kumar Bhagat, INDIA
Fisnik Dalipi, SWEDEN
Camille Dickson-Deane, AUSTRALIA
Daphne Economou, UK
Maka Eradze, ITALY
David Fonseca, SPAIN
Yiannis Georgiou, CYPRUS
Preben Hansen, SWEDEN
Tomaž Klobočar, SLOVENIA
Birgy Lorenz, ESTONIA
Ana Loureiro, PORTUGAL
Alejandra Martínez-Monés, SPAIN
Markos Mentzelopoulos, UK
Antigoni Parmaxi, CYPRUS
Marcos Román González, SPAIN

12th International Conference on Cross-Cultural Design

Program Chair:

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Kuohsiang Chen, TAIWAN
Zhe Chen, P.R. CHINA
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Yu-Liang Chi, TAIWAN
Wen-Ko Chiou, TAIWAN
Zhiyong Fu, P.R. CHINA
Sheau-Farn Max Liang, TAIWAN
Pin-Chao Liao, P.R. CHINA
Dyi-Yih Michael Lin, TAIWAN
Rungtai Lin, TAIWAN
Wei Lin, TAIWAN
Yongqi Lou, P.R. CHINA
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Alexander Mädche, GERMANY
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Huatong Sun, USA
Hao Tan, P.R. CHINA
Pei-Lee Teh, MALAYSIA
Yuan-Chi Tseng, TAIWAN
Lin Wang, KOREA
Hsiu-Ping Yueh, TAIWAN
Runting Zhong, P.R. CHINA

2st International Conference on HCI in Mobility, Transport and Automotive Systems

Program Chair:

Heidi Krömker, GERMANY
Angelika C. Bullinger, GERMANY
Bertrand David, FRANCE
Marco Diana, ITALY
Christophe Kolski, FRANCE
Lutz Krauss, GERMANY
Josef F. Krems, GERMANY
Lena Levin, SWEDEN
Peter Mörtl, AUSTRIA
Gerrit Meixner, GERMANY
Lionel Robert, USA
Philipp Rode, GERMANY
Matthias Roetting, GERMANY
Thomas Schlegel, GERMANY
Ulrike Stopka, GERMANY
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| 25 | LNCS 12205 | Learning and Collaboration Technologies: Designing, Developing and Deploying Learning Experiences (Part I) | Panayiotis Zaphiris; Andri Ioannou | 978-3-030-50513-4 |
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| 40 | CCIS 1226 | HCI International 2020 Posters - Part III | Constantine Stephanidis; Margherita Antona | 978-3-030-50732-9 |

General Information

Friday, 24 July 2020 | 17:00-19:00

Central European Summer Time - CEST (Copenhagen)

SEMINAR: CYBERSECURITY AND PRIVACY AWARENESS

Abbas Moallem. Ph.D.

UX Experts, LLC - Cupertino, California, USA
Adjunct professor at San Jose State University
and California State

<http://2020.hci.international/Seminar-Cybersecurity-and-Privacy-Awareness.html>

Objectives

The digital world has fundamentally changed and continues to change the way of life for all human beings. Hacking comes from a variety of sources: individuals, spying agencies, competitors, intellectual and so on for different reasons (financial gain, political influence, information, intellectual property, trade secrets, etc.). The growth of hacking continues to be exponential.

In today's world, each of us is responsible for protecting ourselves from all sorts of cyberattacks, and for protecting our privacy as we use the Internet. Thus, it is essential to have sufficient knowledge of risks and know exactly whom/what to protect yourself from when operating within cyberspace.

The main objective of this seminar is to review the results of an extensive investigation about cybersecurity awareness knowledge and trust in social media among college students and faculty. A discussion will take place on what needs to be done to protect ourselves in cyberspace.

Content and Benefits

In the first section of this seminar, we will review the main results of investigative studies conducted in 2019 and 2020. In the second section, we will discuss what needs to be done to improve awareness and what needs to be done to protect students and faculty in cyberspace.

Awards

For each of the Thematic Areas / Affiliated Conferences of HCI International 2020 the Best Paper has been selected to receive an award in the form of a plaque and a certificate in a brief ceremony during the Plenary Session. The Best Poster extended abstract will also receive an award.



Dr. Abbas Moallem is an executive director of UX Experts, LLC and an adjunct professor at San Jose State University, California State University, East Bay, where he teaches human-computer interaction.



Dr. Moallem has over 20 years of experience in the fields of human factors, ergonomics, human-computer interaction (HCI) and usability. He has also served as a UI Architect at PeopleSoft, Oracle Corporation, Tumbleweed, and Axway for over 11 years. He also served as a senior engineering product manager and usability expert at NETGEAR. Dr. Moallem has also consulted with numerous companies that include, Sears H.C., Polycom, Cisco System, HID Global, Lam Research, and Applied Materials. Dr. Moallem has also consulted a variety of industries in Europe, and Canada.

Abbas holds a Ph.D. in Human Factors and Ergonomics from the University of Paris (Paris XIII), a Master's degree in Biomechanics from the University of Creteil (Paris XI) and a Master's degree in Ergonomics from the Conservatoire Nation des Arts et Métiers in Paris, France. Dr. Moallem obtained his B.A. degree from the University of Tehran in 1978.

Abbas recently edited a book "Human-Computer Interaction and Cybersecurity Handbook", that provides insight into how understanding human factors could change how companies invest their resources in what is currently a \$101 billion industry.

He currently serves as Communication and Exposition Chair of the HCI International and Conference and program chair of 1st International Conference on HCI for Cybersecurity, Privacy, and Trust (HCI-CPT).

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HCI S001

Multimodal and Multisensory Interaction

Chair(s): To be announced

A Human-centered Approach to Designing Gestures for Natural User Interfaces

Shannon K.T. Bailey, Cheryl I. Johnson, *United States*

Comparing a Mouse and a Free Hand Gesture Interaction Technique for 3D Object Manipulation

Joao Bernardes, *Brazil*

CountMarks: Multi-Finger Marking Menus for Mobile Interaction with Head-Mounted Displays

Jordan Pollock, Robert J. Teather, *Canada*

Single-Actuator Simultaneous Haptic Rendering for Multiple Vital Signs

Juliette Regimbal, Nusaiba Radi, Antoine Weill--Duflos, Jeremy R. Cooperstock, *Canada*

Multimodal Analysis of Preschool Children's Embodied Interaction with a Tangible Programming Environment

Marleny Luque Carbajal, M. Cecilia C. Baranauskas, *Brazil*

A Neurophysiological Sensor Suite for Real-Time Prediction of Pilot Workload in Operational Settings

Trevor Grant, Kevin Durkee, Lucca Eloy, Kaunil Dhruv, Lucas Hayne, Leanne Hirshfield, *United States*

S002

Emotions in HCI - I

Chair(s): Aarathi Prasad, *United States*

Digital Overload Warnings – “the right amount of shame”?

Aarathi Prasad, Asia Quinones, *United States*

Augmented Tension Detection in Communication: Insights from Prosodic and Content Features

Bo Zhang, Lu Xiao, *United States*

Creating Emotional Attachment with Assistive Wearables

Neda Fayazi, Lois Frankel, *Canada*

The Effects of Robot Appearances, Voice Types, and Emotions on Emotion Perception Accuracy and Subjective Perception on Robots

Sangjin Ko, Xiaozhen Liu, Jake Mamros, Emily Lawson, Haley Swaim, Chengkai Yao, Myoungsoon Jeon, *United States*

The Effects of Body Gestures and Gender on Viewer's Perception of Animated Pedagogical Agent's Emotions

Justin Cheng, Wenbin Zhou, Xingyu Lei, Nicoletta Adamo, Bedrich Benes, *United States*

Deep Learning-based Emotion Recognition from Real-Time Videos

Wenbin Zhou, Justin Cheng, Xingyu Lei, Bedrich Benes, Nicoletta Adamo, *United States*

HIMI S003

Visualization and Information Design

Chair(s): Markus Jelonek, *Germany*

Utilizing Geographical Maps for Social Visualization to Foster Awareness in Online Communities of Practice

Markus Jelonek, *Germany*

Rethinking the Usage and Experience of Clustering in Web Mapping

Loïc Fürhoff, *Switzerland*

SeeMe2BPMN: Extending the Socio-Technical Walkthrough with BPMN

Ufuk Kacmaz, Thomas Herrmann, Markus Jelonek, *Germany*

Multimodal Inspection of Product Surfaces using Mobile Consumer Devices

Christopher Martin, Annerose Braune, *Germany*

Assessing Current HMI Designs and Exploring AI Potential for Future Air-Defence System Development

YZara Gibson, Joseph Butterfield, Robin Stuart Ferguson, Karen Rafferty, Wai Yu, Alf Casement, *United Kingdom*

A Template for Data-Driven Personas: Analyzing 31 Quantitatively Oriented Persona Profiles

Joni Salminen, *Qatar*; Kathleen Guan, *Canada*; Lene Nielsen, *Denmark*; Soon-gyo Jung, *Korea*; Bernard J. Jansen, *Qatar*

EPCE S004

Approaches to Human-Autonomy Teaming - I

Chair(s): Axel Schulte, *Germany*

Mixed-Initiative Human-Automated Agents Teaming: Towards a Flexible Cooperation Framework

Caroline P.C. Chanel, Raphaëlle N. Roy, Nicolas Drougard, Frédéric Dehais, *France*

A Framework For Human-Autonomy Team Research

Nancy Cooke, Mustafa Demir, Lixiao Huang, *United States*

Spatial Knowledge Acquisition for Cognitive Maps in Autonomous Vehicles

Yue Qin, Hassan A. Karimi, *United States*

Human-Autonomy Teaming and Explainable AI Capabilities in RTS Games

Crisrael Lucero, Christianne Izumigawa, Kurt Frederiksen, Lena Nans, Rebecca Iden, Douglas Lange, *United States*

Human-Computer Interaction

Human Interface and the Management of Information

Engineering Psychology and Cognitive Ergonomics

SUNDAY 17:00 - 19:00

Universal Access in Human-Computer Interaction

UAHCI S005

Maximizing the Inclusiveness of Students with Disabilities in K 12 Formal and Informal STEM Education

Chair(s): Daniela Marghitu, *United States*

Optimized User Experience Design for Augmentative and Alternative Communication via Mobile Technology: Using Gamification to Enhance Access and Learning for Users with Severe Autism

Oliver Wendt, Natalie E. Allen, Olivia Z. Edje, Sylvia C. Nees, Megan N. Phillips, Daniella Lopez, *United States*

Usable and Accessible Robot Programming System for People Who are Visually Impaired

Juliana Damasio Oliveira, Marcia de Borba Campos, Vanessa Stangherlin Machado Paixão-Cortes, *Brazil*

Accessible Computer Science for K-12 Students with Hearing Impairments

Meenakshi Das, Daniela Marghitu, Fatemeh Jamshidi, Mahender Mandala, Ayanna Howard, *United States*

My A+ Math: Teaching Math to Students with Vision Impairment

Abhishek Jariwala, Daniela Marghitu, Richard Chapman, *United States*

Virtual, Augmented and Mixed Reality

VAMR S006

Immersive Data Visualization and Analytics

Chair(s): Simon Su, Sue Kase, *United States*

Comparative Analysis of Mission Planning and Execution Times between the Microsoft HoloLens and the Surface Touch Table

Sue Kase, Vincent Perry, Heather Roy, Katherine Cox, Simon Su, *United States*

Empeiría: Powering Future Education Training Systems with Device Agnostic Web-VR Apps

Matthew E. Miller, Yuxin Yang, Karl Kosko, Richard Ferdig, Cheng-Chang Lu, Qiang Guan, *United States*

Design and Validation of a Unity-Based Simulation to Investigate Gesture Based Control of Semi-Autonomous Vehicles

Hailey Arreola, Andrea-Nicole Flores, Amber Latham, Hanna MacNew, Kim-Phuong L. Vu, *United States*

Comparative Study Design of Multiple Coordinated Views for 2D Large High-Resolution Display with 3D Visualization using Mixed Reality Technology

Simon Su, Vincent Perry, *United States*

S007

Virtual Reality: The Future of Experimental Research

Chair(s): Maria Olinda Rodas, *United States*

Computer-Based PTSD Assessment in VR Exposure Therapy

Leili Tavabi, Anna Poon, Albert (Skip) Rizzo, Mohammad Soleymani, *United States*

Cognitive Workload Monitoring in Virtual Reality based Rescue Missions with Drones

Fabio Dell'Agnola, Niloofer Momeni, Adriana Arza, David Atienza, *Switzerland*

Engaging Place with Mixed Realities: Sharing Multisensory Experiences of Place through Community-generated Digital Content and Multimodal Interaction

Oliver Dawkins, Gareth W. Young, *Ireland*

The Impact of Virtual Reality (VR) Scaffolding Safety Training on Learning Effectiveness based on Mouse Movements Data

Chi Tian, Yunfeng Chen, *United States*

S008

User Experience in VAMR - I

Chair(s): Jean-François Lapointe, *Canada*

Towards a Predictive Framework for AR Receptivity

Jennifer M. Riley, Jesse D. Flint, Darren P. Wilson, Cali M. Fidopiastis, Kay M. Stanney, *United States*

A Literature Review of AR-based Remote Guidance Tasks with User Studies

Jean-François Lapointe, Heather Molyneaux, Mohand Saïd Allili, *Canada*

Text Input in Virtual Reality Using a Tracked Drawing Tablet

Seyed Amir Ahmad Didehkorshid, Siju Philip, Elaheh Samimi, Robert J. Teather, *Canada*

Text Entry in Virtual Reality: Implementation of FLIK Method and Text Entry Testbed

Eduardo Soto, Robert J. Teather, *Canada*

Text Entry in Virtual Reality: A Comparison of 2D and 3D Keyboard Layouts

Caglar Yildirim, Ethan Osborne, *United States*

SUNDAY 17:00 - 19:00



SCSM S009

Experiences in Social Media

Chair(s): Daniela Quiñones, *Chile*

Students' Perception on Customer eXperience: A Comparative Study

Cristian Rusu, Virginica Rusu, *Chile*; Federico Botella, *Spain*; Daniela Quiñones, *Chile*; Bogdan Alexandru Urs, Ilie Urs, *Romania*; Jenny Morales, *Chile*; Sandra Cano, *Colombia*; Silvana Aciar, Iván Balmaceda Castro, *Argentina*

Customer eXperience in Valparaíso Hostels: Analyzing Tourists' Opinions

Virginica Rusu, Cristian Rusu, Daniela Quiñones, Silvana Roncagliolo, Victoria Carvajal, Martin Muñoz, *Chile*

Customer eXperience in e-Learning: A Systematic Mapping Study

Iván Balmaceda Castro, *Argentina*; Cristian Rusu, *Chile*; Silvana Aciar, *Argentina*

Customer eXperiences in Retail: Case Studies in Physical and Virtual Channels

Camila Bascur, Cristian Rusu, Daniela Quiñones, *Chile*

Qualitative Evaluation of the Usability of a Web-Based Survey Tool to Assess Reading Comprehension and Metacognitive Strategies of University Students

Luis A. Rojas P., Maria Elena Truyol, Juan Felipe Calderon Maureira, Mayron Orellana Quiñones, Aníbal Puente, *Chile*

S010

Data, Algorithms, and Humans in Digital Manipulation - I

Chair(s): Dennis Assenmacher, Christian Grimme, Lena Clever, *Germany*

Characterizing Social Bots Spreading Financial Disinformation

Serena Tardelli, Marco Avvenuti, Maurizio Tesconi, Stefano Cresci, *Italy*

Making Reproducible Research Simple using RMarkdown and the OSF

André Calero Valdez, *Germany*

Riding the Wave of Misclassification: How we End Up with Extreme YouTube Content

Christian Stöcker, *Germany*; Mike Preuss, *Netherlands*

Dynamic Properties of Information Diffusion Networks during the 2019 Halle Terror Attack on Twitter

Philipp Kessling, Bastian Kiessling, Steffen Burkhardt, Christian Stöcker, *Germany*

Building an Integrated Comment Moderation System - Towards a Semi-Automatic Moderation Tool

Dennis M. Riehle, Marco Niemann, Jens Brunk, Dennis Assenmacher, Heike Trautmann, Jörg Becker, *Germany*

S011

HCI in MIS

Chair(s): Scott McCoy, *United States*

The Importance of Assessment and Evaluation in High-er Education Information Technology Projects

Dawn Brown, Nathan Johnson, *United States*

Instagram Stories

Cristobal Fernandez Robin, *Chile*; Scott McCoy, *United States*; Diego Yáñez, Luis Cárdenas, *Chile*

To the online education and beyond

Gonzalo Améstica, Cristobal Fernandez Robin, Diego Yáñez, *Chile*

Investigating Student Dishonesty in Business School

Matt Dean, Scott McCoy, *United States*

Intelligent Automotive Technologies are here, and Drivers are Losing Control

Brian Jones, *United States*

AC S012

Data Mining and Modeling for Augmented Cognition

Chair(s): Monte Hancock, *United States*

Biomimetic Design in Augmented Cognition

Benjamin Bowles, Monte Hancock, Mitchell Kirshner, *United States*; Taniya Shaji, *India*

Information-Theoretic Methods Applied to Dispatch of Emergency Services Data

Monte Hancock, Katherine Hancock, Marie Tree, Mitchell Kirshner, Benjamin Bowles, *United States*

The Way We Think about Ourselves

Darshan Solanki, *India*; Hsia-Ming Hsu, Jingyi (Olivia) Zhao, Renyue Zhang, Weihao Bi, Raman Kannan, *United States*

Computing with Words in Maritime Piracy and Attack Detection Systems

Jelena Tescic, Dan Tamir, Shai Neumann, Naphtali Rische, Abraham Kandel, *United States*

Feedback Control for Optimizing Human Wellness

Robert Hanlon, Monte Hancock, Chloe Lo, John Grable, Kristy Archuleta, Alexander Cohen, Chris Mazdzer, Sandra Babey, Eric Miller, Alex Nunez, *United States*

A Field Theory for Multi-Dimensional Scaling

Monte Hancock, *United States*; Nick Nuon, *Cocos Islands*; Marie Tree, Benjamin Bowles, Toni Hadgis, *United States*

No Free Lunch: Free at Last!

Ali Almashhadani, Neelang Parghi, Weihao Bi, Raman Kannan, *United States*

Social Computing and Social Media

Augmented Cognition

SUNDAY 17:00 - 19:00



AC S013

DISCUSSION PANEL: Multi-modal Assessment of Subconscious Brain Processes for Neuro Business: Combining fNIRS, EEG and mixed VR - the RHUMBO project

Chair(s): Günter Edlinger, Ren Xu, Austria

Influence of Ad Congruence and Social Cues on the Probability of Choosing a Restaurant

Aline Simonetti, Shobhit Kakaria, Enrique Bigne, Spain

Optimizing virtual reality eye tracking fixation algorithm thresholds based on shopper behavior and age

Jaikishan Khatri, Masoud Moghaddasi, Jose Llanes-Jurado, Luciano Spinella, Javier Marín-Morales, Jaime Guixeres, Mariano Alcañiz, Spain

Segmentation of Areas of Interest inside a virtual reality store

Masoud Moghaddasi, Jaikishan Khatri, Jose Llanes-Jurado, Luciano Spinella, Javier Marín-Morales, Jaime Guixeres, Mariano Alcañiz, Spain

Online Classification of Motor Imagery using EEG and fNIRS: A hybrid approach with real time Human-Computer Interaction

Gerald Hirsch, Matilde Dirodi, Ren Xu, Patrick Reitner, Christoph Guger, Austria

EEG-based Methods to Characterize Memorised Visual Space

Mauro Nascimben, Italy; Thomas Zoëga Ramsøy, Luis Emilio Bruni, Denmark

Perceived Usefulness of e-WOM Attributes on Buyer's Choice

Shobhit Kakaria, Aline Simonetti, Enrique Bigne, Spain

DHM S014

Future Digital Human Modeling

Chair(s): Vincent G. Duffy, United States

A Systematic Literature Review of Game-based Learning and Safety Management

Sameeran G. Kanade, Vincent G. Duffy, United States

Data Mining Methodology in Support of a Systematic Review of Human Aspects of Cybersecurity

Brendan M. Duffy, Vincent G. Duffy, United States

Virtual Reality and Artificial Intelligence in Mobile Computing and Applied Ergonomics: A Bibliometric and Content Analysis

Chidubem Nuela Enebechi, Vincent G. Duffy, United States

Digital Human-in-the-loop Framework

H. Onan Demirel, United States

Design and Evaluation of a Prototype of an Airbag-based Wearable Safety Jacket for Fall Accidents in Construction Working Environments

Byung Cheol Lee, United States; Byoung-chul Ji, Korea

Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management

S015

Occupational Safety and Health and Human-System Interaction - I

Chair(s): Peter Nickel, Germany

Depth and Colour Perception in Real and Virtual Robot Cells in the Context of Occupational Safety and Health

Peter Nickel, Germany

Design Methods for Human-Robot-Interaction

Nadja Fischer, Oliver Sträter, Germany

Contributions of Training Programs Supported by VR Techniques to the Prevention of STF Accidents

Anika Weber, Peter Nickel, Ulrich Hartmann, Daniel Friemert, Germany; Kiros Karamanidis, United Kingdom

Research Project beyondSPAI - The Safe and Reliable Monitoring of Adaptive Safety Zones in the Proximity of Collaborating Industrial Robots using an Intelligent InGaAs Camera System

Christof Hammer, Norbert Jung, Germany

Ensuring Trust in and Acceptance of Digitalization and Automation: Contributions of Human Factors and Ethics

Monika Eigenstetter, Germany

DUXU S016

continues...

Design and UX for AI Systems

Chair(s): Heloisa Candello, Juliana J. Ferreira, Brazil

Flatpack ML: How to support designers in creating a new generation of customizable machine learning applications

Marcus Winter, Phil Jackson, United Kingdom

BlueJourney for AI – a study beyond Design Thinking to develop Artificial Intelligence solutions

Raquel Zarattini Chebabi, Henrique Von Atzingen Amaral, Brazil

Understanding how visitors interact with voice-based conversational systems

Heloisa Candello, Fabricio Barth, Eduardo Carvalho, Ruy Alves Guimarães Cotia, Brazil

Speak to Me: Interacting with a Spoken Language Interface

XiaoJun Yuan, Ning Sa, United States

What are People doing about XAI User Experience? A Survey on AI Explainability Research and Practice

Juliana J. Ferreira, Mateus S. Monteiro, Brazil

Design, User Experience, and Usability



DUXU S017

Discussions on UX Design Methods and Practices - I

Chair(s): To be announced

How Do Designers Make User-Experience Design Decisions?

Yu-Tzu Lin, Morten Hertzum, Denmark

Creating a feedback loop between persona development and user research towards better technology acceptance

Despoina Petsani, Evdokimos Konstantinidis, Greece; Joanne Carroll, Richard Lombard-Vance, Louise Hopper, Ireland; Maria Nikolaidou, Greece; UNAI DIAZ-ORUETA, Ireland; Wolfgang Kniejski, Germany; Panagiotis Bamidis, Greece

Positioning Participant Engagement in Participatory Design

Ziheng Zhang, Francesco Zurlo, Italy

Understanding User Engagement in Information & Communications Technology for Development: An Exploratory Study

Touchukwu Arinze Ikwunne, Lucy Hederman, Patrick Wall, Ireland

Should We Measure UX Differently?

Apala Lahiri Chavan, Girish Prabhu, India

Using traditional research methods in contemporary ux surveying

Csilla Herendy, Hungary

S018

UX Design Methods and Frameworks

Chair(s): Zohreh Dehghani Champiri, Canada

House of Prototyping Guidelines: A Framework to Develop Theoretical Prototyping Strategies for Human-Centered Design

Salman Ahmed, H. Onan Demirel, United States

Identifying interaction patterns for face recognition interfaces through research, prototyping and testing

Flavio Ribeiro, Guto Kawakami, Taynah Miyagawa, Brazil

Toward a Disability-Centric Model of User Participation in Accessibility Efforts: Lessons from a Case Study of School Children

Alison Gavine, Frank Spillers, United States

The Aware User Experience Model, its Method of Construction and Derived Heuristics

Jorge Maya, Natalia Ariza, Colombia

A Reusable Approach to Software Support for Adaptive Navigation

Yonglei Tao, United States

DAPI S019

Computing with and for the Senses

Chair(s): Yasmine Abbas, Felecia Davis, United States

Smells as an Interactive Material for Spatial Designing

Jyoti Kapur, Sweden

Circuit Game: A Craft-based Electronic Building Practice

Farzaneh Oghazian, Felecia Davis, United States

Responsive Origami - A Modular Approach to Fabricate Dynamic Surfaces Reactive to Socio-Environmental Conditions

Mostafa Alani, Iraq; Michael Kleiss, Arash Soleimani, United States

Design of Real-time Individualized Comfort Monitoring System in Healthcare Facilities

Julian Wang, Yanxiao Feng, Nan Wang, United States

Distributed, Ambient and Pervasive Interactions

HCIBGO S020

HCI in Business and Organizations - I

Chair(s): Fiona Nah, United States

A Review on Eye-tracking Metrics for Sleepiness

Debasis Roy, Fiona Nah, United States

Effectiveness of Banner Ads: An Eye Tracking and Facial Expression Analysis

Thanh-An Nguyen, Constantinos Coursaris, Pierre-Majorique Léger, Sylvain Sénécal, Marc Fredette, Canada

Insights from the Apple Human Interface Guidelines on Intuitive Interaction

Dan McAran, Norman Shaw, Canada

COVID-19 Pandemic – Role of Technology in Transforming Business to the New Normal

Fiona Nah, Keng Siau, United States

Effects of Online Reviews on Consumer Evaluation of Products: How Are They Different among Search, Experience and Credence Products?

Weiling Ke, Xiaorong Aileen Guo, United States

A Comparative Study of Data Augmentation Methods for Brand Logo Classifiers

Aléssio Miranda Júnior, Matheus Moraes, Marcelo Sousa Balbino, Brazil

HCI in Business, Government and Organizations



| LCT S021 | S022 | ITAP S023 | S024 continues... |
|--|--|---|--|
| <p>Supporting Teachers Chair(s): Tiantian Jin, <i>United States</i></p> | <p>Learning Experience Studies Chair(s): Mark Dixon, <i>United Kingdom</i></p> | <p>New Media Use in the Everyday Life of Older People - I Chair(s): Eugène Loos, <i>Netherlands</i></p> | <p>Digitization in Health over the Lifespan Chair(s): Peter Rasche, <i>Germany</i></p> |
| <p>The Current State of m-Learning in Higher Education: A Survey Study of Mobile Technology Usage in the Classroom Tiantian Jin, Kinta D. Montilus, Alison Moore, Quincy Conley, <i>United States</i></p> | <p>User Experience Evaluation of an e-Assessment System Sidra Iftikhar, Ana-Elena Guerrero Roldan, Enric Mor, David Bañeres, <i>Spain</i></p> | <p>Are Digital Twins becoming our Personal (predictive) Advisors? 'Our Digital Mirror of Who We Were, Who We Are and Who We Will Become' Christel De Maeyer, <i>Belgium</i>; Panos Markopoulos, <i>Netherlands</i></p> | <p>Digital Health Engineering and Entrepreneurial Innovation – Education for the Development of ICT for Older Adults Andrea Greven, Peter Rasche, Cara Droege, Alexander Mertens, <i>Germany</i></p> |
| <p>On the Design of a Teachers' Dashboard: Requirements and Insights Pedro Isaias, <i>Australia</i>; Adriana Backx Noronha Viana, <i>Brazil</i></p> | <p>Usability Testing of a Digital Competence Assessment and Certification System Aleksandra Sobodic, Igor Balaban, <i>Croatia</i></p> | <p>Age and the City: The Case of Smart Mobility Maria Sourbati, <i>United Kingdom</i></p> | <p>Practical Evaluation of the Emergency Usability Lab for Testing the Usability of Medical Devices in Emergency Situations Peter Rasche, Moritz Richter, Katharina Schäfer, Sabine Theis, Verena Nitsch, Alexander Mertens, <i>Germany</i></p> |
| <p>Applied Webservices Platform supported through Modified Edit Distance Algorithm: Automated Phonetic Transcription Grading Tool (APTgt) Cheryl D. Seals, Sicheng Li, Marisha Speights Atkins, Dallin Bailey, Jueting Liu, Yang Cao, Robertson Bassy, <i>United States</i></p> | <p>Evaluating Portable Touch Projectors in the Context of Digital Education Marcel Schmittchen, Arind Avdullahu, <i>Germany</i>;</p> | <p>To Do or Not to Do: How Socio-Demographic Characteristics of Older Adults are Associated with Online Activities Joerg Leukel, Barbara Schehl, <i>Germany</i>; Vijayan Sugumaran, <i>United States</i></p> | <p>Perceived Self-efficacy in Parkinson's Disease Through Mobile Health Monitoring Sabine Theis, Dajana Schäfer, Christina Haubrich, Christopher Brandl, Matthias Wille, <i>Germany</i>; Sonja A. Kotz, <i>Netherlands</i>; Verena Nitsch, Alexander Mertens, <i>Germany</i></p> |
| <p>Mudpoint: Evaluating Instructor Perception on a Continuous and Non-specific Feedback System Jamshidbek Mirzakhlov, Anoop Babu, Marvin Andujar, <i>United States</i></p> | <p>A Comparative Usability Study of Blackboard and Desire2Learn: Students' Perspective Obead Alhadreti, <i>Saudi Arabia</i></p> | <p>Internet Use and Loneliness among Older Adults: The Moderating Role of Self-Perceptions of Ageing Wenqian Xu, <i>Sweden</i>; Hanna Köttl, <i>Israel</i></p> | <p>Agent-based Simulation of Medical Care Processes in Rural Areas with the Aid of Current Data on ICT Usage Readiness Among Elderly Patients Christina Büsing, Sabrina Schmitz, Mariia Anapolska, Sabine Theis, Matthias Wille, Christopher Brandl, Verena Nitsch, Alexander Mertens, <i>Germany</i></p> |
| <p>How Virtual Reality is Changing the Future of Learning in K-12 and Beyond Marta Adzgauskaitė, Kaveh Abhari, Michael Pesavento, <i>United States</i></p> | <p>The Influential Factors on E-learning Adoption and Learning Continuance Meryem Harzallah, Nizar Omheni, <i>Tunisia</i></p> | <p>The Impact of the Relationship and Family Status in Retirement Age on Women's Incorporation of Technical Devices in their Everyday Life Alina Gales, <i>Germany</i>; Eugène Loos, <i>Netherlands</i></p> | <p>ICF-based Analysis of Barriers and Facilitators for Smartphone Usage in an App-supported Training Program for Health and Well-Being of Older Users Anke Osterhoff, Liane Günther, Christian Thiel, Christian Grüneberg, Sascha Sommer, <i>Germany</i></p> |
| | <p>Tangible Storytelling to learn the Four Seasons: Design and Preliminary Observations Wafa Almukadi, <i>Saudi Arabia</i></p> | <p>Implementing a Digital Wellness Application into Use – Challenges and Solutions among Aged People Tuomas Kari, Anna Sell, Markus Makkonen, Stina Wallin, Pirkko Walden, Christer Carlsson, Lauri Frank, Joanna Carlsson, <i>Finland</i></p> | |

Learning and Collaboration Technologies

Human Aspects of IT for the Aged Population

SUNDAY 17:00 - 19:00



ITAP S025

Responsible Design for Ageing: a Multidisciplinary Perspective

Chair(s): Hua Dong, *United Kingdom*

Value and values in inclusive design

Haiou Zhu, Thorsten Gruber, Hua Dong, *United Kingdom*

Technology Development with Older People: The Role of "Unfettered Design"

Björn Fischer, Britt Östlund, *Sweden*

Active Participation of Older Adults in the Development of Stimulus Material in an Storytelling Context

Torben Volkmann, Deniz Akyildiz, Nikolas Knickrehm, Fabian Vorholt, Nicole Jochems, *Germany*

Home as Experience: The Challenge and Opportunity of Care Home Design

Ying Jiang, *P.R. China*; Hua Dong, *United Kingdom*

Expectations and Sensemaking: Older People and Care Robots

Susanne Frennert, *Sweden*

HCI-CPT S026

Human Factors in Cybersecurity - I

Chair(s): Heather Molyneaux, *Canada*

The Man in the Besieged Castle: Heuristic Evaluation of Home Security Systems

Luis Martín Sánchez-Adame, Sonia Mendoza, Beatriz A. González-Beltrán, Amílcar Meneses-Viveros, José Rodríguez, *Mexico*

Security Matters ... Until Something Else Matters More: Security Notifications on Different Form Factors

Heather Molyneaux, Elizabeth Stobert, Irina Kondratova, Manon Gaudet, *Canada*

Authentication of choice on mobile devices: A preliminary investigation

Akintunde Jeremiah Oluwafemi, Jinjuan Feng, *United States*

Mental Model Mapping Method for Cybersecurity

Kaur Kullman, Laurin Buchanan, Anita Komlodi, Don Engel, *United States*

Awareness and Working Knowledge of Secure Design Principles: A User Study

May Almousa, Mahsa Keshavarz, Mohd Anwar, *United States*

MobiTAS S027

Experience Design and Mobility

Chair(s): Jung Hyup Kim, *United States*

Effective Alerts for Autonomous Solutions to Aid Drivers Experiencing Medical Anomalies

Mariah Havro, Tony Morelli, *United States*

The Effects of Collision Avoidance Warning Systems on Driver's Visual Behaviors

Jung Hyup Kim, *United States*

Expert Cyclist Route Planning: Hazards, Preferences, and Information Sources

Mary Still, *United States*

BLOKCAR: a Children Entertainment System to Enrich and Enhance Family Car Travel Experience

Hsin-Man Wu, Zhenyu Cheryl Qian, Yingjie (Victor) Chen, *United States*

PRONTOMovel – A Way of Transporting Creativity and Technology

Regiane Pupo, *Brazil*

UI Proposal for Shared Autonomous Vehicles: Focusing on Improving User's Trust

Minhee Lee, Younjoon Lee, *Korea*

AIS S028

Methods of Human Interaction in Support of Adaptive Instruction

Chair(s): Thomas E.F. Witte, *Germany*

The Impact of Adaptive Activities in Acrobatiq Courseware: Investigating the Efficacy of Formative Adaptive Activities on Learning Estimates and Summative Assessment Scores

Rachel Van Campenhout, Bill Jerome, Benny Johnson, *United States*

Exploring Video Engagement in an Intelligent Tutoring System

David Quigley, Donna Caccamise, John Weatherley, Peter Foltz, *United States*

Towards Iteration by Design: An Interaction Design Concept for Safety Critical Systems

Thomas E.F. Witte, Jonas D. Hasbach, Jessica Schwarz, Verena Nitsch, *Germany*

Supporting Metacognitive Learning Strategies through an Adaptive Application

Rachel Van Campenhout, *United States*

Usability Dimensions of Simulated Detectors for Improvised Explosive Devices

Crystal Maraj, Jonathan Hurter, Deen Reed, Clive Hoayun, Adam Moodie, Latika "Bonnie" Eifert, *United States*

HCI for Cybersecurity, Privacy and Trust

HCI in Mobility, Transport and Automotive Systems

Adaptive Instructional Systems



AIS S029

Conceptual Modeling of Adaptive Instructional Systems (AISs)

Chair(s): Robert A. Sottolare, *United States*

Does Gamification Work? Analyzing Effects of Game Features on Learning in an Adaptive Scenario-Based Trainer

Cheryl I. Johnson, Shannon K.T. Bailey, Alyssa D. Mercado, *United States*

Representing Functional Relationships of Adaptive Instructional Systems in a Conceptual Model

Robert A. Sottolare, Anne Knowles, Jim Goodell, *United States*

A Learning Engineering Model for Learner-Centered Adaptive Systems

Jim Goodell, KP Thai, *United States*

Bridging Conceptual Models and Architectural Interchange for Adaptive Instructional Systems

Keith Brawner, *United States*

Artificial Intelligence in HCI

AI-HCI S030

AI for Core Tasks in Application Domains - I

Chair(s): Donald M. Allen, *United States*

Customer Self-Remediation of Proactive Network Issue Detection and Notification

Donald M. Allen, *United States*; Dmitry Goloubew, *Belgium*

Educators in the Loop: Using Scenario Simulation as a Tool to Understand and Investigate Predictive Models of Student Dropout Risk in Distance Learning

Rômulo Freitas, Luciana Salgado, *Brazil*

Why Did the Robot Cross the Road? A User Study of Reasoning and Explanation in Human-Robot Interaction

Zac Taschdjian, *United States*

Explainable Classification of EEG Data for an Active Touch Task using Shapley Values

Haneen Alsuradi, *United States*; Wanjoo Park, Mohamad Eid, *United Arab Emirates*

NOTES

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HCI S031

Trust and Transparency

Chair(s): Masooda Bashir, *United States*

An Examination of Dispositional Trust in Human and Autonomous System Interactions

Priscilla Ferronato, Masooda Bashir, *United States*

The Impact of Trust and Fairness on Information System's Resistance

Zoubeir Tkiouat, Ryad Titah, Pierre-Majorique Léger, *Canada*

CollegeBot: A Conversational AI Approach to Help Students Navigate College

Mohinish Daswani, Kavina Desai, Mili Patel, Reeya Vani, Magdalini Eirinaki, *United States*

Effects of Reputation, Organization, and Readability on Trustworthiness Perceptions of Computer Code

Gene M. Alarcon, Anthony M. Gibson, Sarah A. Jessup, August Capiola, Haider Raad, Michael A. Lee, *United States*

Are all Perfect Automation Schemas Equal? Testing Differential Item Functioning in Programmers versus the General Public

Anthony M. Gibson, Tyler T. Ryan, Gene M. Alarcon, Sarah A. Jessup, Izz Aldin Hamdan, August Capiola, *United States*

S032

Input Methods and Techniques - I

Chair(s): Lora Streeter, *United States*

Automatic Page-Turner for Pianists with Wearable Motion Detector

Seyed Ali Mirazimzadeh, Victoria McArthur, *Canada*

Detecting Gestures through a Gesture-Based Interface to Teach Introductory Programming Concepts

Lora Streeter, John Gauch, *United States*

A Virtual Mouse Interface for Supporting Multi-User Interactions

Matthew Peveler, Jeffery O. Kephart, Xiangyang Mou, Gordon Clement, Hui Su, *United States*

A Comparative Study of Hand Gesture Recognition Devices for Games

Ahmed S. Khalaf, Sultan A. Alharthi, Ali Alshehri, Igor Dolgov, Z. O. Toups, *United States*

A Framework of Input Devices to Support Designing Composite Wearable Computers

Ahmed S. Khalaf, Sultan A. Alharthi, Bill Hamilton, Igor Dolgov, Son Tran, Z. O. Toups, *United States*

HIMI S033

Information and User Experience

Chair(s): Ying Zheng, *United States*

Designing a Dashboard Visualization Tool for Urban Planners to Assess the Completeness of Streets

Greice Mariano, Veda Adnani, Iman Kewalramani, Bo Wang, Matthew Roorda, Jeremy Bowes, Sara Diamond, *Canada*

Exploring Ontology-based Information Through the Progressive Disclosure of Visual Answers to Related Queries

Dalai S. Ribeiro, Alysson Gomes De Sousa, Rodrigo B. De Almeida, Pedro Henrique Thompson Furtado, Hélio Cortes Vieira Lopes, Simone Diniz Junqueira Barbosa, *Brazil*

Enhancing Peoples' Training Experience: A Gym Workout Planner based on Soft Ontologies

Rita de Cassia Catini, Paulo Cesar De Macedo, Julio Cesar Dos Reis, Rodrigo Bonacin, *Brazil*

Comprehensive Evaluation of an Educational Information Management

Solution for Parents: MyStudentScope

Theresa Matthews, Jinjuan Feng, Ying Zheng, Zhijiang Chen, *United States*

Is This the Right Time to Post My Task? An Empirical Analysis on a Task Similarity Arrival in TopCoder

Razieh Saremi, Mostaan Lotfalian Saremi, Prasad Desai, Robert Anzalone, *United States*

Understanding Voice Search Behavior: Review and Synthesis of Research

Zhaopeng Xing, Xiaojun Yuan, *United States*; Dan Wu, Yeman Huang, *P.R. China*; Javed Mostafa, *United States*

EPCE S034

Applied Cognitive Psychology

Chair(s): Manos Zidianakis, *Greece*

Project Team Recommendation Model Based on Profiles Complementarity

Bruno Mendonça Santos, Matheus Dos Santos Nascimento, Daniela De Freitas Guilhermino Trindade, Jislaine De Fátima Guilhermino, José Reinaldo Merlin, Ronaldo Cesar Mengato, Ederson Marcos Sgarbi, Carlos Eduardo Ribeiro, *Brazil*

Computer-Based Neuropsychological Theory of Mind Assessment: A Validation Study

Gilberto Galindo-Aldana, Alberto L. Morán, Cynthia Torres-González, Lesdly Cabero, Victoria Meza-Kubo, *Mexico*

Effects of Digitally Typesetting Mathematics on Working Memory

Francis Quinby, Marco Pollanen, Michael G. Reynolds, Wesley S. Burr, *Canada*

Human-Computer Interaction

Human Interface and the Management of Information

Engineering Psychology and Cognitive Ergonomics

Universal Access in Human-Computer Interaction

UAHCI S035

Sensors and Mobile Applications for Human-Computer Interaction

Chair(s): João M.F. Rodrigues, Pedro J.S. Cardoso, *Portugal*

Large Scale Augmented Reality for Collaborative Environments

Arnīs Cirulis, *Latvia*

On the Allocation of Resources in Sensor Clouds Under the Se-aaS Paradigm

Joel Guerreiro, Luis Rodrigues, Noelia Correia, *Portugal*

Low-Resolution Retinal Image Vessel Segmentation

Hasan Zengin, *Turkey*; José Camara, *Brazil*; Paulo Coelho, João M.F. Rodrigues, António Cunha, *Portugal*

The Influence of Social Networking Technology on Centennials Purchase Intent

Célia M.Q. Ramos, João M.F. Rodrigues, *Portugal*

Efficient Small-Scale Network for Room Layout Estimation

Ricardo J.M. Veiga, Pedro J.S. Cardoso, João M.F. Rodrigues, *Portugal*

S036

Accessibility and Assistive Technologies

Chair(s): Rafael Dos Passos Canteri, *Brazil*

A Web Authoring Tool for the Generation of Adventure Educational Games for Deaf Children

Rafael Dos Passos Canteri, Laura Sánchez García, Tanya Amara Felipe, *Brazil*

A Case Study about Usability, User Experience and Accessibility Problems of Deaf Users with Assistive Technologies

Tatiany X. De Godoi, Deogenes P. Da Silva Junior, Natasha M. Costa Valentim, *Brazil*

Integrated Assistive Auxiliary System - Developing Low Cost Assistive Technology to Provide Computational Accessibility for Disabled People

Paulo André Da Rocha Perris, Fernando Da Fonseca de Souza, *Brazil*

Providing a Tangible and Visual Feedback of Affective States Self-Expressions

Eliana Alves Moreira, Julián Alberto Herrera, M. Cecília C. Baranauskas, *Brazil*

Automatic Contrast Evaluation for Android Themes

Adriano Gil, Juliana Postal, Adélia Ferreira, Daylene Gonçalves, Bianca Hayek Bianco, Mikhail R. Gadelha, *Brazil*

VAMR S037

Virtual, Augmented and Mixed Reality

Emerging Practical Applications of AR/VR/MR

Chair(s): Crystal Maraj, *United States*

Development and Human Factors Considerations for Extended Reality Applications in Medicine: The Enhanced Electrophysiology Visualization and Interaction System (ĒLVIS)

Jennifer N. Avari Silva, Mary Beth Privitera, Michael K. Southworth, Jonathan R. Silva, *United States*

Using Laser Scans and 'Life History' to Remember Heritage in Virtual Environments

Lori C. Walters, Robert A. Michlowitz, Michelle J. Adams, *United States*

Crew Workload Considerations in Using HUD Localizer Takeoff Guidance in Lieu of Currently Required Infrastructure

Daniela Kratchounova, Mark Humphreys, Larry Miller, Theodore Mofle, Inchul Choi, Blake Nesmith, *United States*

User Interface for an Immersive Virtual Reality Greenhouse for Training Precision Agriculture

Daniel W. Carruth, Christopher Hudson, Amelia Fox, Shuchisnigda Deb, *United States*

Improving emergency response training and decision making using a collaborative virtual reality environment for building evacuation

Sharad Sharma, *United States*

S038 continues...

Understanding Fidelity Requirements for Human-Autonomy Teaming Simulations/ Scenarios

Chair(s): Joseph B. Lyons, *United States*

The Effects of Asset Degradation on Human Trust in Swarms

August Capiola, Joseph B. Lyons, Izz Aldin Hamdan, Keitaro Nishimura, Katia Sycara, Michael Lewis, Michael A. Lee, Morgan Borders, *United States*

Usability of the Virtual Agent Interaction Framework

David Novick, Mahdokht Afravi, Oliver Martinez, Aaron Rodriguez, Laura J. Hinojos, *United States*

Emotions Synthesis Using Spatio-Temporal Geometric Mesh

Diego Addan Gonçalves, Eduardo Todt, *Brazil*

Appropriately Representing Military Tasks for Human-Machine Teaming Research

Chad Tossell, Boyoung Kim, Bianca Donadio, Ewart De Visser, Ryan Holec, Elizabeth Phillips, *United States*

Interactions Between Humans, Virtual Agents Characters and Virtual Avatars

Tamara Griffith, Cali M. Fidopiastis, Patricia S. Bockelman, Joan Johnston, *United States*



VAMR S039

Virtual, Augmented, and Mixed Reality for Human-Robot Interaction

Chair(s): Tom Williams, *United States*

Enabling Situational Awareness via Augmented Reality of Autonomous Robot-Based Environmental Change Detection

Christopher Reardon, Jason Gregory, Carlos Nieto-Granda, John G. Rogers, *United States*

Virtual Reality for Immersive Human Machine Teaming with Vehicles

Michael Novitzky, Robert Semmens, Nicholas H. Franck, Christa M. Chewar, Christopher Korpela, *United States*

Using Augmented Reality to Better Study Human-Robot Interaction

Tom Williams, Leanne Hirshfield, Nhan Tran, Trevor Grant, Nicholas Woodward, *United States*

Visual Reference of Ambiguous Objects for Augmented Reality-Powered Human-Robot Communication in a Shared Workspace

Peng Gao, Brian Reily, Savannah Paul, Hao Zhang, *United States*

A Robotic Augmented Reality Virtual Window for Law Enforcement Operations

Nate Phillips, Brady Kruse, Farzana Alam Khan, J. Edward Swan II, Cindy L. Bethel, *United States*

S040

Mobile and Wearable VAMR

Chair(s): Aasim Khurshid, *Brazil*

A Shader-Based Architecture for Virtual Reality Applications on Mobile Devices

Adriano M. Gil, Thiago S. Figueira, *Brazil*

A Scene Classification Approach for Augmented Reality Devices

Aasim Khurshid, Sergio Cleger, Ricardo Grunitzki, *Brazil*

Video Player Architecture for Virtual Reality on Mobile Devices

Adriano M. Gil, Afonso R. Costa Jr, Atacilio C. Cunha, Thiago S. Figueira, Antonio A. Silva, *Brazil*

MRCAT: In Situ Prototyping of Interactive AR Environments

Matt Whitlock, Jake Mitchell, Nick Pfeufer, Brad Arnot, Ryan Craig, Bryce Wilson, Brian Chung, Danielle Albers Szafir, *United States*

Camera-Based Selection with Cardboard Head-Mounted Displays

Siqi Luo, Robert J. Teather, Victoria McArthur, *Canada*

SCSM S041

Customer eXperience and Behavior - I

Chair(s): Cristian Rusu, *Chile*

Evaluation of Customer eXperience and Behaviour: A Literature Review

Sandra Cano, Colombia; Cristian Rusu, Daniela Quiñones, *Chile*

Technology-Based Social Skills Learning for People with Autism Spectrum Disorder

Katherine Valencia, Virginia Zarara Rusu, Erick Jamet, Constanza Zúñiga, Eduardo Garrido, Cristian Rusu, Daniela Quiñones, *Chile*

Understanding User Needs and Customer eXperience in Tourism Area

Luis Rojas, Daniela Quiñones, Cristian Rusu, *Chile*

User eXperience Heuristics for National Park Websites

Dania Delgado, Daniela Zamora, Daniela Quiñones, Cristian Rusu, Silvana Roncagliolo, Virginica Rusu, *Chile*

Social Computing and Social Media

S042

Experiences and Service Science

Chair(s): Virginica Rusu, *Chile*

Identifying User Experiences for Decision-Making in Service Science

Silvana Aciar, *Argentina*; Mayela Coto, *Costa Rica*; Gabriela Aciar, *Argentina*

Programmer eXperience: A Set of Heuristics for Programming Environments

Jenny Morales, Cristian Rusu, *Chile*; Federico Botella, *Spain*; Daniela Quiñones, *Chile*

An Analysis of The Current Policies for Social Media Use in Saudi Higher Education

Faowzia Alharthy, Yuanqiong Wang, Alfredua Dudley, *United States*

Improving the Web Accessibility of a University Library for People with Visual Disabilities through a Mixed Evaluation Approach

Milda Galkute, Luis A. Rojas P., Victor A. Sagal M., *Chile*

An Agile Product Design in a Smart City Context: A Use Case for Air Pollution Awareness

Jaime Diaz, Oscar Ancan Bastias, *Chile*

SCSM S043

Data, Algorithms, and Humans in Digital Manipulation - II

Chair(s): Dennis Assenmacher, Christian Grimme, Lena Clever, Germany

A Two-Phase Framework for Detecting Manipulation Campaigns in Social Media

Dennis Assenmacher, Lena Clever, Janina Susanne Pohl, Heike Trautmann, Christian Grimme, Germany

A New Information Theory based Clustering Fusion Method for Multi-view Representations of Text Documents

Juan Zamora, Chile; Jérémie Sublime, France

Filter Bubbles and Content Diversity? An Agent-based Modeling Approach

Poornima Belavadi, Laura Burbach, Patrick Halbach, Johannes Nakayama, Nils Plettenberg, Martina Ziefle, André Calero Valdez, Germany

User-oriented Quality Estimation of Social News Systems and its Content - Gender-dependent Assessment of Reddit

Katrin Scheibe, Franziska Zimmer, Germany

Emotions in Online Gambling Communities: a Multilevel Sentiment Analysis

Markus Kaakinen, Atte Oksanen, Anu Sirola, Iina Savolainen, Finland; David Garcia, Austria

AC S044

Augmented Cognition

Perspectives, Challenges, and Designs of Augmented Cognition

Chair(s): Martha E. Crosby, Michael-Brian C. Ogawa, Hana Vrzakova, United States

Tracking Technostress: A Task-Interruption of Data Entry Study

Bruce W. Barnes, Randall K. Minas, United States

Metastimuli: an Introduction to PIMS Filtering

Rico A.R. Picone, Dane Webb, Bryan Powell, United States

Understanding Challenges Presented using Emojis as a Form of Augmented Communication

Mariam Doliashvili, Michael-Brian C. Ogawa, Martha E. Crosby, United States

Cognitive Variability Factors and Passphrase Selection"

Lila A. Loos, Michael-Brian C. Ogawa, Martha E. Crosby, United States

Probing for Psycho-Physiological Correlates of Cognitive Interaction with Cybersecurity Events

Nancy Mogire, Randall K. Minas, Martha E. Crosby, United States

Flip-Flop Quizzes: A Case Study Analysis to Inform the Design of Augmented Cognition Applications

Branden Ogata, Jan Stelovsky, Michael-Brian C. Ogawa, United States

DHM S045

Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management

AHP & Applications in Decision Making in Health, Safety, Risk Management and Integrated Management Systems

Chair(s): Genett Jimenez-Delgado, Colombia

Improving the Performance in Occupational Health and Safety Management in the Electric Sector: An Integrated Methodology using Fuzzy Multicriteria Approach

Genett Jimenez-Delgado, Alexa Senior-Naveda, Freddy Marin-Gonzalez, Jesus Garcia-Guillany, Lina Paola Fontalvo-Molina, Miguel José Ruiz-Muñoz, Hugo Hernandez-Palma, Colombia; Bertha Santos-Hernandez, Mexico

Identifying the Most Appropriate Classifier for Underpinning Assistive Technology Adoption for People with Dementia: An Integration of Fuzzy AHP and VIKOR Methods

Miguel Ortiz-Barrios, Colombia; Chris Nugent, Matias Garcia-Constantino, United Kingdom; Genett Jimenez-Delgado, Colombia

End-User Programming Architecture for Physical Movement Assessment: An Interactive Machine Learning Approach

Jessica M. Palomares-Pecho, Greis Francy M. Silva-Calpa, Cesar A. Sierra-Franco, Alberto Barbosa Raposo, Brazil

Choosing the Most Suitable Classifier for Supporting Assistive Technology Adoption in People with Parkinson's Disease: A Fuzzy Multi-Criteria Approach

Miguel Ortiz-Barrios, Colombia; Ian Cleland, Mark Donnelly, Jonathan Greer, United Kingdom; Antonella Pettrillo, Italy; Zaury Fernández-Mendoza, Natalia Jaramillo-Rueda, Colombia

Integrating Lean Six Sigma and Discrete-event Simulation for Shortening the Appointment Lead-time in Gynecobstetrics Departments: A Case Study

Miguel Ortiz-Barrios, Colombia; Sally McClean, United Kingdom; Genett Jimenez-Delgado, David Martinez-Sierra, Colombia

A Combined AHP-TOPSIS Approach for Evaluating the Process of Innovation and Integration of Management Systems in the Logistic Sector

Gilberto Santos, Portugal; Genett Jimenez-Delgado, Colombia; Maria João Félix, Paulo Teixeira, José Carlos Sá, Portugal

S046

Occupational Safety and Health and Human-System Interaction - II

Chair(s): Peter Nickel, Germany

Embedding Ethics in Human Factors Design & Evaluation Methodologies

Joan Cahill, Ireland

Investigation of Clamping and Crushing Injuries with Electrically Height-Adjustable Therapy Beds

Elisabeth Ibenthal, Saskia Sobkowicz, Claus Backhaus, Germany

Enabling or Stressing? – Smart Information Use within Industrial Service Operation

Katja Gutsche, Carsten Droll, Germany

Approach to Ensure an Optimal Task-Technology Fit between Industrial Tasks and Modern Information and Communication Technologies

Jan Terhoeven, Sascha Wischniewski, Germany

What is the State of Smart Glass Research from an OSH Viewpoint? A Literature Review

Daniel Friemert, Claudia Terschüren, Benno Groß, Robert Herold, Nicolai Leuthner, Christopher Braun, Ulrich Hartmann, Volker Harth, Germany

A 3-Step Approach for Introducing Computer-Aided Ergonomics Analysis Methodologies

Kirill Sinchuk, Abigail L. Hancock, Alexandra Hayford, Thorsten Kuebler, Vincent G. Duffy, United States



Design, User Experience, and Usability

DUXU S047

Visualizing Scientific Data and Ideas

Chair(s): Judith A. Moldenhauer, *United States*

Designing Palpable Data Representations

Jessica J. Rajko, *United States*

Visualizing a User's Cognitive and Emotional Journeys: A FinTech Case

Marianne Veilleux, Sylvain Sénécal, Bertrand Demolin, Frédérique Bouvier, Marie-Laure Di Fabio, Constantinos Coursaris, Pierre-Majorique Léger, *Canada*

Information Design to Save Lives: Visualizing Data in the Design of Overdose Kits

Gillian Harvey, Katherine Bubric, *Canada*

Visualizing Information in Scientific Figures: What Do You Want Me to Know?

Judith A. Moldenhauer, *United States*

Make Me Care: Ethical Visualization for Impact in the Sciences and Data Sciences

Katherine Hepworth, *United States*

S048

Discussions on UX Design Methods and Practices - II

Chair(s): Hannes Feuersenger, *Germany*

Detailed Usability Heuristics: A Breakdown of Usability Heuristics to Enhance Comprehension for Novice Evaluators

Anas Abulfaraj, Adam Steele, *United States*

The Usability Testessen – An Innovative Framework for Usability Testing in Practice

Hannes Feuersenger, Hans-Knud Arndt, Kersten Riechers, *Germany*

Policy Making Analysis and Practitioner User Experience

Dimitris Koryzis, Fotios Fitsilis, Dimitris Spiliotopoulos, Theocharis Theocharopoulos, Dionisis Margaritis, Costas Vassilakis, *Greece*

Coherent Heuristic Evaluation (CoHE): Toward Increasing The Effectiveness of Heuristic Evaluation for Novice Evaluators

Anas Abulfaraj, Adam Steele, *United States*

Exploring the Digital Native Assessment Scale as an Indicator for Building More Effective User Experiences

Lexy Martin, Steve Summerskill, Tracy Ross, Karl Proctor, Arber Shabani, *United Kingdom*

S049

Designing and Evaluating User Experience in Contemporary Interactive Systems - I

Chair(s): Zohreh Dehghani Champiri, *Canada*

Mobile Based Agricultural Management System for Indian Farmers

Ashmean Kaur Sran, Sherrie Y.X. Komiak, Sabir Manzoor, *Canada*

Usability Heuristics Evaluation in Search Engine

Ana Carolina Dos Santos Pergentino, Edna Dias Canedo, Fernanda Lima, Fábio Lucio Lopes De Mendonça, *Brazil*

rScholar: An Interactive Contextual User Interface to Enhance UX of Scholarly Recommender Systems

Zohreh Dehghani Champiri, Brian Fisher, Luanne Freund, *Canada*

The effect of device-affordance alignment with the user goal on user experience

Audrey Bond, Pierre-Majorique Léger, Sylvain Sénécal, *Canada*

Great UI Can Promote the "Do Everything Ourselves" Economy

Henry Lieberman, Christopher Fry, *United States*

DAPI S050

Designing Intelligent Environments - I

Chair(s): Denis Gracanin, *United States*

On the Integration of Multiple Modeling Methodologies into a Single User Interface

Lawrence J. Henschen, Julia C. Lee, *United States*

Accessibility in Pervasive Systems: An Exploratory Study

Diego Addan Gonçalves, M. Cecília C. Baranauskas, Julio Cesar Dos Reis, *Brazil*

Rethinking User Interaction with Smart Environments - A Comparative Study of Four Interaction Modalities

Mohamed Handosa, Egypt; Archi Dasgupta, Mark Manuel, Denis Gracanin, *United States*

Towards an Ambient Intelligent Environment for Multimodal Human Computer Interactions

Jeffrey Bennett, Phuong Nguyen, Crisrael Lucero, Douglas Lange, *United States*

Detecting IoT Applications Opportunities and Requirements Elicitation: A Design Thinking Based Approach

Douglas Lima Dantas, Lucia Vilela Leite Filgueiras, Anarosa Alves Franco Brandão, Maria Cristina Machado Domingues, Maria Rosilene Ferreira, *Brazil*

VLC-Enabled Human-aware Building Management System

Yehuda E. Kalay, Haripriya Sathyanarayanan, Davide Schaumann, Albert Wang, Gang Chen, Ramdas G. Pai, *United States*

Distributed, Ambient and Pervasive Interactions

SUNDAY 19:30 - 21:30



Learning and Collaboration Technologies

LCT S051

Interactive Learning Ecosystems - I

Chair(s): Francisco J. García-Peñalvo, David Fonseca, *Spain*

Let's Learn! An Initial Guide on Using Drones to Teach STEM for Children

Dante Tezza, Sarah Garcia, Marvin Andujar, *United States*

Designing a Mobile Platform for Developing Scholar Physical Education Activities: a WebQuest based Approach

Carlos Alexandre Gustavo de Souza, Ferruccio De Franco Rosa, Rodrigo Bonacin, *Brazil*

Investigating the relation between sense of presence, attention and performance: virtual reality versus web

Aliane Loureiro Krassmann, Fabrício Herpich, Liane Margarida Rockenbach Tarouco, Magda Bercht, *Brazil*

Analyzing Students' Behavior in a MOOC Course: A Process-Oriented Approach

Franklin Bernal, *Ecuador*; Jorge Maldonado-Mahauad, *Chile*; Klinge Orlando Villalba-Condori, *Peru*; Miguel Zúñiga-Prieto, Jaime Veintimilla-Reyes, Magali Mejia, *Ecuador*

HCI S052

New Perspectives on the Aging User and Development of Digital Services

Chair(s): Marie Sjölander, *Sweden*

A Contextual Usability Exploration of Cash and Ticket Machines

Karolina Uggla, Yvonne Eriksson, *Sweden*

Security, Privacy and Trust for a Crowd-Sourced Semantic Accessibility Database for Public Transport

Daniel Tabellion, Moritz Wolf, Jochen Britz, Maurice Rekrut, Jan Alexandersson, *Germany*

Technological Care. Health Professionals' Discourses on Technology in Home-based Services Seen through a Capability Approach

Erik Thorstensen, Torhild Holthe, Liv Halvorsrud, Dag Karterud, Anne Lund, *Norway*

Enhancing self-efficacy as a part of the design process

Marie Sjölander, *Sweden*

Stealth-Adaptive Exergame Design Framework for Elderly and Rehabilitative Users

Ramin Tadayon, *United States*; Wataru Sakoda, Yuichi Kurita, *Japan*

Integrating Personal Emergency Response Systems (PERS) into Healthcare Professional Practices: A Scoping Review

Fangyuan Chang, Sanna Kuoppamäki, Britt Östlund, *Sweden*

S053

New Media Use in the Everyday Life of Older People - II

Chair(s): Eugène Loos, *Netherlands*

Older People and Technology Use: The Importance of Using Video Stimuli in Group Discussions

Loredana Ivan, Florinela Mocanu, *Romania*

Home as a Platform: Levels of Automation for Connected Home Services

Shabnam Fakhrosseini, Chaiwoon Lee, Joseph F. Coughlin, *United States*

"Just because you're older...": Seniors respond to telecom sales practices in Canada

Kim Sawchuk, Constance Lafontaine, *Canada*

The Use of New Information and Communication Technology for Health Information among Older Icelanders'

Ágústa Pálsdóttir, *Iceland*

The Relationship between Social Participation and Internet Addiction in Older Persons

Javiera Rosell, Alvaro Verges, *Chile*

Towards lively surveillance? The domestication of companion robots

Constance Lafontaine, *Canada*

S054

continues...

Privacy and (Data) Security in the Digital Age of Aging Societies

Chair(s): Martina Ziefle, Wiktorija Wilkowska, Julia Offermann-van Heek, *Germany*

The Influence of Privacy on the Acceptance of Technologies for Assisted Living

Christina Jaschinski, Somaya Ben Allouch, Oscar Peters, Jan Van Dijk, *Netherlands*

How to handle data management of assisting lifelogging technologies from a user's point of view

Julia Offermann-van Heek, Wiktorija Wilkowska, Martina Ziefle, *Germany*

Two Faces of Privacy: Legal and Human-Centered Perspectives of Lifelogging Applications in Home Environments

Wiktorija Wilkowska, Julia Offermann-van Heek, *Germany*; Liane Colonna, *Sweden*; Martina Ziefle, *Germany*

Identification Issues Associated with the Use of Wearable Accelerometers in Lifelogging

Angelica Poli, Annachiara Strazza, Stefania Cecchi, Susanna Spinsante, *Italy*

Addressing Fear and Lack of Knowledge of Older Adults Regarding Social Network Sites

Torben Volkman, Isabella Miller, Nicole Jochems, *Germany*

The Impact of User Diversity on the Acceptance of mHealth for Aftercare - Identifying the User Types 'Assistance Seekers' and 'Privacy Supporters'

Eva-Maria Schomakers, Luisa Vervier, Martina Ziefle, *Germany*

SUNDAY 19:30 - 21:30



HCI S055

Intelligent Environments for Healthy and Active Aging - I

Chair(s): To be announced

Age-Related Differences in Takeover Request Modality Preferences and Attention Allocation during Semi-Autonomous Driving
Gaojian Huang, Brandon Pitts, *United States*

Hermes: A Digital Assistant for Coordinating Invisible Work in Family Elderly Caregiving Scenarios
Andrea Benavides, Francisco J. Gutierrez, Sergio F. Ochoa, *Chile*

Co-designing Strategies to Provide Telecare through an Intelligent Assistant for Caregivers of Elderly Individuals
Mateus Monteiro, Luciana Salgado, Flavio Seixas, Rosimere Santana, *Brazil*

A Framework for Monitoring Indoor Navigational Hazards and Safety of Elderly
Nirmalya Thakur, Chia Y. Han, *United States*

Choice-Based User Interface Design of a Smart Healthy Food Recommender System for Nudging Eating Behavior of Older Adult Patients with Newly Diagnosed Type II diabetes
Wen-Yu Chao, Zachary Hass, *United States*

HCI-CPT S056

Perspectives on Privacy and Trust

Chair(s): Rodolfo Ward, *Brazil*

Cyberspace and Cyberculture: the New Social and Governance Field
Rodolfo Ward, Cleomar Rocha, Suzete Venturelli, *Brazil*

An Emerging Strategy for Privacy Preserving Databases: Differential Privacy
Fatema Rashid, Ali Miri, *Canada*

Enabling Medical Research Through Privacy-Preserving Data Markets
Shadan Ghaffaripour, Ali Miri, *Canada*

Did I Agree to This? Silent Tracking Through Beacons
Edden Kashi, Angeliki Zavou, *United States*

Personal Data Discoverability to Human Searchers: Observations on Personal Data Availability
Kirsten E. Richards, *United States*

HCI for Cybersecurity, Privacy and Trust

HCI-Games S057

Gamification Toward Information Systems

Chair(s): Fan Zhao, *United States*

Game-Based Learning and Instructional Effectiveness in Organizational Communication Classrooms
Dongjing Kang, *United States*

Broader Understanding of Gamification by Addressing Ethics and Diversity
Ole Goethe, *Norway*; Adam Palmquist, *Sweden*

The Impact of Fulfilling a Desire for Idealism on Task Engagement and Enjoyment in Digital Games
Owen Schaffer, Xiaowen Fang, *United States*

WeRehab: Assisting Cannabis Rehabilitation Via Mobile Application
Yoanna Long, Kuang-Yuan Huang, *United States*

Learning Programming in Virtual Reality Environments
Flornaldine Pierre, Fan Zhao, Anna Koufakou, *United States*

HCI in Games

AIS S058

Adaptive Instructional Systems and the Evolution of Standardized and Summative Assessment: Opportunities, Methods, and Barriers

Chair(s): Michelle D. Barrett, *United States*

The Evolving Assessment Landscape and Adaptive Instructional Systems: Moving Beyond Good Intentions
Michelle D. Barrett, *United States*

Realizing the Promise of AI-Powered, Adaptive, Automated, Instant Feedback on Writing for Students in Grade 3-8 with an IEP
Paul Edelblut, *United States*

Production Implementation of Recurrent Neural Networks in Adaptive Instructional Systems
David R. King, *United States*

Contextual Barriers to Validity in Adaptive Instruction and Assessment
Karen Barton, *United States*

Adaptive Instructional Systems

AI S059

Non-Player Character (NPC) Features for Adaptive Instruction

Chair(s): Benjamin Bell, Eric Domeshek, *United States*

Adaptive Agents for Fit-for-Purpose Training

Karel Van den Bosch, Romy Blankendaal, Rudy Boonekamp, Tjeerd Schoonderwoerd, *Netherlands*

Using a Non-Player Character to Improve Training Outcomes for Submarine Electronic Warfare Operators

Bradford L. Schroeder, Nicholas Fraulini, Wendi L. Van Buskirk, Cheryl I. Johnson, *United States*

Falling Forward: Lessons Learned from Real-Life Implementation of Adaptive Learning Solutions

Alysson Hursey, Kathryn Thompson, Jill Wierzba, Elizabeth Tidwell, Joyner Livingston, Jennifer Lewis, *United States*

Realistic and Relevant Role-Players for Experiential Learning

Eric Domeshek, Sowmya Ramachandran, Randy Jensen, Jeremy Ludwig, *United States*

Adapting Instruction by Measuring Engagement with Machine Learning in Virtual Reality Training

Benjamin Bell, Elaine Kelsey, Benjamin Nye, Winston ("Wink") Bennett, *United States*

Artificial Intelligence in HCI

AI-HCI S060

User Experience Design in AI Systems - I

Chair(s): Ming Qian, *United States*

Defining a Human-Machine Teaming Model for AI-powered Human-centered Machine Translation Agent by Learning from Human-Human Group Discussion: Dialog Categories and Dialog Moves

Ming Qian, Davis Qian, *United States*

Cross-Scenario Performance Modelling for Big Data Ecosystems

Fatimah Alsayoud, Ali Miri, *Canada*

V-Dream: Immersive Exploration of Generative Design Solution Space

Mohammad Keshavarzi, Ardavan Bidgoli, Hans Kellner, *United States*

Arny: A Study of a Co-creative Interaction Model Focused on Emotion Feedback

Sarah Abdellahi, Mary Lou Maher, Safat Siddiqui, Jeba Rezwana, Ali Almadan, *United States*

Human versus Machine and Human-Machine Teaming on Masked Language Modeling Tasks

Ming Qian, Davis Qian, *United States*

NOTES

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| HCI | S061 |
|---|------|
| Lean and HCI in Practice Chair(s): Yu-Hsiu Hung, <i>Taiwan</i> | |
| Applying Holo360 Video and Image Super-Resolution Generative Adversarial Networks to Virtual Reality Immersion Chia Hui Feng, Yu-Hsiu Hung, Chao-Kuang Yang, Liang-Chi Chen, Wen-Cheng Hsu, Shih-Hao Lin, <i>Taiwan</i> | |
| The Effect of Different Icon Shape and Width on Touch Behavior Hsi-Jen Chen, Yung-Chueh Cheng, Wei-Hsiang Hung, <i>Taiwan</i> | |
| The Behaviour Observations of Using Rearview Mirror with Distance Indicator Cheng-Yong Huang, <i>Taiwan</i> | |
| Development and Technical Experience of Plastic Injection Machine for STEAM Education Jui-Hung Cheng, Hsin-Hung Lin, <i>Taiwan</i> | |

| S062 |
|---|
| Research on AI Art and Practice - I Chair(s): Yi Ji, <i>P.R. China</i> |
| The Image of Presence and the Presence of the Image Kenneth Feinstein, <i>Malaysia</i> |
| Baguamarsh: An Immersive Narrative Visualization for Conveying Subjective Experience Fei Jiang, <i>P.R. China</i> ; Don Derek Haddad, Joseph Paradiso, <i>United States</i> |
| Improvised Music for Computer and Augmented Guitar: Performance with Gen~ Plug-ins Scott L. Simon, <i>Australia</i> |
| User Loyalty Analysis of Knowledge Payment Platform Xin Wang, Bin Jiang, <i>P.R. China</i> |
| Anthropomorphic Design for Everyday Objects Shi Qiu, <i>P.R. China</i> |
| Research on the Design of Interactive Waiting Interface based on the Elderly User Experience Haoyu Xu, <i>P.R. China</i> |

| S063 |
|---|
| Input Methods and Techniques - II Chair(s): Buntarou Shizuki, <i>Japan</i> |
| Touch Position Detection on the Front of Face Using Passive High-functional RFID Tag with Magnetic Sensor Yuta Takayama, Yuu Ichikawa, Takumi Kitagawa, Song Shengmei, Buntarou Shizuki, Shin Takahashi, <i>Japan</i> |
| A Defocus Based Novel Keyboard Design Priyanshu Gupta, Tushar Goswamy, Himanshu Kumar, K.S. Venkatesh, <i>India</i> |
| SilverCodes: Thin, Flexible, and Single-Line Connected Identifiers Inputted by Swiping with a Finger Minto Funakoshi, Shun Fujita, Kaori Minawa, Buntarou Shizuki, <i>Japan</i> |
| Identification Method of Digits for Expanding Touchpad Input Takuto Nakamura, Buntarou Shizuki, <i>Japan</i> |
| A Mouth Gesture Interface Featuring a Mutual-Capacitance Sensor Embedded in a Surgical Mask Yutaro Suzuki, Kodai Sekimori, Yuki Yamato, Yusuke Yamasaki, Buntarou Shizuki, Shin Takahashi, <i>Japan</i> |

| S064 |
|--|
| Emotions in HCI - II Chair(s): Panikos Heracleous, <i>Japan</i> |
| The Effect of Naturalness of Voice and Empathic Responses on Enjoyment, Attitudes and Motivation for Interacting with a Voice User Interface Jacqueline Urakami, Sujitra Sutthithatip, Billie Akwa Moore, <i>Japan</i> |
| The Effect of Personal Pronouns on Users' Emotional Experience in Voice Interaction Jianhong Qu, Ronggang Zhou, Liming Zou, Yanyan Sun, Min Zhao, <i>P.R. China</i> |
| Integrating Language and Emotion Features for Multilingual Speech Emotion Recognition Panikos Heracleous, Yasser Mohammad, Akio Yoneyama, <i>Japan</i> |
| Recent Multimodal Communication Methodologies in Phonology, Vision, and Touch Chutisant Kerdvibulvech, <i>Thailand</i> |

HIMI S065

Virtual Reality and Haptic Application - I
Chair(s): Kentaro Kotani, Daiji Kobayashi, *Japan*

Methodology of controlling subjective speed while watching CG images
Yuki Motomura, Hiroki Hashiguti, Takafumi Asao, Kentaro Kotani, Satoshi Suzuki, *Japan*

Improvement of SPIDAR-HS and Construction of Visual Rod Tracking Task Environment
Hiroya Suzuki, Ryuki Tsukikawa, Daiji Kobayashi, Makoto Sato, Takehiko Yamaguchi, Tetsuya Harada, *Japan*

Evaluation of speech input recognition rate of AR-based drawing application on operation monitor for communication support during endoscopic surgery
Takuto YAJIMA, Takeru Kobayashi, Kentaro Kotani, Satoshi Suzuki, Takafumi Asao, Kazutaka Obama, Atsuhiko Sumii, Tatsuto Nishigori, *Japan*

Influence of Visual Gap of Avatar Joint Angle on Sense of Embodiment in VR Space Adjusted via C/D Ratio
Takehiko Yamaguchi, Hiroaki Tama, Yuya Ota, Yukiko Watabe, Sakae Yamamoto, Tetsuya Harada, *Japan*

Development of Empowered SPIDAR-tablet and Evaluation of a System Presenting Geographical Information Using it
Yuki Hasumi, Keita Ueno, Sakae Yamamoto, Takehiko Yamaguchi, Makoto Sato, Tetsuya Harada, *Japan*

One-Handed Character Input Method for Smart Glasses
Toshimitsu Tanaka, Yuri Shibata, Yuji Sagawa, *Japan*

S066

Improvement in Learning and Educational Environments using ICT - I
Chair(s): Takahito Tomoto, Yusuke Kometani, Takako Akakura, *Japan*

Learning Support for Historical Interpretation Using Semantically Enhanced Historical Cartoons
Daiki Muroya, Kazuhisa Seta, Yuki Hayashi, *Japan*

Multimodal Interaction-aware Integrated Platform for CSCL
Aoi Sugimoto, Yuki Hayashi, Kazuhisa Seta, *Japan*

Services Task Model Based Dialogue Scenarios Design Towards L2 WTC Support Oriented Dialogues Authoring Tool
Emmanuel Ayedoun, Yuki Hayashi, Kazuhisa Seta, *Japan*

Development of VR Learning Spaces Considering Lecture Format in Asynchronous e-Learning
Takumi Baba, Toru Tokunaga, Toru Kano, Takako Akakura, *Japan*

Educational Environment of Video System using Superimposing Symbols to Support for Skill Training
Naka Gotoda, Yusuke Kometani, Rihito Yaegashi, Toshihiro Hayashi, *Japan*

"Two Way or Go Away": Development of DPP(Digital Presentation Platform) which supports to make a College Teachers get Two-way Communication Classroom as a Facilitators
Keizo Nagaoka, Ryoji Kubota, *Japan*

S067

Evidence Based Design and UX for Design Process
Chair(s): Keiko Kasamatsu, Takeo Ainoya, *Japan*

Development of Multi-DoF Robot Arm with Expansion and Contraction Mechanism for Portability
Taiga Yokota, Naoyuki Takesue, *Japan*

User Experience Analysis for Visual Expression Aiming at Creating Experience Value According to Time Spans
Cairen Zhuoma, Keiko Kasamatsu, Takeo Ainoya, *Japan*

Hearing method for user requirement extract in participatory design -designing for service involving local residents-
Fuko Oura, Takeo Ainoya, Keiko Kasamatsu, *Japan*

The Research of Regional Cultural Image of China -- Exemplifying with Guandong Culture Area --
He Jiang, Keiko Kasamatsu, Takeo Ainoya, *Japan*

Examination of communication tools for "The left-behind children"
Minzhi Deng, Keiko Kasamatsu, Takeo Ainoya, *Japan*

Research on Payment UX Status during the Share Cycle Services between Japan and China
Jiahao Jiang, Keiko Kasamatsu, Takeo Ainoya, *Japan*

EPCE S068 continues...

Training and Simulation
Chair(s): Wen-Chin Li, *United Kingdom*

An Eye Catcher in the ATC Domain: Influence of Multiple Remote Tower Operations on Distribution of Eye Movements
Maik Friedrich, Anneke Hamann, Jörn Jakobi, *Germany*

Understanding Human Behaviour in Flight Operation using Eye-Tracking Technology
Wojciech Tomasz Korek, Arthur Mendez, Hafiz Ul Asad, Wen-Chin Li, Mudassir Lone, *United Kingdom*

Measuring Situation Awareness in Control Room Teams
Carolina Barzantny, Carmen Bruder, *Germany*

Safety Challenges of AI in Autonomous Systems Design – Solutions from Human Factors Perspective Emphasizing AI Awareness
Hannu Karvonen, Eetu Heikkilä, Mikael Wahlström, *Finland*

Assessing Professional Cultural Differences Between Airline Pilots and Air Traffic Controllers
Wesley Tsz-Kin Chan, Wen-Chin Li, *United Kingdom*

The Application of Safety II in Commercial Aviation – the Operational Learning Review (OLR)
Pete McCarthy, *Hong Kong*

Human Interface and the Management of Information

Engineering Psychology and Cognitive Ergonomics

MONDAY 09:00 - 11:00

EPCE S069

Approaches to Human-Autonomy Teaming - II

Chair(s): Axel Schulte, Simon Schwerd, *Germany*

Allocation of Moral Decision-making in Human-agent Teams: A Pattern Approach

Jasper Van der Waa, Jurriaan Van Diggelen, Luciano Cavalcante Siebert, Mark Neerincx, Catholijn Jonker, *Netherlands*

A Concept on the Shared Use of Unmanned Assets by Multiple Users in a Manned-Unmanned-Teaming Application

Gunar Roth, Axel Schulte, *Germany*

Experimental Validation of an Eye-Tracking-Based Computational Method for Continuous Situation Awareness Assessment in an Aircraft Cockpit

Simon Schwerd, Axel Schulte, *Germany*

Human-in-the-loop Evaluation of a Manned-Unmanned System Approach to derive Operational Requirements for Military Air Missions

Sebastian Lindner, Axel Schulte, *Germany*

UAHCI S070

Medical Design

Chair(s): Kevin C. Tseng, Hsieh-Chun Hsieh, *Taiwan*

A Feasibility Study on the Application of Virtual Reality Technology for the Rehabilitation of Upper Limbs after Stroke

Le Wang, *P.R. China*; Jean-Lon Chen, Alice M. Wong, Kevin C. Tseng, *Taiwan*

Designing System Architecture for the Catering Management System of Chang Gung Health and Culture Village

Ellie Li, Alice M. Wong, Kevin C. Tseng, *Taiwan*

Research on the Visually Impaired Individuals Shopping with Artificial Intelligence Image Recognition Assistance

Chia Hui Feng, Ju Yen Hsieh, Yu-Hsiu Hung, Chung-Jen Chen, Cheng-Hung Chen, *Taiwan*

Development of Night Time Calling System by Eye Movement using Wearable Camera

Kazuki Sakamoto, Takeshi Saitoh, Kazuyuki Itoh, *Japan*

Lego Robots in Puppet Play for Children with Cerebral Palsy

Hsieh-Chun Hsieh, Chun-Kai Liu, Peter Kuan-Hao Cheng, *Taiwan*

VAMR S071

New Virtualities - I

Chair(s): To be announced

A Mixed-reality Shop System Using Spatial Recognition to Provide Responsive Store Layout

Hao Dou, Jiro Tanaka, *Japan*

Construction of Human-Robot Cooperation Assembly Simulation System Based on Augmented Reality

Qiang Wang, Xiumin Fan, Mingyu Luo, Xuyue Yin, Wenmin Zhu, *P.R. China*

Interactive Mixed Reality Cooking Assistant for Unskilled Operating Scenario

Ke-Yu Zhai, Yi-Ming Cao, Wen-jun Hou, Xue-Ming Li, *P.R. China*

Interactive Narrative in Augmented Reality: An Extended Reality of the Holocaust

Yunshui Jin, *P.R. China*; Minhua Ma, *United Kingdom*; Yun Liu, *P.R. China*

A Color Design System in AR Guide Assembly

Xupeng Cai, Shuxia Wang, Guangyao Xu, Weiping He, *P.R. China*

CCD S072

Kansei Issues in Cross-Cultural Design - I

Chair(s): Kuohsiang Chen, *Taiwan*; Szu-Chi Chen, *Australia*

The Craft Aesthetics of the Cultural Relics Collection in the Qing Dynasty

Mei-Jin Hsiao, Shu-Hua Hsueh, *P.R. China*

Applications of Asian Abstract Imagery in Modern Fabric Design

Feng Tzu Chiu, *P.R. China*

Cultivate Deeper Cross-cultural Context into Foreign Language Teaching

Shu-Hua Hsueh, Mei-Jin Hsiao, *P.R. China*

The Current Situation of AI Foreign Language Education and Its Influence on College Japanese Teaching

Tzu-Hsuan Kuo, *Canada*

Research on Kansei of Visual Literacy of Regional Cultural Experience in Product Shaping Design

Min Shi, *P.R. China*

Universal Access in Human-Computer Interaction

Virtual, Augmented and Mixed Reality

Cross-Cultural Design

CCD S073

Design for Cross-Culture - I
Chair(s): Rungtai Lin, Po-Hsien Lin, Taiwan

Parametric Mechanism of Computer aided Craft Design: Taking Wooden Crib as an Example
Kung-Ling Chang, Taiwan

A Service Design Framework for Brand Experience in the Creative Life Industry – A Case Study of the Millennium Gaea Resort Hualien in Taiwan
Shu-Hua Chang, Rungtai Lin, Taiwan

Research on the Development Path of “New Technology” and “Traditionalization” of Chinese Embroidery
Shuang Ou, Minghong Shi, Wei Deng, P.R. China; Rungtai Lin, Taiwan

Research on the Cognitive Differences of Different Types of Interactive Artworks
Yang Gao, Jun Wu, P.R. China; Rungtai Lin, Taiwan

The Conformity Utilization on Community Resources on Base of Urban Renewal —Taking Xinhua Community of Shaoyang City as the Case
Wei Bi, Yang Gao, Zidong He, P.R. China

S074

Affective Computing and User Experience Design - I
Chair(s): Pei-Luen Patrick Rau, P.R. China; Yu-Liang Chi, Taiwan; Xiaoang Irene Wan, P.R. China

Quantification of Natural Multimodal Interaction Capacity
Jian Zheng, Pei-Luen Patrick Rau, Jingyu Zhao, P.R. China

Trends in Human-Computer Interaction in the 5G Era: Emerging Life Scenarios with 5G Networks
Jingyu Zhao, Andong Zhang, Pei-Luen Patrick Rau, Lili Dong, Liang Ge, P.R. China

Contrastive Study on User Satisfaction of Weibo and Instagram Common Users
Huijun Qin, P.R. China

Towards the ethnic understanding of Taiwanese indigenous peoples: A Mashup based on semantic web and open data
Yu-Liang Chi, Han-Yu Sung, Ying-Yuan Lien, Taiwan

Improving Memory Recall and Measuring User Ability Through Gamified Techniques with ‘Chatty’: An E-learning Application for Foreign Languages
Hyeyeon Park, Korea; Jacob D. Burke, United States; Volny Blin, France; Harris Chrysanthou, Cyprus

SCSM S075

Data Based Social Signal Processing - I
Chair(s): Hung-Hsuan Huang, Shogo Okada, Ryo Ishii, Japan

Exploring Gaze Behaviour and Perceived Personality Traits
Koki Ijuin, Kristiina Jokinen, Japan

Investigation on the Fusion of Multi-modal and Multi-person Features in RNNs for Detecting the Functional Roles of Group Discussion Participants
Hung-Hsuan Huang, Toyooki Nishida, Japan

Personality Trait Classification based on Co-occurrence Pattern Modeling with Convolutional Neural Network
Ryo Kimura, Shogo Okada, Japan

Effects of Linguistic Proficiency and Conversation Topic on Listener’s Gaze in Triadic Conversation
Ichiro Umata, Koki Ijuin, Tsuneo Kato, Seiichi Yamamoto, Japan

Methods of Efficiently Constructing Text-dialogue-agent System using Existing Anime Character
Ryo Ishii, Ryuichiro Higashinaka, Koh Mitsuda, Taichi Katayama, Masahiro Mizukami, Junji Tomita, Hidetoshi Kawabata, Emi Yamaguchi, Noritake Adachi, Yushi Aono, Japan

DHM S076 continues...

Human Modeling for Nursing and Medical Art
Chair(s): Akihiko Goto, Yasuko Kitajima, Japan

Neural Network Risks Suggested by Optical Illusions
Hiroyuki Nishimoto, Japan

Verifying the Usefulness of Monitoring Sensors Used by Caregivers in Nursing Homes
Yasuko Kitajima, Isamu Kajitani, Mitsuhiro Nakamura, Keiko Homma, Yoshio Matsumoto, Jukai Maeda, Japan

Deep Learning based Gesture Classification for Hand Physical Therapy Interactive Program
Maleewan Rungruangnukul, Thitirat Siriborvornratanakul, Thailand

Comfort Evaluation of the Range of Motion of Human Upper Limb Joints
Zhongqi Liu, Xiaocong Niu, Qianxiang Zhou, P.R. China

Application of Game Therapy in the Health of Future Elderly: An Experience Design Perspective
Yuqi Liu, Ryoichi Tamura, Japan

Social Computing and Social Media

Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management

MONDAY 09:00 - 11:00

DHM S077

Tools for Taking Fatigue into Account in Human Task Simulations

Chair(s): Damien Chablat, *France*

Excessive Smartphone Use and Associated Physiological Disorders – A Survey on Research Status in India

D. Bhanu Priya, Murali Subramaniyam, *India*; Seung Nam Min, *Korea*

Sign Language to Speech Converter Using Raspberry-Pi

Sravya Koppuravuri, Sukumar Sai Pondari, Deep Seth, *India*

Determining Endurance Limit under Intermittent Physical Operations based on a Combined Fatigue-recovery Model

Jiawei Fu, Liang Ma, *P.R. China*

Research and Design of Relieving Neck Muscle Fatigue Based on Serious Game

Dian Zhu, Zishan Song, Jingran He, Chufan Jin, Xi Chen, *P.R. China*

Study on the Effect of Cervical Spine Somatosensory Games of Virtual Reality and Augmented Reality on Relieving Neck Muscle Fatigue

Zishan Song, Ting Han, Dian Zhu, Yufei Xie, Hanyue Xiao, Tianjia Shen, Jingran He, *P.R. China*

DUXU S078

Digital Contents Technology

Chair(s): Masasuke Yasumoto, *Japan*

Interactive Pavement: Moving Spatial Surface to Dynamically Convey Information

Voraphan Vorakitphan, Takashi Ohta, *Japan*

VR Appreciation System for Fountain Pens and Analysis of User Behaviors in Museum Exhibition

Asako Soga, Takuzi Suzuki, *Japan*

Possibility of Using High-quality Bow Interface in VAIR Field

Masasuke Yasumoto, Kazumasa Shida, Takehiro Teraoka, *Japan*

Proposal of Perception Method of Existence of Objects in 3D Space using Quasi-electrostatic Field

Kenta Suzuki, Koya Abe, Hisashi Sato, *Japan*

S079

Ergonomics in Design - I

Chair(s): Marcelo M. Soares, *P.R. China*

User Experience in Kiosk Application for Traceability of Fishery Products

José Oliveira, Pedro Miguel Faria, António Miguel Rosado da Cruz, *Portugal*

A Usability Testing Comparing Two Mobile Phone Gimbals

Keke Zhong, Junfei Liu, Zhixin Gui, Chang Meng, Marcelo M. Soares, *P.R. China*

Systematic Review on Using Biofeedback (EEG and Infrared Thermography) to Evaluate Emotion and User Perception Acquired by Kansei Engineering

Jiayu Zeng, Marcelo M. Soares, Renke He, *P.R. China*

Babe: An Experience Sharing Design for Enhancing Fatherhood during Pregnancy

Jingyu Lin, Danni Chang, *P.R. China*

Research of Comfort Model of Eye Massager During Siesta in the Office

Qi Huang, Hongmiao Liu, *P.R. China*

Does the Kindle Conform to Chinese Users' Usage Habits? A Usability Assessment of the Kindle Paperwhite

Yuxi He, Fang Lin, Jinyao Song, Tao Su, Marcelo M. Soares, Zhixin Gui, Jiayu Zeng, *P.R. China*

DAPI S080

Ambient and Civic Computing

Chair(s): Tatsuo Nakajima, *Japan*

Digitally Enhancing Society through Structuralism: Virtualizing Collective Human Eyesight and Hearing Capabilities as a Case Study

Risa Kimura, Tatsuo Nakajima, *Japan*

Civic CrowdSensing through Location-aware Virtual Monsters

Takuro Yonezawa, Mina Sakamura, Nobuo Kawaguchi, Jin Nakazawa, *Japan*

iOS crowd-sensing won't hurt a bit!: AWARE Framework and Sustainable Study Guideline for iOS Platform

Yuuki Nishiyama, *Japan*; Denzil Ferreira, *Finland*; Yusaku Eigen, Wataru Sasaki, Tadashi Okoshi, Jin Nakazawa, *Japan*; Anind K. Dey, *United States*; Kaoru Sezaki, *Japan*

Tele Echo Tube for Historic House Tojo-Tei in Matsudo International Science Art Festival 2018

Hill Hiroki Kobayashi, Daisuké Shimotoku, *Japan*

Development of One-Stop Smart City Application by Interdisciplinary Data Linkage

Kenro Aihara, Atsuhiko Takasu, *Japan*

Design, User Experience, and Usability

Distributed, Ambient and Pervasive Interactions

HCI in Business, Government and Organizations

HCIBGO S081

Interactive Sales Scenarios

Chair(s): Andrea Mueller, *Germany*

User Experience Testing vs. Marketing Experts – Can Empirical Research Beat Practical Knowledge in Dialog Marketing?

Christina Miclau, Barbara Woerz, Laura Heiland, Dennis Hess, Beatrice Weber, Alice Emmeler, Hans-Peter Saar, Jonas Belke, Niklas Hose, Oxana Ernst, Andrea Mueller, *Germany*

Protect Our Health with Cleaner Cars – How to Gain Customer Acceptance for Air Pollution Decreasing Retrofit Purchase

Joachim Reiter, Uwe Hartmann, Larissa Greschuchna, Jaline Westrich, Aliyah Mörtl, Laura Cherkaoui, Maike Breier, Malgorzata Olbrich, Carolin Hoffmann, Andreas Franz, Johannes Wensert, Andrea Mueller, *Germany*

Captivating Product Experiences: How Virtual Reality Creates Flow and Thereby Optimize Product Presentations

Kai Israel, Lea Buchweitz, Dieter K. Tscheulin, Christopher Zerres, Oliver Korn, *Germany*

Usability Studies of E-Commerce Checkout Process: A Perspective from Thailand

Patcharee Butnampetch, Panja Sasithonwan, Butsakorn Teeranan, Thippaya Chintakovid, *Thailand*

POS Product Presentation Concepts - Analysis of Affective, Conative and Cognitive Components in Decision Making

Vanessa Schwahn, Achim Burkhardt, Andrea Mueller, Christina Miclau, *Germany*

Learning and Collaboration Technologies

LCT S082

Interactive Learning Ecosystems - II

Chair(s): Francisco J. García-Peñalvo, David Fonseca, *Spain*

Case Studies of Developing and Using Learning Systems in a Department of Engineering

Sachiko Deguchi, *Japan*

Development of a Visualization System to Analyze Student-Teacher Conversations

Jun Iio, Ryuichi Sugiyama, *Japan*

Tirana Plug-in River: Catalyst Playful Experiences to Revitalize Albanian Informal Settlements

Saimir Kristo, Valerio Perna, Keti Hoxha, *Albania*

StickAndClick – Sticking and Composing Simple Games as a Learning Activity

Andrea Valente, Emanuela Marchetti, *Denmark*

Immersive Telepresence Framework for Remote Educational Scenarios

Jean Botev, *Luxembourg*; Francisco J. Rodríguez-Lera, *Spain*

Human Aspects of IT for the Aged Population

ITAP S083

Intelligent Environments for Healthy and Active Aging - II

Chair(s): Hsiao-Ting Tseng, *Taiwan*

Research on Cognitive Training of Digital Application System Introducing Reminiscence Therapy for the Experience of People with Dementia

PeiFen Wu, Hui-Jiun Hu, WenFu Wang, KuangYi Fan, ChunWe Huang, *Taiwan*

Explore the Demands of the Elderly by Integrating QFD and Scenario-Based Design

Shuo-Fang Liu, Chun-Han Tsai, Ching-Fen Chang, *Taiwan*

Active Aging AI Community Care Ecosystem Design

Hsiao-Ting Tseng, Hsieh-Hong Huang, Chen-Chiung Hsieh, *Taiwan*

Research on the Standing Movement of the Elderly

Mengjing Cai, Yinxia Li, Huimin Hu, *P.R. China*

Understanding the Exclusion Issues of Mobility-as-a-Service (MaaS): the Potential Problems of Older Travellers' Involvement

Yuanjun Li, *P.R. China*; Sharon Cook, Andrew May, *United Kingdom*

HCI for Cybersecurity, Privacy and Trust

HCI-CPT S084

Human Factors in Cybersecurity - II

Chair(s): Magdalene Ng, *United Kingdom*

Usable Security by Design: a Pattern Approach

Bilal Naqvi, Jari Porras, *Finland*

The Impact of Advertisements on User Attention During Permission Authorization

Yousra Javed, *Pakistan*; Elham Al Qahtani, Mohamed Shehab, *United States*

Examining Human Individual Differences in Cyber Security and Possible Implications for Human-Machine Interface Design

Laura M. Bishop, Phillip L. Morgan, Phoebe M. Asquith, George Raywood-Burke, Adam Wedgbury, Kevin Jones, *United Kingdom*

Assessing the human factor of cybersecurity: Can surveys tell the truth?

Špela Orehek, Gregor Petrič, Jan Šinigoj, *Slovenia*

Not Annoying the User for Better Password Choice: Effect of Incidental Anger Emotion on Password Choice

Laheem Khan, Kovila P.L. Coopamootoo, Magdalene Ng, *United Kingdom*

Natural vs. Technical Language Preference and their Impact on Firewall Configuration

Artem Voronkov, Leonardo A. Martucci, *Sweden*

MONDAY 09:00 - 11:00

HCI S085

Digital Game and Playful Experiences
Chair(s): Amir Zaib Abbasi, *Pakistan*

Serious Games Design for and with Adolescents: Empirically based Implications for Purposeful Games
TBarbara Göbl, Dayana Hristova, Suzana Jovicic, Helmut Hlavacs, *Austria*

Customer Inspiration via Advertising Value of Pop-Up Ads in Online Games
Amir Zaib Abbasi, *Pakistan*; Ali Hussain, *Malaysia*; Helmut Hlavacs, *Austria*; Muhammad Umair Shah, *Canada*; Ding Hooi Ting, *Malaysia*; Umair Rehman, *Canada*

Virtual Tourism in a Game Environment: Untangling Judged Affordances and Sense of Place
Ingvar Tjostheim, *Norway*; John A. Waterworth, *Sweden*

A simulation game to acquire skills on Industry 4.0
ROSSANO VERONICA, Rosa Lanzilotti, Teresa Roselli, *Italy*

Games for Cybersecurity Decision-making
Atif Hussain, Kristen Kuhn, Siraj Ahmed Shaikh, *United Kingdom*

Mixed Method Approach to Evaluate Web 2.0 Applications in Business Games
Susann Zeiner-Fink, Anne Goy, Angelika C. Bullinger, *Germany*

MobiTAS S086

Highly Automated Driving: What Drivers Need
Chair(s): Josef F. Krems, *Germany*

The Relationship between Drowsiness Level and Takeover Performance in Automated Driving
Yanbin Wu, Ken Kihara, Yuji Takeda, Toshihisa Sato, Motoyuki Akamatsu, Satoshi Kitazaki, *Japan*

User Perception and the Effect of Forms and Movements in Human-Machine Interaction Applying Steer-by-Wire for Autonomous Vehicles
Dokshin Lim, Jihoon Lee, Sung Mahn Kim, *Korea*

The More You Know, the More You Can Trust: Drivers' Understanding of the Advanced Driver Assistance System
Jiyong Cho, Yuni (JeongYun) Heo, *Korea*

Decision-making in Interactions between Two Vehicles at a Highway Junction
Asaya Shimojo, Yuki Ninomiya, Shota Matsubayashi, Kazuhisa Miwa, Hitoshi Terai, Hiroyuki Okuda, Tatsuya Suzuki, *Japan*

Vehicle movement as implicit communication cue: Comparing pedestrians' detection performance between simulation and test track
Claudia Ackermann, Matthias Beggiano, *Germany*

User Needs in Automated Driving: Why and How to Support the User in Trip Planning?
Tobias Hecht, Klaus Bengler, *Germany*

Evaluation of Driver Drowsiness while Using Automated Driving Systems on Driving Simulator, Test Course and Public Roads
Toshihisa Sato, Yuji Takeda, Motoyuki Akamatsu, Satoshi Kitazaki, *Japan*

S087

Proposals on Smart Mobility - I
Chair(s): To be announced

A Decision Support System for Terminal Express Delivery Route Planning
Jiazhuo Fu, Wenzhu Liao, *P.R. China*

From the Parking Lot to Your Gate: A Need-Centered Approach for Optimizing User Experience in Automated Valet Parking System
Jun Ma, Xuejing Feng, Zaiyan Gong, Qianwen Zhang, *P.R. China*

Investigating the Influencing Factors of User Experience in Car-sharing Services: an Application of DEMATEL Method
Yufei Xie, Hanyue Xiao, Tianjia Shen, Ting Han, *P.R. China*

A Filed Study of External HMI for Autonomous Vehicles When Interacting with Pedestrians
Ya Wang, Qiang Xu, Xiaojun Luo, Jifang Wang, *P.R. China*

Smart and Seamless: Investigating User Needs and Recognition for Smartphone-Automobile Interactive Features
Hsinwen Chang, *Taiwan*; Liping Li, *P.R. China*

MOBILE S088

Mobile Social Media and Mobile Commerce
Chair(s): Shuiqing Yang, Peiyan Zhou, *P.R. China*

How does Censorship Shape Citizens' Participations of Mobile Government Social Media? A Value Perspective
Miao Zhang, Shuiqing Yang, *P.R. China*

Factors Influencing Mobile Tourism Recommender Systems Adoption by Smart Travellers: Perceived Value and Parasocial Interaction Perspectives
Dedi I. Inan, Zaenal Abidin, Achmad Nizar Hidayanto, Muhammad Erlangga Rianto, Fadlan Zakiri, Muhammad Dimas Praharsa, *Indonesia*; Kongkiti Phusavat, *P.R. China*

Optimization of Online Dispute Resolution Process in Mobile Electronic Commerce —A Case of the ODR Platform's Process Optimization in China Zhejiang Province
Lifan Yang, Tianjiao Niu, *P.R. China*

The effect of mobile app design features on student buying behavior for online food ordering and delivery
Narayan Prabhu, Vishal Soodan, *India*

Human-Computer Interaction

HCI in Mobility, Transport and Automotive Systems

Design, Operation and Evaluation of Mobile Communications

| HCI S091 | S092 | HIMI S093 | S094 |
|---|---|---|---|
| <p>Research on AI Art and Practice - II Chair(s): Yi Ji, <i>P.R. China</i></p> | <p>Input Methods and Techniques - III Chair(s): Vasilis Kouroumalis, <i>Greece</i></p> | <p>Improvement in Learning and Educational Environments using ICT - II Chair(s): Takahito Tomoto, Yusuke Kometani, Takako Akakura, <i>Japan</i></p> | <p>Virtual Reality and Haptic Application - II Chair(s): Kentaro Kotani, Daiji Kobayashi, <i>Japan</i></p> |
| <p>Design and Research of Intelligent Products for the Management of Chronic Diseases of the Elderly Xinxin Sun, Zhenzhou Li, Minglin Yang, <i>P.R. China</i></p> | <p>Floating Hierarchical Menus for Swipe-based Navigation on Touchscreen Mobile Devices Alen Salkanović, Ivan Štajduhar, Sandi Ljubic, <i>Croatia</i></p> | <p>Compogram: Development and Evaluation of ITS for Organizing Programming-Knowledge by Visualizing Behavior Kento Koike, Tomohiro Mogi, Takahito Tomoto, Tomoya Horiguchi, Tsukasa Hirashima, <i>Japan</i></p> | <p>A Preliminary Study on Reaching Position Estimation Model for the Subtle Action Disruption Yoshinobu Miya, Takehiko Yamaguchi, <i>Japan</i>; Tania Giovannetti, <i>United States</i>; Maiko Sakamoto, Hayato Ohwada, <i>Japan</i></p> |
| <p>Research on Interaction Design of Artificial Intelligence Mock Interview Application Based on Goal-directed Design Theory Yingying Miao, Wenqian Huang, Bin Jiang, <i>P.R. China</i></p> | <p>The Potential of Gesture-Based Interaction Kasper Rise, Ole Andreas Alsos, <i>Norway</i></p> | <p>Music Interpretation Support System - Integration Support Interface of Impressions from Listening to Music and Reading its Score - Tomoko Kojiri, Akio Sugikami, <i>Japan</i></p> | <p>Development for tablet-based perimeter using temporal characteristics of saccadic durations Naoki Maeshiba, Kentaro Kotani, Satoshi Suzuki, Takafumi Asao, <i>Japan</i></p> |
| <p>Research on Evaluation of Perceptual Experience Quality of Web-based Panoramic Navigation System Based on Cognitive Mechanism Haowei Wang, Bin Jiang, Qianwen Chen, <i>P.R. China</i></p> | <p>Semi-automatic Annotation of OCT Images for CNN Training Sebastian Schleier, Noah Stolz, Holger Langner, Rama Hasan, Christian Roschke, Marc Ritter, <i>Germany</i></p> | <p>Development of a Prototyping Support Tool for a Data Utilization Skill-Development Program: Development and Evaluation of a Camera Sensor Pod with an AI-Based People-Counting Function Yusuke Kometani, Koichiro Yonemaru, Naoto Hikawa, Kyosuke Takahashi, Naka Gotoda, Takayuki Kunieda, Rihito Yaegashi, <i>Japan</i></p> | <p>Virtual Environment Assessment for Tasks Based on Sense of Embodiment Daiji Kobayashi, Yoshiki Ito, Ryo Nikaido, Hiroya Suzuki, Tetsuya Harada, <i>Japan</i></p> |
| <p>Research on Gesture Interaction Design for Home Control Intelligent Terminals Bin Jiang, Xuewei Wang, Yue Wu, <i>P.R. China</i></p> | <p>Gesture-based interaction: Visual gesture mapping Kasper Rise, Ole Andreas Alsos, <i>Norway</i></p> | <p>Decision Support System with Institutional Research: A Student-Centered Enrollment Advising System Takeshi Matsuda, Yuki Watanabe, Katsusuke Shigeta, Nobuhiko Kondo, Hiroshi Kato, <i>Japan</i></p> | <p>Development and Evaluation of a Pen type Thermal Sensation Presentation Device for SPIDAR-tablet Kaede Nohara, Yasuna Kubo, Makoto Sato, Takehiko Yamaguchi, Tetsuya Harada, <i>Japan</i></p> |
| <p>Research on Evaluation Index System of Artificial Intelligence Design Based on User Experience Qianwen Chen, Haowei Wang, <i>P.R. China</i></p> | | | <p>Analysis of Differences in the Manner to Move Object in Real Space and Virtual Space Using Haptic Device for Two Fingers and HMD Yuki Aoki, Yuki Tasaka, Junji Odaka, Sakae Yamamoto, Makoto Sato, Takehiko Yamaguchi, Tetsuya Harada, <i>Japan</i></p> |

Human-Computer Interaction

Human Interface and the Management of Information

| EPCE S095 | S096 | S097 | UAHCI S098 continues... |
|---|--|---|---|
| <p>Flight Safety and Human Factors Chair(s): Lei Wang, <i>P.R. China</i></p> | <p>Psychological Research for Designing Better Intelligent Systems Chair(s): Jing-Yu Zhang, <i>P.R. China</i></p> | <p>Studies on Human Physiology and Cognition Chair(s): Asterios Leonidis, <i>Greece</i></p> | <p>Cutting Edge in Artificial Intelligence and Biosignal Analysis for Automatic Control Systems, Virtual Reality and the Education Chair(s): Hiroki Takada, <i>Japan</i></p> |
| <p>Effects of Mental Workload and Risk Perception on Pilots' Safety Performance in Adverse Weather Contexts Shan Gao, Lei Wang, <i>P.R. China</i></p> | <p>Comparison of Pedestrians' Gap Acceptance Behavior towards Automated and Human-Driven Vehicles Wenxiang Chen, Qianni Jiang, Xiangling Zhuang, Guojie Ma, <i>P.R. China</i></p> | <p>Hand Movements influence Time Perception of Visual Stimuli in Sub or Supra Seconds duration Weiqi Zheng, Han Zhao, Yichen Zhang, Jiaxin Ma, Ziyuan Ren, <i>P.R. China</i></p> | <p>Being Aware of One's Self in the Auto-Generated Chat with a Communication Robot Shu Matsuura, Reika Omokawa, <i>Japan</i></p> |
| <p>Evaluating Pilot's Perceived Workload on Interacting with Augmented Reality Device in Flight Operations Wen-Chin Li, <i>United Kingdom</i>; Zepu Yan, Jingyi Zhang, <i>P.R. China</i>; Graham Braithwaite, Samuel Court, Mudassir Lone, Bikram Thapa, <i>United Kingdom</i></p> | <p>Whether Information Source should be Provided in the Response of Voice Interaction System? Yaping Zhang, Ronggang Zhou, Yanyan Sun, Liming Zou, Huiwen Wang, Min Zhao, <i>P.R. China</i></p> | <p>Consideration of How Different Rearview Presentations Used for Electronic Mirrors on Automobiles Affect Human Spatial Cognition Yutaro Kido, Sora Kanzaki, Tomonori Ohtsubo, <i>Japan</i>; Yoshiaki Matsuba, Daichi Sugawara, <i>P.R. China</i>; Miwa Nakanishi, <i>Japan</i></p> | <p>Usability Evaluation of Short Dwell-time Activated Eye Typing Techniques Sayan Sarcar, <i>Japan</i></p> |
| <p>An Overview of Paper Documentation Moving to Onboard Information System (OIS) for Commercial Aircraft Wei Tan, Yin Jiang, <i>P.R. China</i></p> | <p>The Effect of Group Membership, System Reliability and Anthropomorphic Appearance on user's trust in Intelligent Decision Support System Xiangying Zou, Chunhui Lv, Jing-Yu Zhang, <i>P.R. China</i></p> | <p>Relationship Between Thermal Sensation and Human Cognitive Performance Based on PMV Jiawei Fu, Rui Yan, Fulin Wang, Liang Ma, <i>P.R. China</i></p> | <p>A Virtual Rehabilitation System for Occupational Therapy with Hand Motion Capture and Force Feedback -Implementation with Vibration Motor- Kouki Nagamune, Shinto Nakamura, <i>Japan</i></p> |
| <p>Establishment of National Safety Performance Evaluation Indicator System Min Luo, Yijie Sun, Yanqiu Chen, <i>P.R. China</i></p> | <p>Design Suggestions for Smart Tax Return Software based on Reviewing Tax Compliance literature Bo Zhang, Jing-Yu Zhang, <i>P.R. China</i></p> | <p>The Effects of Face Inversion and the Number of Feature Differences on Eye-movement Patterns Min-Fang Zhao, <i>P.R. China</i>; Hubert Zimmer, <i>Germany</i></p> | <p>Numerical Analysis of Bio-signal Using Generative Adversarial Networks Kohki Nakane, Hiroki Takada, Shota Yamamoto, Rentarou Ono, Masumi Takada, <i>Japan</i></p> |
| | <p>The Cueing Effect in Retrieval of Expertise: Designing for Future Intelligent Knowledge Management System Liang Zhang, Xiaoqin Li, Ting Xiong, Xiaoyue Pang, Jing-Yu Zhang, <i>P.R. China</i></p> | <p>Using Guided Cognitive Illusions to Compensate for the Motion Limits of 4D Seats Zhejun Liu, Guodong Yu, Jing Lin, Tianrun Gu, Qin Guo, <i>P.R. China</i></p> | <p>Effect of Background Element Difference on Regional Cerebral Blood Flow while Viewing Stereoscopic Video Clips Fumiya Kinoshita, Honoka Okuno, Hideaki Touyama, Masumi Takada, Masaru Miyao, Hiroki Takada, <i>Japan</i></p> <p>Relationship between Eye Movements and Individual Differences in Motion Sickness Susceptibility While Viewing Stereoscopic Movies under Controlled Consciousness Akihiro Sugiura, Kunihiro Tanaka, Hiroki Takada, <i>Japan</i></p> |

Engineering Psychology and Cognitive Ergonomics

Universal Access in Human-Computer Interaction

MONDAY 11:30 - 13:30



UAHCI S099

Designing Social Equity - Politics, Social Equality, and the Digital Society

Chair(s): Miriam E.N. Begnum, Norway

Understanding Organizations through Systems Oriented Design: Mapping Critical Intervention Points for Universal Design

Karina Ludwig, Miriam E.N. Begnum, Linda Blaasvær, Norway

Situated Ability: A Case from Higher Education on Digital Learning Environments

Diana Saplacan, Norway

Co-creating Persona Scenarios with Diverse Users Enriching Inclusive Design

Kristin Skeide Fuglerud, Trenton Schulz, Astri Letnes Janson, Anne Moen, Norway

Institutionalizing Universal Design: How Organizational Practices Can Promote Web Accessibility

G. Anthony Giannoumis, Lars Henrik Nordli, Norway

Universal Design of ICT: A Historical Journey from Specialized Adaptations towards Designing for Diversity

Miriam E.N. Begnum, Norway

S100

Design for All Methods and Tools

Chair(s): Margherita Antona, Greece

User Centred Design for Accessibility in Media Content – Sign Language and Virtual Signer

Vaishnavi Upadrasta, Astrid Oehme, Sandra Böhm, Germany

Exploring WAI-Aria Techniques to Enhance Screen Reader Interaction: The Case of a Portal for Rating Accessibility of Cultural Heritage Sites

Marina Buzzi, Barbara Leporini, Francesca Romano, Italy

From Accessible Interfaces to Useful and Adapted Interactions

Laura Burzagli, Pier Luigi Emiliani, Italy

Stakeholder Journey Analysis for Innovation: A Multiparty Analysis Framework for Startups

Jo E. Hannay, Kristin Skeide Fuglerud, Bjarte M. Østvold, Norway

Development of a Multilingual Questionnaire for the Deaf Community – Guidelines and Challenges

Astrid Oehme, Vaishnavi Upadrasta, Philipp Kotsch, Germany

VAMR S101

VAMR in Therapy, Well-being and Medicine

Chair(s): Maria Matsangidou, Cyprus

Multi-Channel Interaction Design and Implementation of Medical Pendant Based on Virtual Reality Technology

Dini Duan, Zhisheng Zhang, Hao Liu, Zhijie Xia, P.R. China

Classifying the Levels of Fear by Means of Machine Learning Techniques and VR in a Holonic-Based System for Treating Phobias - Experiments and Results

Oana Balan, Gabriela Moise, Alin Moldoveanu, Florica Moldoveanu, Marius Leordeanu, Romania

eTher – An Assistive Virtual Agent for Acrophobia Therapy in Virtual Reality

Oana Balan, Stefania Cristea, Gabriela Moise, Livia Petrescu, Silviu-Nicolae Ivaşcu, Alin Moldoveanu, Florica Moldoveanu, Marius Leordeanu, Romania

A Virtual Reality Dental Anxiety Mitigation Tool Based on Computerized Cognitive Behavioral Therapy

Ting Han, Hanyue Xiao, Tianjia Shen, Yufei Xie, Zeshi Zhu, P.R. China

Sampling Electrocardiography Conformation for a Virtual Reality Pain Management Tool

Maria Matsangidou, Cyprus; Alexis R. Mauger, Chee Siang Ang, United Kingdom; Constantinos Pattichis, Cyprus

S102

New Virtualities - II

Chair(s): To be announced

VREye: Exploring Human Visual Acuity Test Using Virtual Reality

Shivang Shekar, Pranav Reddy Pesaladine, Sai Anirudh Karre, Y. Raghu Reddy, India

Desktop and Virtual-reality training under varying degrees of task difficulty in a complex search-and-shoot scenario

Akash Rao, Sushil Chandra, Varun Dutt, India

Study on Assessing User Experience of Augmented Reality Applications

Lei Wang, Meiyu Lv, P.R. China

A HMD-based Virtual Display Environment with Adjustable Viewing Distance for Improving Task Performance

Makio Ishihara, Yukio Ishihara, Japan

Virtual, Augmented and Mixed Reality

MONDAY 11:30 - 13:30

| | CCD S103 | S104 | S105 | SCSM S106 | continues... |
|-----------------------|--|---|---|--|--------------|
| Cross-Cultural Design | <p>Design for Cross-Culture - II Chair(s): John Kreifeldt, <i>United States</i>; Rungtai Lin, <i>Taiwan</i></p> | <p>Kansei Issues in Cross-Cultural Design - II Chair(s): Kuohsiang Chen, <i>Taiwan</i>; Szu-Chi Chen, <i>Australia</i></p> | <p>Affective Computing and User Experience Design - II Chair(s): Pei-Luen Patrick Rau, <i>P.R. China</i>; Yu-Liang Chi, <i>Taiwan</i>; Xiaoang Irene Wan, <i>P.R. China</i></p> | <p>Design Issues in Social Computing Chair(s): Maria Korozi, <i>Greece</i></p> | |
| | <p>A Study of the Qualia Characteristics of Taiwanese Food Cheng Hsiang Yang, Po-Hsien Lin, <i>Taiwan</i></p> | <p>Applied the Technology Acceptance Model to Survey the mobile-learning adoption behavior in Science Museum Cheng-Wei Fan, <i>Taiwan</i></p> | <p>A Literature Review of the Research on the Uncanny Valley Jie Zhang, Shuo Li, Jing-Yu Zhang, Feng Du, Yue Qi, Xun Liu, <i>P.R. China</i></p> | <p>Application of Visual Saliency in the Background Image Cutting for Layout Design Liyu Zhu, Xueni Cao, Ying Fang, Liqun Zhang, Xiaodong Li, <i>P.R. China</i></p> | |
| | <p>Application of Auspicious Cultural In Metalworking Jewelry Design Minghong Shi, Chi Zhang, <i>P.R. China</i>; Yiwen Ting, Po-Hsien Lin, <i>Taiwan</i></p> | <p>Explore the Appeal of Social Media in Aesthetics Communication Among Different Culture Kai-Shuan Shen, Kuohsiang Chen, Yen-Tao Liu, <i>Taiwan</i></p> | <p>Enlightenments to the Beijing Winter Olympic Games: A Review of Main Color Schemes for Olympic Games Meiyu Lv, Huijun Qin, <i>P.R. China</i></p> | <p>Federated Artificial Intelligence for Unified Credit Assessment Minh-Duc Hoang, <i>Australia</i>; Linh Le, Anh-Tuan Nguyen, <i>Viet Nam</i>; Trang Le, Hoang D. Nguyen, <i>Singapore</i></p> | |
| | <p>Research on the utilization of unconventional materials in fashion styling Tuck Fai Cheng, <i>Malaysia</i>; Yanru Lyu, <i>P.R. China</i>; Cheng Hsiang Yang, Po-Hsien Lin, <i>Taiwan</i></p> | <p>What Would be the Next Design Evolution under the Auspices of Industry 4.0? Jyh-Rong Chou, <i>Taiwan</i></p> | <p>How to Inherit and Innovate Patterns on the Silk Road in Modern Design Chuan Wang, <i>P.R. China</i></p> | <p>Visual Saliency: How Text Influences Ying Fang, Liyu Zhu, Xueni Cao, Liqun Zhang, Xiaodong Li, <i>P.R. China</i></p> | |
| | <p>The Pilot Study of the Theater of the Bauhaus Yiwen Ting, <i>Taiwan</i>; Minghong Shi, <i>P.R. China</i>; Po-Hsien Lin, Rungtai Lin, <i>Taiwan</i></p> | <p>Interactive Assistive Technology with Corporate Sponsor and Crowdfunding for Children with Physical Disabilities Chien-Yu Lin, <i>Taiwan</i></p> | <p>The effect of multisensory information on the sense of control in stressful virtual environment Xiaofang Sun, Pei-Luen Patrick Rau, <i>P.R. China</i></p> | <p>Research on Computational Simulation of Advertising Posters Visual Cognition Xueni Cao, Ying Fang, Liyu Zhu, Xiaodong Li, Liqun Zhang, <i>P.R. China</i></p> | |
| | <p>Museum Immersion Interactive Design: Taking the Children Art Gallery Exhibition as an Example Ching Wen Chang, <i>Taiwan</i></p> | <p>Research on Sticker Cognition for Elderly People Using Instant Messaging Cheih Ying Chen, <i>Taiwan</i></p> | <p>PIKAR: A Pixel-Level Image Kansei Analysis and Recognition System Based on Deep Learning for User-Centered Product Design Yun Gong, Bingcheng Wang, Pei-Luen Patrick Rau, <i>P.R. China</i></p> | | |
| | <p>A Case Study of Applying 'Black Humor' to Ceramic Art Performance Mei-Ling Hsu, <i>Taiwan</i>; Wenting Fang, <i>P.R. China</i>; Po-Hsien Lin, Rungtai Lin, <i>Taiwan</i></p> | | | | |

Social Computing and Social Media

MONDAY 11:30 - 13:30

SCSM S107

Data Based Social Signal Processing - II

Chair(s): Hung-Hsuan Huang, Shogo Okada, Ryo Ishii, *Japan*

An Examination of Gaze during Conversation for Designing Culture-based Robot Behavior

Louisa Hardjasa, Atsushi Nakazawa, *Japan*

Utilization of Human-Robot Interaction for the Enhancement of Performer and Audience Engagement in Performing Art

Nihan Karatas, *Japan*; Hideo Sekino, *United States*; Takahiro Tanaka, *Japan*

Review of Electronic Word-of-Mouth Based on Bibliometrics

Peihan Wen, Ruiquan Wang, *P.R. China*

Analysis of Imitating Behavior on Social Media

Ying Zhong, Haihan Zhang, *Japan*

Knowledge Sharing and Community Promotion in Online Health Communities: Examining the Relationship between Social Support, Community Commitment, and Trust Transfer

Zaenal Abidin, Achmad Nizar Hidayanto, Dedi I. Inan, Amira Luthfia Fitriani, Atikah Zahrah Halim, Muhammad Farhan Mardadi, Rizkah Shalihah, *Indonesia*

AC S108

Augmented Cognition

EEG and Physiological Signals

Chair(s): Shunji Shimizu, *Japan*

Investigation of Biological Signals under the Stimulation of Basic Tastes

Masaki Hayashi, Peeraya Sripan, Uma Maheswari Rajagopalan, *Japan*; Runqing Zhang, *P.R. China*; Midori Sugaya, *Japan*

A Preliminary Experiment on the Evaluation of Aroma Effects using biological signals

Runqing Zhang, Chen Feng, *P.R. China*; Peeraya Sripan, Midori Sugaya, *Japan*

Examination of Stammering Symptomatic Improvement Training using Heartbeat-linked Vibration Stimulation

Shogo Matsuno, Yuya Yamada, Naoaki Itakura, Tota Mizuno, *Japan*

Ensemble Usage for Classification of EEG Signals: A Review with Comparison

Zaib Unnisa, Sultan Zia, Umair Muneer Butt, *Pakistan*; Sukumar Letchmunan, *Malaysia*; Sadaf Ilyas, *Pakistan*

Basic Study to Reduce the Artifact from Brain Activity Data with Auto-Regressive Model

Shunji Shimizu, Masaya Hori, Hiroaki Inoue, Yu Kikuchi, Takuya Kiryu, Fumikazu Miwakeichi, *Japan*

Analyses of Impression Changes and Frontal Lobe Activity While Viewing Videos

Anna Endo, Naoki Takahashi, Takashi Sakamoto, Toshikazu Kato, *Japan*

DHM S109

Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management

Human-Robot Interaction

Chair(s): Yaqin Cao, *P.R. China*

User Preference toward Appearance of Mobile Input Method Editor based on Kansei Engineering

Yun Zhang, Yaqin Cao, Yi Ding, Yujie Zhao, *P.R. China*

Semi-Autonomous Collaborative Mobile Platform with Pre-Diagnostics for Hospitals

Vishal Reddy Gade, Ashish Soni, Bhargava Rajaram, Deep Seth, *India*

A Visual Tracking Method to Explore the Effect of Presence on Online Consumers

Yu Sun, *P.R. China*

Threat or Opportunity -- Analysis of the Impact of Artificial Intelligence on Future Employment

Fenglian Wang, Mingqing Hu, Min Zhu, *P.R. China*

Multi-pose Face Recognition based on Block Adaptation

Jianguo Shi, Yuanyuan Zhao, *P.R. China*

S110

Anthropometry, Posture and Motion Modelling and Ergonomic Applications

Chair(s): To be announced

Ergonomic-based Clothing Design for The Elderly

Jingxiao Liao, Xiaoping Hu, *P.R. China*

Study on Chinese Elderly Women's Clothing Design based on Ergonomics

Longlin Luo, Xiaoping Hu, *P.R. China*

Investigation on Heavy Truck Cab Ergonomics

Junmin Du, Weiyu Sun, Haoshu Gu, Xin Zhang, Huimin Hu, Yang Liu, *P.R. China*

The effect of break on discomfort and variation in EMG activities while using a smartphone: A preliminary study in a Chinese university population

Peilin Li, Yi Wang, Yi Ding, Yaqin Cao, *P.R. China*; Vincent G. Duffy, *United States*

Individual Differences in Office Comfort: What Affects Comfort Varies by Person

Masashi Sugimoto, Fan Zhang, Noriko Nagata, Kota Kurihara, Seiro Yuge, Makoto Takata, Koji Ota, Seiji Furukawa, *Japan*

DUXU S111

Ergonomics in Design - II
Chair(s): Marcelo M. Soares, P.R. China

Voice-based Bodyweight Training Support System using Smartphone
Ruiyun Wang, Shin Takahashi, Buntarou Shizuki, Ikkaku Kawaguchi, Japan

A Usability Study of a Brother Printer and Improvement with Ergonomic Recommendations
Linlang Shen, Ziren Zhou, Xinran Su, Jing Wang, Marcelo M. Soares, P.R. China

A Comparative Usability Analysis of Handheld Game Consoles
Weiting Gao, Yun Wang, Wenzhuo Zhang, Chuan Qin, Marcelo M. Soares, P.R. China

Research on usability evaluation and redesign of treadmill man-machine interface
Du Qin, Wan Tiantian, Zhang Xinrui, Dai Roujing, Marcelo M. Soares, P.R. China

Usability Assessment of the Camera GR II
Zhanyan Luo, Tao Ruoyu, Yiling Zeng, Rui Zhang, Marcelo M. Soares, P.R. China

Usability Testing of Bank of China Automatic Teller Machine
Yingnan Weng, Shuxin Xia, Shuang Liang, Marcelo M. Soares, P.R. China

DAPI S112

Design with Interactivity and Connectivity
Chair(s): Jun Hu, Netherlands

Mood Board Tool—An Innovation Method in Vehicle HMI Design
Qingshu Zeng, Mingyue Hu, P.R. China

Designing an Interactive Platform for Intangible Cultural Heritage Knowledge of Taoyuan Woodcarving Craft
Mingxiang Shi, Qingshu Zeng, P.R. China

Aspects of Form, Interface, and Interaction in the Design of Wearable Devices
Ziqiao Wang, P.R. China

FlowGlove: A Liquid-Based Wearable Device for Haptic Interaction in Virtual Reality
Lijuan Liu, Cheng Yao, Yizhou Liu, Pinhao Wang, Yang Chen, Fangtian Ying, P.R. China

Computer Vision on Wheelchairs: Detecting Sleeping Behavior of People with Intellectual Disabilities
Lang Bai, Jun Hu, Netherlands

PuzMap: Designing A Multi-Sensory Puzzle Map for Children to Learn Geography
Junwu Wang, Lijuan Liu, Muling Huang, Weilin Jiang, Cheng Yao, Fangtian Ying, P.R. China

S113

Designing Intelligent Environments - II
Chair(s): Justina Lydekaityte, Denmark

Dynamic Consent: Physical Switches and Feedback to Adjust Consent to IoT Data Collection
Henrich C. Pöhls, Germany; Noëlle Rakotondravony, Madagascar

Textile Designer Perspective on Haptic Interface Design: A Sensorial Platform for Conversation between Discipline
Riikka Townsend, Finland; Anne Louise Bang, Jussi Mikkonen, Denmark

Exploring the Design of Interactive Smart Textiles for emotion regulation
Mengqi Jiang, Martijn Ten Bhömer, Hai-Ning Liang, P.R. China

Extended User Interface: NFC-Enabled Product Packaging for Enhanced User Experience
Justina Lydekaityte, Denmark

Evaluation of the Tourists' Satisfaction of Smart Tourist Attractions Using Importance-Performance Analysis — Taking Jiuzhaigou as an Example
Chufan Jin, Dian Zhu, Xi Chen, Jingran He, P.R. China

LCT S114

Learning in Virtual, Augmented and Simulated Environments
Chair(s): Iliia Adami, Greece

The Use of Augmented Reality for Solving Arithmetic Problems for Preschool Children
Siyuan Zhou, Xu Sun, Zhiyu Shi, Yanyi Lu, P.R. China

First-person Perspective Physics Learning Platform Based On Virtual Reality
Yu Han, Yining Shi, Juanjuan Wang, Yue Liu, Yongtian Wang, P.R. China

Preschool Safety Education with Digital Media-based Learning Application— Kinder
Cheng-Feng Sun, United States; Yao-Cheng Chan, Shih-Yi Chien, Yi-Ling Lin, Taiwan; I-Han Hsiao, United States

The Influence of Picture Book Interaction Design on Preschool Children's Reading Experience
Liyang Wang, P.R. China

The Influence of Simulation Tool Usage on Architecture Student Design: Shifting from a Technical Perspective to a Design-Focused Perspective
Camilla Maia, Jaewan Park, Sungeun Lee, Bokgiu Choi, Suji Choi, Sangwon Lee, Korea

Design, User Experience, and Usability

Distributed, Ambient and Pervasive Interactions

Learning and Collaboration Technologies

MONDAY 11:30 - 13:30

ITAP S115

Senior Cloud and Active Aging
Chair(s): Masatomo Kobayashi, Kenichiro Ito, *Japan*

Evaluating Seniors' Virtual Reality Experience Performed at a Local Community Event in Japan
Kenichiro Ito, Ryogo Ogino, Atsushi Hiyama, Michitaka Hirose, *Japan*

Combining Motivating Strategies with Design Concepts for Mobile Apps to Increase Usability for the Elderly and Alzheimer Patients
Christian Eichhorn, David A. Plecher, Martin Lurz, Nadja Leipold, Markus Böhm, Helmut Krcmar, Angela Ott, Dorothee Volkert, *Germany*; Atsushi Hiyama, *Japan*; Gudrun Klinker, *Germany*

Mobile Application to Record Daily Life for Seniors Based on Experience Sampling Method (ESM)
Takahiro Miura, Masafumi Arata, Yasushi Sukenari, Rinpei Miura, Akiko Nishino, Toshio Otsuki, Kazuhiko Nishide, Junichiro Okata, *Japan*

Approaching Behavior Analysis for Improving a Mobile Communication Robot in a Nursing Home
Misato Nihet, Mio Nakamura, Kohei Ikeda, Kazuki Kawamura, Hiroki Yamashita, Minoru Kamata, *Japan*

Services for Cognitive Health Co-created with Older Adults
Mihoko Otake-Matsuura, Yoshie Taguchi, Katsutoshi Negishi, Mitsuteru Matsumura, Kiyomi Shimizu, Eiko Nagata, Hideko Nagahisa, Akane Uotani, Akira Suzuki, Mieko Yoshida, Norihisa Miyake, *Japan*

HCI-CPT S116

Privacy and Personal Data
Chair(s): To be announced

Parents Unwittingly Leak Their Children's Data: A GDPR Time Bomb?
Suzanne Prior, Natalie Coull, *United Kingdom*

To Allow, or Deny? That is the Question
Panagiotis Andriotis, *United Kingdom*; Atsushihiro Takasu, *Japan*

Modelling and Presentation of Privacy-Relevant Information for Internet Users
Denis Feth, *Germany*

A Study on User Preference: Influencing App Selection Decision with Privacy Indicator
Sven Bock, *Germany*; Nurul Momen, *Sweden*

Perspectives on Information Technology Artefacts in Trust-related Interactions
Holger Koelmann, *Germany*

HCI-Games S117

Modelling Learning and Optimal Performance in Games for Human and AI Players
Chair(s): Benjamin Ultan Cowley, *Finland*

Utilization of Neurophysiological Data to Classify Player Immersion to Distract from Pain
Kellyann Stamp, *United Kingdom*; Chelsea Dobbins, *Australia*; Stephen Fairclough, *United Kingdom*

Behavlet Analytics for Player Profiling and Churn Prediction
Darryl Charles, *United Kingdom*; Benjamin Ultan Cowley, *Finland*

Generalised Player Modelling: why Artificial Intelligence in Games should Incorporate Meaning, with a Formalism for So Doing
Benjamin Ultan Cowley, *Finland*

Adaptive Puzzle Generation for Computational Thinking
Marco Scirea, *Italy*

MobiTAS S118

Proposals on Smart Mobility - II
Chair(s): Arjan Kuijper, *Germany*

Range InSight - Visualizing Range-Related Information in Battery Electric Buses
Jacob Stahl, Markus Gödker, Thomas Franke, *Germany*

NannyCaps - Monitoring Child Conditions and Activity in Automotive Applications Using Capacitive Proximity Sensing
Sebastian Frank, Arjan Kuijper, *Germany*

A Passenger Context Model for Adaptive Passenger Information in Public Transport
Christine Keller, Waldemar Titov, Thomas Schlegel, *Germany*

A Multi-Device Evaluation Approach of Passenger Information Systems in Smart Public Transport
Waldemar Titov, Hoa Tran, Christine Keller, Thomas Schlegel, *Germany*

Privacy by Design: Analysis of Capacitive Proximity Sensing as System of Choice for Driver Vehicle Interfaces
Sebastian Frank, Arjan Kuijper, *Germany*

Human Aspects of IT for the Aged Population

HCI for Cybersecurity, Privacy and Trust

HCI in Games

HCI in Mobility, Transport and Automotive Systems

C&C S119

Culture and Computing

HCI from Within: Developing Locally and Regionally Relevant HCI Theory - II

Chair(s): Chenyue Wang, P.R. China

Research on Cross-Cultural Participatory Design by Design Teams Based on Chinese Cultural Background

Rui Xi, Xin-Li Wei, De-Chuan Wang, Xian-Gang Qin, P.R. China; Torkil Clemmensen, Denmark; Wen-jun Hou, P.R. China

TrackZenan: Digital Flower Arrangement using Trackpad and Stylus Pen

Anna Yokokubo, Yuyi Kato, Itiro Sii, Japan

Study on the Development of Ruichang Bamboo Weaving Patterns based on Computer Graphics and Machine Learning

Miao Liu, Chenyue Wang, Jiale Zhou, P.R. China

Research on the Regenerated Design of Blue Calico based on Computer Image Processing

Yuanyuan Wang, Rongrong Fu, P.R. China

A Study on Symbolic Aesthetics of China's Splashed Ink Freehand Landscape Painting

Liming Liu, P.R. China

AI-HCI S120

Artificial Intelligence in HCI

AI for Core Tasks in Application Domains - III

Chair(s): Margaux Fourie, South Africa

Support Vector Machine Algorithm to Classify Instagram Users' Accounts Based on Users' Interests

Al-Batool Al-Ghamdi, Ameenah Al-Sulami, Nouf Al-Jadani, Maha Aljohani, Saudi Arabia

A Feature Importance Study in Ballet Pose Recognition with OpenPose

Margaux Fourie, Dustin Van der Haar, South Africa

Socio-Technical Design of Hybrid Intelligence Systems – the Case of Predictive Maintenance

Thomas Herrmann, Germany

Using Artificial Intelligence to Predict Academic Performance

Arsénio Reis, Tânia Rocha, Paulo Martins, João Barroso, Portugal

Design Intelligence - Pitfalls and Challenges when Designing AI Algorithms in B2B Factory Automation

Jennifer Heier, Jan Willmann, Karsten Wendland, Germany

NOTES

MONDAY 11:30 - 13:30

| HCI | S121 | S122 | S123 | S124 |
|-----|---|---|--|---|
| | <p>Social Organization and Democracy Chair(s): Masaaki Kurosu, <i>Japan</i></p> | <p>HCI for Health and Well-being Chair(s): To be announced</p> | <p>Interacting with Conversational Agents Chair(s): Margherita Antona, <i>Greece</i></p> | <p>Research on AI Art and Practice - III Chair(s): Yi Ji, <i>P.R. China</i></p> |
| | <p>Ideal Election Method by Adopting the Interval Scale instead of the Ordinal scale Masaaki Kurosu, Ayako Hashizume, <i>Japan</i></p> | <p>How to Present Calorie Information on The Electronic Menu to Help People Order More Healthily Shiyuan Zhang, Liang Zhou, Ying Zhao, <i>P.R. China</i></p> | <p>Comparing the User Preferences towards Emotional Voice Interaction Applied on Different Devices: An Empirical Study Qinglin Liao, Shanshan Zhang, Mei Wang, Jia Li, Xinrong Wang, Xuemei Deng, <i>P.R. China</i></p> | <p>Affective Haptics and Multimodal Experiments Research Yang Jiao, Yingqing Xu, <i>P.R. China</i></p> |
| | <p>Using blink rate to detect deception: a study to validate an automatic blink detector and a new dataset of videos from liars and truth-tellers Merylin Monaro, Pasquale Capuozzo, Federica Ragucci, Antonio Maffei, Antonietta Curci, Cristina Scarpazza, Alessandro Angrilli, Giuseppe Sartori, <i>Italy</i></p> | <p>A New Analysis Method for User Reviews of Mobile Fitness Apps Peihan Wen, Mo Chen, <i>P.R. China</i></p> | <p>Expectation and Reaction as Intention for Conversation System Qiang Zhang, <i>Japan</i></p> | <p>Research on Service Design of Real-time Translation based on Scenario Analysis Yingying Miao, Shaolun Zhang, Bin Jiang, <i>P.R. China</i></p> |
| | <p>Gaps in Neuroethics in Relation to Brain Computer Interfaces: Systematic Literature Review Negar Hosseini, Australia; Praveen Kumar, <i>India</i></p> | <p>Design Guidelines of Social-Assisted Robots for the Elderly: A Mixed Method Systematic Literature Review Chih-Chang Lin, Hao-Yu Liao, Fang-Wu Tung, <i>Taiwan</i></p> | <p>A Sociable Robotic Platform to make Career Advices for Undergraduates W. K. Malithi Mithsara, <i>Sri Lanka</i>; Udaka A. Manawadu, <i>Japan</i>; P. Ravindra S. De Silva, <i>Sri Lanka</i></p> | <p>Research on Design of Intelligent Creeping Blanket for Infants Based on Sustainable Design Han Gao, <i>P.R. China</i></p> |
| | <p>The Impact of Increasing and Decreasing the Professionalism of News Webpage Aesthetics on the Perception of Bias in News Articles Brendan Spillane, Séamus Lawless, Vincent Wade, <i>Ireland</i></p> | <p>A Bibliometric Analysis and Social Network Analysis on Ergonomics Studies of Emergency Equipment Hao Tan, Yuyue Hao, Aobo Sun, Xiuyuan Guo, Dongdong Guo, <i>P.R. China</i></p> | <p>MUCOR: A Multiparty Conversation Based Robotic Interface to Evaluate Job Applicants H. A. S. D. Senaratna, <i>Sri Lanka</i>; Udaka A. Manawadu, <i>Japan</i>; W. K. N. Hansika, S. W. A. M. D. Samarasinghe, P. Ravindra S. De Silva, <i>Sri Lanka</i></p> | <p>Research on Interactive Usability Evaluation of Mobile Map Navigation Based on User Behavior Pattern Licheng Deng, Zhicheng Ren, <i>P.R. China</i></p> |
| | | | <p>How to Design the Expression Ways of Conversational Agents Based on Affective Experience Chenyang Zhang, Ronggang Zhou, Yaping Zhang, Yanyan Sun, Liming Zou, Min Zhao, <i>P.R. China</i></p> | <p>Research of Interactive Gesture Usability of Navigation Application Based on Intuitive Interaction Zhicheng Ren, Bin Jiang, Licheng Deng, <i>P.R. China</i></p> |

HIMI S125

Relationality Design and Relationality-oriented Systems

Chair(s): Katsunori Shimohara, Japan

Drowsy Bather Detection Using a Triaxial Accelerometer

Hisashi Kojima, Chika Oshima, Koichi Nakayama, Japan

Optimizing Combinations of Teaching Image Data for Detecting Objects in Images

Keisuke Nakamura, Ryodai Hamasaki, Chika Oshima, Koichi Nakayama, Japan

Does Visualization of Health Data Using an Accelerometer be Associated with Promoting Exercise among Elderly People?

Yurika Shiozu, Shoki Muramatsu, Ryo Shioya, Katsuhiko Yonezaki, Mizuki Tanaka, Katsunori Shimohara, Japan

System Design of Community Toward Wellbeing

Katsunori Shimohara, Japan

Home Care System for Supporting Caregivers and Elderly Care Receivers

Madoka Takahara, Kakiha Goshu, Fanwei Huang, Ivan Tanev, Katsunori Shimohara, Japan

How to Emote for Consensus Building in Virtual Communication

Yoshimiki Maekawa, Fumito Uwano, Eiki Kitajima, Keiki Takadama, Japan

A Model of Decision Makings with Predictions

Tetsuya Maeshiro, Yuri Ozawa, Japan; Midori Maeshiro, Brazil

S126

Embodied Interaction and Communication

Chair(s): Tomio Watanabe, Saizo Aoyagi, Japan

Speech Recognition Approach for Motion-Enhanced Display in ARM-COMS System

Teruaki Ito, Takashi Oyama, Tomio Watanabe, Japan

A Long-term Evaluation of Social Robot Impression

Saizo Aoyagi, Satoshi Fukumori, Michiya Yamamoto, Japan

Development of an Interface that Expresses Twinkling Eyes by Superimposing Human Shadows on Pupils

Yoshihiro Sejima, Makiko Nishida, Tomio Watanabe, Japan

Basic study on incidence of micro-error in visual attention-controlled environment

Taisei Ando, Takehiko Yamaguchi, Japan; Tania Giovannetti, United States; Maiko Sakamoto, Japan

A Proposal of Estimating Method for Agreement in Face-to-Face Communication

Masashi Okubo, Yuki Fujimoto, Japan

Experimental Study on Improvement of Sign Language Motion Classification Performance using Pre-trained Network Models

Kaito Kawaguchi, Zhizhong Wang, Tomoki Kuniwa, Japan; Paporn Daraseneeyakul, Phaphimon Veerakiatikit, Thailand; Eiji Ohta, Hiromitsu Nishimura, Hiroshi Tanaka, Japan

S127

Service-oriented Interaction

Chair(s): Hirohiko Mori, Japan

CHESTNUT: Improve Serendipity in Movie Recommendation by an Information Theory-based Collaborative Filtering Approach

Xiangjun Peng, Hongzhi Zhang, Xiaosong Zhou, Shuolei Wang, Xu Sun, Qingfeng Wang, P.R. China

Feedback Control of Middle Finger MP Joint Using Functional Electrical Stimulation Based on the Electrical Stimulus Intensity-Joint Torque Relation Model

Kyosuke Watanabe, Makoto Oka, Hirohiko Mori, Japan

Interaction by Taking a Picture for Smartphone Generation

Keita Kaida, Hirohiko Mori, Makoto Oka, Japan

Proposal for the Tablet-Based Disaster Response Evacuation Drill for Elementary School Children

Makoto Oka, Chiharu Terui, Sakae Yamamoto, Hirohiko Mori, Japan

Appeal of Inconspicuous Body Movements during Spatial Invasion: Frequency Analysis of Movements

Yosuke Kinoue, Yuna Akimori, Japan

S128

Design information Usage - I

Chair(s): Yen-Yu Kang, Taiwan

Proposal and Evaluation of Contribution Value Model for Creation Support System

Yoshiharu Kato, Tomonori Hashiyama, Shun'ichi Tano, Japan

Design Education Regarding Products for Use by Elderly People

Takamitsu Tanaka, Japan; Kun Xue, Yunan Wang, Yongjian Huang, P.R. China; Yen-Yu Kang, Taiwan

Research on Design of Tai-chong and Yong-quan Acupoints Physiotherapy Apparatus Based on Traditional Chinese Medicine Theory

Huabin Wang, Baoping Xu, P.R. China; Yu-Chi Lee, Taiwan

Dynamic Generative Design System

Yinghsiu Huang, Huan-Nian Chen, Taiwan

Early Findings from a Large-scale User Study of CHESTNUT: Validations and Implications

Xiangjun Peng, Zhentao Huang, P.R. China; Chen Yang, United States; Zilin Song, Xu Sun, P.R. China

EPCE S129

Human Factors and Ergonomics in Safety-critical Systems - I
Chair(s): Zhizhong Li, Qin Gao, P.R. China

Cognitive-Based Severe Accident Information System Development in a Human Factors Project
Zheng Zhi, Qiuyu Wang, Haitao Lian, Yufan Wang, Fei Song, Shuhui Zhang, P.R. China

Assessment of Mental Workload Using Physiological Measures with Random Forests in Maritime Teamwork
Yu Zhang, Yi-Jing Zhang, Xue Cui, Zhizhong Li, Yuan Liu, P.R. China

Using IDHEAS to Analyze Incident Reports in Nuclear Power Plant Commissioning: A Case Study
Zijian Yin, Zhaopeng Liu, Dongfang Yang, Zhizhong Li, P.R. China

Integration of Human Factors Principles and Methodologies in the Operating Procedure Development of Nuclear Power Plant
Fei Song, Qiuyu Wang, Shuhui Zhang, Guoqiang Wang, Zheng Zhi, P.R. China

Information Visualization Design of Nuclear Power Control System based on Attention Capture Mechanism
Xiaoli Wu, Panpan Xu, P.R. China

Research on Eye Ellipse of Chinese Drivers
Ding Li, Ding Yi, Shi Huijuan, P.R. China

UAHCI S130

Enabling Universal Access in Real-world Contexts
Chair(s): Simeon Keates, United Kingdom

Applications of Speaker Identification for Universal Access
Saritha Kinkiri, Simeon Keates, United Kingdom

Brain-Computer Interfaces for Communication in Severe Acquired Brain Damage: Challenges and Strategies in Clinical Research and Development
Kirsten Brukamp, Germany

ArSign: Toward a Mobile Based Arabic Sign Language Translator Using LMC
Slim Kammoun, Dawlat Darwish, Hanan Althubeany, Reem Alfull, Saudi Arabia

Service Design for Accessible Tourism
Hans-Peter Hutter, Alireza Darvishy, Stephan Roth, Susanne Gäumann, Heidi Kaspar, Switzerland; Tatjana Thimm, Maksym Gaiduk, Sandra Evans, Germany; Martin Rosenberg, Switzerland

Assistive Technology for the Visually Impaired: Optimizing Frame Rate (Freshness) to Improve the Performance of Real-time Objects Detection Application
Basel Barakat, Aiste Steponenaite, Gurprit S. Lall, United Kingdom; Kamran Arshad, United Arab Emirates; Ian Wassell, Simeon Keates, United Kingdom

VAMR S131

New Virtualities - III
Chair(s): Nitesh Bhatia, United Kingdom

WikiNectVR: A Gesture-based Approach for Interacting in Virtual Reality Based on WikiNect and Gestural Writing
Vincent Kühn, Giuseppe Abrami, Alexander Mehler, Germany

Virtual Scenarios for Pedestrian Research: A Matter of Complexity?
Sonja Schneider, Guojin Li, Germany

The Virtual Dressing Room: A Return Rate Study
Michael Boelstoft Holte, Denmark

Fake People, Real Effects - The Presence of Virtual Onlookers can Impair Performance and Learning
Wouter Durnez, Klaas Bombeke, Jamil Joundi, Aleksandra Zheleva, Emiel Cracco, Fran Copman, Marcel Brass, Jelle Saldien, Lieven De Marez, Belgium

A GPU Accelerated Lennard-Jones System for Immersive Molecular Dynamics Simulations in Virtual Reality
Nitesh Bhatia, Erich A. Müller, Omar K. Matar, United Kingdom

CCD S132

Cultural Differences in Product Management - I
Chair(s): Zhe Chen, P.R. China

Technology Intelligence Practice for NTBFs in Developing Countries
Thi Ha Htun, Myanmar; Weiguo Fang, Yun Zheng, P.R. China

Developing Persona for the Chinese Learning Application for Foreigners in China on Mobile Devices
Zhe Chen, Déborah Dauly, Sara Amaral, Rita Martinho, Sandra Ruppel, Juho Toro, Yashuai Li, Jichang Zhao, P.R. China

A comparison study of trust in m-commerce between Qatari and non-Qatari customers
Eiman AlKhalaf, Pilsung Choe, Qatar

Application of Design Thinking to Optimize Change Management Procedures with a Case Study on Reference Book Stores
Yu Lun Huang, Ding-Hau Huang, Taiwan

Understanding Learning of Chinese Characters for International Students in China
Zhe Chen, Cynthia Kunda, Dennis Oweke, Bayo Komolafe, Buyan-Erdene Badamsereejid, Zhihong Zou, P.R. China

The Trend Analysis Method of Urban Taxi Order based on Driving Track Data
Linchao Yang, Guozhu Jia, Fajie Wei, Wenbin Chang, Shenghan Zhou, P.R. China

Engineering Psychology and Cognitive Ergonomics

Universal Access in Human-Computer Interaction

Virtual, Augmented and Mixed Reality

Cross-Cultural Design

CCD S133

Designing the Future: Innovative Theories, Tools, and Practices - I
Chair(s): Zhiyong Fu, *P.R. China*

Design Smart Living Scenario Through Future Research Tools
Songling Gao, *P.R. China*; Jeongeun Song, *Korea*; Zhiyong Fu, *P.R. China*

Trends on Design Tools under Futurology
Qing Xia, Zhiyong Fu, *P.R. China*

Creativity Initiative: Design Thinking Drives K12 Education from a Future Thinking
Yin Li, Zhiyong Fu, *P.R. China*

Envisioning the future scenario through design fiction generating toolkits
Zhiyong Fu, Lin Zhu, *P.R. China*

Research on Intelligent Design Tools to Stimulate Creative Thinking
Jingwen Xu, *P.R. China*; Chi-Ju Chao, *Taiwan*; Zhiyong Fu, *P.R. China*

S134

Design for Cross-Culture - III
Chair(s): Po-Hsien Lin, Rungtai Lin, *Taiwan*

The impact of Social-Support, Self-efficacy and APP on MBI
Shu-Mei Lin, Liang-Ming Lo, Chia-Yi Liu, *Taiwan*; Chao Liu, *P.R. China*; Wen-Ko Chiou, *Taiwan*

Reliability and Validity Assessment of the Chinese Version of MBI-PPD Self-Efficacy Scale
Hao Chen, Chao Liu, *P.R. China*; Chia-Yi Liu, Liang-Ming Lo, Rungtai Lin, Ding-Hau Huang, Wen-Ko Chiou, *Taiwan*

Subjective Usability and Will of Use on mHealth Application for Postpartum Emotional Disorder - A Case of We'll
Ding-Hau Huang, Shih-Chen Lai, Liang-Ming Lo, Tai-He Hong, Wen-Ko Chiou, *Taiwan*

We'll App and Corporate Mandala Improves Mental Health and Creativity
Wen-Ko Chiou, Mei-Ling Lin, Kuo-Jung Hsieh, Ying-Chieh Liu, Ding-Hau Huang, Chia-Yi Liu, Rungtai Lin, *Taiwan*

Flow and Interflow: The Design Principles of Cooperative Mandala Coloring (CMC)
Yu-Chao Liang, Mei-Ling Lin, Ding-Hau Huang, Wen-Ko Chiou, *Taiwan*

The Reliability and Validity of Multidimensional Scale Perceived Social Support of Chinese Version for MBI-PPD
Szu-Erh Hsu, Wen-Ko Chiou, *Taiwan*; Hao Chen, *P.R. China*; Tai-He Hong, Liang-Ming Lo, Ding-Hau Huang, *Taiwan*

SCSM S135

Information/Communication Design for Social Issues - I
Chair(s): Hidenori Fujino, *Japan*

Verification of the Effect of Presenting a Virtual Front Vehicle on Controlling Speed
Tetsuma Konishi, Takayoshi Kitamura, Tomoko Izumi, Yoshio Nakatani, *Japan*

Impression Detection and Management Using an Embodied Conversational Agent
Chen Wang, *Switzerland*; Beatrice Biancardi, *France*; Maurizio Mancini, *Ireland*; Angelo Cafaro, Catherine Pelachaud, *France*; Thierry Pun, Guillaume Chanel, *Switzerland*

An Experimental Study on Promotion of Pro-Environmental Behavior Focusing on "Vanity" for Interactive Agent
Mizuki Yamawaki, Kimi Ueda, Yoshiki Sakamoto, Hirotake Ishii, Hiroshi Shimoda, Kyoko Ito, Takuya Fujioka, Qinghua Sun, Yasuhiro Asa, Takashi Numata, *Japan*

Utilization of Vanity to Promote Energy Saving Activities
Kyoko Ito, Yasutaka Kishi, Shogo Nishida, *Japan*

Proposal to Enhance University Students' Motivation to Switch to a Morning-oriented Lifestyle with a Community Approach
Hidenori Fujino, Taiga Okunari, Yuko Kato, Honoka Kobashi, Tomoya Tarutani, Nao Miyano, Soyoka Yagi, *Japan*

Proposal of the Onion Watch Application for Enjoying a Stroll
Takayoshi Kitamura, *Japan*; Yu Gang, *P.R. China*; Tomoko Izumi, Yoshio Nakatani, *Japan*

AC S136

Novel Approaches in AC
Chair(s): Ana Rita Teixeira, *Portugal*

A Study of Colour using Mindwave EEG Sensor
Ana Rita Teixeira, Anabela Gomes, *Portugal*

A Reliable Neurophysiological Assessment of Stress -- Basic Foundations for a Portable BCI Solution
Thomas Zoëga Ramsøy, Alexander Lopera, Philip Michaelsen, Mike Storm, Ulrich Kirk, *Denmark*

Assessing Intravenous Catheterization Simulation Training of Nursing Students Using Functional Near-Infrared Spectroscopy (fNIRs)
Mehmet Emin Aksoy, *Turkey*; Kurtulus Izzetoglu, *United States*; Atahan Agrali, Esra Ugur, Vildan Kocatepe, Dilek Kitapcioglu, Engin Baysoy, Ukke Karabacak, *Turkey*

Methodology for Detection of ERD/ERS EEG Patterns Produced by Cut Events in Film Fragments
Javier Sanz Aznar, Carlos Aguilar-Paredes, Lydia Sánchez Gómez, *Spain*; Luis Emilio Bruni, Andreas Wulff-Abramsson, *Denmark*

Effect of Robotic Surgery Simulators in Training Assessed by Functional Near-Infrared Spectroscopy (fNIRs)
Mehmet Emin Aksoy, *Turkey*; Kurtulus Izzetoglu, *United States*; Atahan Agrali, Dilek Kitapcioglu, Mete Gungor, Aysun Simsek, *Turkey*

A Multi-Stage Theory of Neurofeedback Learning
Eddy J. Davelaar, *United Kingdom*

Social Computing and Social Media

Augmented Cognition

TUESDAY 10:00 - 12:00

DHM S137

Robots, Agents, and Bots for Super Smart Society - I
 Chair(s): Masahide Nakamura, Japan; André Calero Valdez, Laura Burbach, Germany

User Behavior and Awareness of Filter Bubbles in Social Media
 Nils Plettenberg, Johannes Nakayama, Poornima Belavadi, Patrick Halbach, Laura Burbach, André Calero Valdez, Martina Ziefle, Germany

Performance Evaluation of Text-Oriented Artificial Chat Operation System (TACOS)
 Seiki Tokunaga, Kazuhiro Tamura, Mihoko Otake-Matsuura, Japan

Extracting and Evaluating Personal Interests with Dialogue Agent
 Yuki Tokuda, Shota Nakatani, Sachio Saiki, Masahide Nakamura, Kiyoshi Yasuda, Japan

Investigating Key Factors for Social Network Evolution and Opinion Dynamics in an Agent-Based Simulation
 Patrick Halbach, Laura Burbach, Poornima Belavadi, Johannes Nakayama, Nils Plettenberg, Martina Ziefle, André Calero Valdez, Germany

Netlogo vs. Julia: Evaluating Different Options for the Simulation of Opinion Dynamics
 Laura Burbach, Poornima Belavadi, Patrick Halbach, Lilian Kojan, Nils Plettenberg, Johannes Nakayama, Martina Ziefle, André Calero Valdez, Germany

Identification of Target Speech Utterances from Real Public Conversation
 Naoto Kosaka, Yumi Wakita, Japan

DUXU S138

Facilitating Individual Creativity, Understanding Team Design Process, and Developing Advanced Tools and Methods - I
 Chair(s): Wei Liu, P.R. China

Research on the Influence of Emotional Valence and Road Environment Monotony on Driving Behavior
 Siyao Lu, Xin Xin, P.R. China; Nan Liu, Hong Kong; Yiji Wang, Yanrui Qu, P.R. China

Automotive HMI Guidelines for China Based on Culture Dimensions Interpretation
 Zaiyan Gong, Jun Ma, Qianwen Zhang, Yining Ding, Lu Liu, P.R. China

User Research on Digital Consumption Behavior and Design Guidelines in Connecting Vehicle Context
 Di Zhu, Wei Liu, Yanrui Qu, P.R. China

How motion graphics affect emotional quality: In the context of an in-vehicle information system
 Meen Jong Kim, Gui Young Kim, Jae Moon Sim, Yong Gu Ji, Korea

Interaction Design of Smart Fitness Reminder in Car Based on Internet of Vehicle
 Yan-cong Zhu, Wei Liu, Yu-Zu Shen, P.R. China

S139

User Experience and Usability Driven Design: Emerging Theory and Practice - I
 Chair(s): Zhen Liu, P.R. China

Exploring Experience Activity Potential for Art Therapy to High School Students in International School, Guangzhou, China
 Zhen Liu, Meihan Liu, P.R. China

Pedagogical Discussion on the Application of Role Immersion in Interior Design Teaching
 Chen Wang, Wenjing Yin, Jue Chen, P.R. China

A Study on the Space Usability Driven Design of the Ancestral Temple of Xihu Village from the Perspective of Spatial Syntax
 Xinghai Luo, Mingjie Liang, P.R. China

Real-Time Interactive Online 3D Graphical User Interface (GUI) Technical Implementation and Usability Test for Architectural Technical Teaching
 Zhen Liu, Yifang Wang, P.R. China

S140

Service Design for Culture and Education
 Chair(s): DanDan Yu, P.R. China

Design Practice in Online Courses: Application of Service Design to MOOC
 ZiYang Li, Xiangnuo Li, Limin Wang, XianDong Cheng, Hao He, Bin Liang, P.R. China

Rich Media 2.0: A Methodology to Enhance Media Information Construction for Creating a Better User Experience
 Jie Hao, Chengxing Pan, Enxin Zhang, P.R. China

Teaching Discussion on Information Visualization Design
 XianDong Cheng, Hao He, Yan Ren, Shengqi Ba, P.R. China

Service Design in the Preservation of Intangible Cultural Heritage: A Case Study in the Legend of the Kitchen God
 DanDan Yu, Limin Wang, XiaoWei Feng, ShuHao Wang, Bin Liang, P.R. China

Changes in Design Education Promoted by Collaborative Organization: Distribution and Fragmentation
 WenJing Li, DanDan Yu, YiNan Zhang, FuMei Zhang, Limin Wang, P.R. China

Service Design and Upgrade of Domestic-Ceramic Consumption Idea -- Service Design for Customized Domestic-Ceramic
 Liu Hong, Limin Wang, Wang Song, P.R. China

DUXU S141

Designing and Evaluating User Experience in Contemporary Interactive Systems - II

Chair(s): Takashi Ohta, *Japan*

SyncMeet: Virtual Work Environment for Collaborative Manga Creation

Maria Consuelo Tenorio Morales, Keiko Yamamoto, Yoshihiro Tsujino, *Japan*

Design for the Decentralized World: Democratization of Blockchain-Based Software Design

Vladislav Gladyshev, Qiong Wu, *P.R. China*

Dive2Views: A Mobile Camera Application that Dives into Another Device's Camera View

Takashi Ohta, Kansei Fujikawa, *Japan*

Spectator Experience Design for AR Sport Events from a Service Design Perspective - Using HADO as an Example

Pei-Ling Shih, Hsien-Hui Tang, Shu-Yi Chen, *Taiwan*

A Method for Increasing User Engagement with Voice Assistant System

Daehee Park, Heesung Park, Scott Song, *Korea*

Distributed, Ambient and Pervasive Interactions

DAPI S142

HCI in the 4th Industrial Revolution

Chair(s): Guochao (Alex) Peng, *P.R. China*; Iliia Adami, *Greece*

Factors Influencing the Acceptance and Usage of Smart City Services: A Systematic Review and Meta-analysis

Bingqian Zhang, Guochao (Alex) Peng, Xinting Liang, Qi Gao, Fei Xing, *P.R. China*

Driving Innovation with the Application of Industrial AI in the R&D Domain

Fei Xing, Guochao (Alex) Peng, Bingqian Zhang, Simin Zuo, Jiangfeng Tang, *P.R. China*; Shuyang Li, *United Kingdom*

Ubiquitous Display: Research on interaction Design Based on Flexible Display

Xinwei Guo, *P.R. China*

Investigating Users Attitudes and Perceptions towards the Usage of Smart City Apps

Sirong Lin, Xinting Liang, Bingqian Zhang, Fei Xing, Guochao (Alex) Peng, *P.R. China*

Non-Invasive Sleep Assistance System Design based on IoT

Dong Wang, Shiyao Qin, Zhenyu Gu, *P.R. China*

HCI in Business, Government and Organizations

HCIBGO S143

Intelligent Services and AI Applications

Chair(s): Yu-Chen Yang, *Taiwan*

Model-Based Systems Engineering for Sharing Economy Service Systems Design Using Structure-Behavior Coalescence Process Algebra

Yu-Chen Yang, William S. Chao, *Taiwan*

Features of Smart City Services in the Local Government Context: A Case Study of San Francisco 311 System

Wei-Ning Wu, *Taiwan*

The Challenges to Leverage User Generated Contents in B2B Marketing

Ajit Ashok Aras, *Singapore*; Xin Xu, *Hong Kong*

Massive Semantic Video Annotation in High-end Customer Service - Example in Airline Service Value Assessment -

Ken Fukuda, *Japan*; Julio Vizcarra, *Mexico*; Satoshi Nishimura, *Japan*

How to Attract More Viewers in Live Streams? A Functional Evaluation of Streamers' Strategies for Attraction of Viewers

Xiaoyun Jia, Ruili Wang, James H. Liu, *New Zealand*; Tian Xie, *P.R. China*

Forecasting the Subway Volume using Local Linear Kernel Regression

Yu-Chen Yang, *Taiwan*; Chao Ding, Yong Jin, *Hong Kong*

HCI-CPT S144

continues...

New Approaches Towards Usable Security

Chair(s): Kokoro Kobayashi, *Japan*

Evaluation of Secure Pad Resilient to Shoulder Hacking

Kokoro Kobayashi, Tsuyoshi Oguni, Masaki Nakagawa, *Japan*

Private Cloud Storage: Client-side Encryption and Usable Secure Utility Functions

Akihiro Tachikawa, Akira Kanaoka, *Japan*

Time-lapse Detection for Evolution of Trustworthy Network User Operation Behavior using Bayesian Network

Yuhan Wang, Qian Yi, Shuping Yi, Jiajia Li, Shiquan Xiong, *P.R. China*

An Improved Method of Time-Frequency Joint Analysis of Mouse Behavior for Website User Trustworthy Authentication

Wei Li, Shuping Yi, Qian Yi, Jiajia Li, *P.R. China*; Shiquan Xiong, *Pakistan*

HCI for Cybersecurity, Privacy and Trust

TUESDAY 10:00 - 12:00

HCI-CPT S145

Behavior Analysis and Cybersecurity Attitudes

Chair(s): To be announced

Whose Risk is it Anyway: How Do Risk Perception and Organisational Commitment Affect Employee Information Security Awareness?

Andrew Reeves, Kathryn Parsons, Dragana Calic, *Australia*

Sleeping with the Enemy: Does Depletion Cause Fatigue with Cybersecurity?

Andrew Reeves, Dragana Calic, *Australia*; Paul Delfabbro, *Austria*

The Impact of Gamification Factor in the Acceptance of Cybersecurity Awareness Augmented Reality Game (CyBAR)

Hamed Alqahtani, *Saudi Arabia*; Manolya Kavakli-Thorne, Majed Alrowaily, *Australia*

Does Decision-Making Style Predict Individuals' Cybersecurity Avoidance Behaviour?

Hamed Alqahtani, *Saudi Arabia*; Manolya Kavakli-Thorne, *Australia*

Effect of Privacy Prime and Fear Stimulus on Disclosure Behavior

Kovila P.L. Coopamootoo, Jacob Carey, *United Kingdom*

MobiTAS S146

HCI in Mobility, Transport and Automotive Systems

Designing In-Vehicle Travel Experiences

Chair(s): To be announced

Weaving Social Networks from Smart Card Data: An On-Journey-Accompanying Approach

Wei Geng, Dingzhe Zhang, *P.R. China*

User Preference for Vehicle Warning Sounds to Develop AUI Guideline focusing on Differences between Sex and among Age Groups

Jun Young An, Young Jin Kim, Hoon Sik Yoo, *Korea*

Human Factor Considerations on Timing of Driver Taking Over in Automated Driving Systems: A Literature Review

Hua Qin, Ran Zhang, Tingru Zhang, *P.R. China*

Complexity in In-vehicle Touchscreen Interaction: A Literature Review and Conceptual Framework

Young Woo Kim, Da Yeong Kim, Yong Gu Ji, *Korea*

The Effect of Multiple Visual Variables on Size Perception in Geographic Information Visualization

Yun Lin, Chengqi Xue, Yanfei Zhu, Mu Tong, *P.R. China*

The Situation Awareness and Usability Research of Different HUD HMI Design in Driving while Using Adaptive Cruise Control

Jianmin Wang, Wenjuan Wang, *P.R. China*; Preben Hansen, *Sweden*; Yang Li, Fang You, *P.R. China*

S147

Perspectives on Highly Automated Vehicles

Chair(s): Shota Matsubayashi, *Japan*

Influence of Position and Interface for Central Control Screen on Driving Performance of Electric Vehicle

Ran Zhang, Hua Qin, JiTao Li, HaoBo Chen, *P.R. China*

Development of a Driving Model that Understands Other Drivers' Characteristics

Shota Matsubayashi, Hitoshi Terai, Kazuhisa Miwa, *Japan*

Optimization of the Method of Maintaining Arousal Level by Inducing Intrinsic Motivation: Using Presentation of Information in Autonomous Driving

Yuki Mekata, Shuheji Takeuchi, Tsuneyuki Yamamoto, Naoki Kamiya, Takashi Suzuki, Miwa Nakanishi, *Japan*

Influencing Driver's Behavior on an Expressway with Intrinsic Motivation

Toshiki Takeuchi, Ryosuke Mita, Naoya Okada, Tomohiro Tanikawa, Takuji Narumi, Michitaka Hirose, *Japan*

Voice User-Interface (VUI) in Automobiles: Exploring Design Opportunities for using VUI through the Observational Study

Fangang Meng, Peiyao Cheng, Yiran Wang, *P.R. China*

Research on Innovative Vehicle Human-Machine Interaction System and Interface Level Design

Jia-xin Liu, Xue Zhao, Ying Cao, *P.R. China*

C&C S149

Culture and Computing

Designing Ethical Life

Chair(s): Pertti Saariluoma, Jaana Leikas, *Finland*

Good Life Ecosystems – Ethics and Responsibility in the Silver Market

Jaana Leikas, Anton Sigfrids, Jari Stenvall, Mika Nieminen, *Finland*

How AI Systems Challenge the Conditions of Moral Agency?

Jaana Hallamaa, Taina Kalliokoski, *Finland*

How to Utilize the HuValue Tool for Daily Life Product Design

Shadi Kheirandish, Matthias Rauterberg, *Netherlands*

Cognitive Mimetics for AI Ethics: Tacit Knowledge, Action Ontologies and Problem Restructuring

Antero Karvonen, *Finland*

Hume's Guillotine Resolved

Pertti Saariluoma, *Finland*



C&C S150

HCI in Cultural and Creative Industries - I

Chair(s): Emmanouil Zidianakis, Greece

Influences on Livestreaming Usage in China: Contents, Motivations, and Engagements

Yisi Yang, Japan

Research on the Design and Method of Innovation System of Cultural and Creative Industries Based on Social Development

Wei Ding, Qianyu Zhang, Junnan Ye, Dadi An, Jie Zhou, P.R. China

Research on Consumers' Decision-making Factors of Cultural and Creative Products of the Palace Museum under the Background of New Media

Ziwei Chen, Jiaqian Xu, Bing Xiao, P.R. China

NOTES

Large empty area with horizontal lines for taking notes.

TUESDAY 10:00 - 12:00

Human-Computer Interaction

HCI S151

Usability and Quality
Chair(s): Shin'ichi Fukuzumi, *Japan*

Development of an Assessment Model for the Human Centered Design Processes specified in ISO 9241-220
Rüdiger Heimgärtner, *Germany*

Usability of Software-Intensive Systems from Developers' Point of View – Current Status and Future Perspectives of International Standardization of Usability Evaluation
Toshihiro Komiyama, Shin'ichi Fukuzumi, Motoei Azuma, Hironori Washizaki, Naohiko Tsuda, *Japan*

Proposal of Quality in Use in Software quality
Shin'ichi Fukuzumi, Nowky Hirasawa, Noriko Wada, Toshihiro Komiyama, Motoei Azuma, *Japan*

Conception and Development of a Support System for Assembly Technology
Bernhard Rupprecht, Emanuel Trunzer, Jozsef Kovac, Birgit Vogel-Heuser, *Germany*

Human Factors Engineering Development Process in Civil Aircraft Flight Deck Design and Integration
Fei Li, Xianchao Ma, Yuan Wang, Yao Zhu, Jing Zhang, Pu Hong, *P.R. China*

S152

Research on AI Art and Practice - IV
Chair(s): Yi Ji, *P.R. China*

Product Design Model for E-Commerce Cantonese Porcelain based on User Perceptual Image in China
Shengyang Zhong, Peng Tan, Tieming Fu, Yi Ji, *P.R. China*

Observations and Categorisations of Art Practices associated with AI
Timothy Gruchy, *P.R. China*

Information Visualization-Based Study on Interactive Design of Elderly Health Management Application
Yuzhao Liu, *P.R. China*

Extraction and Reuse of Pattern Configuration for Personalized Customization of Cantonese Porcelain Based on Artificial Intelligence
Yi Ji, Xiaohong Sun, Xingyang Dai, *P.R. China*; Sean Clark, *United Kingdom*; Yutong Liu, Tieming Fu, *P.R. China*

Research on Information Interface Interaction Design Based on Unconscious Cognition
Wenwen Yang, *P.R. China*

HIMI S153

VR2.0 and Novel Interaction Technologies
Chair(s): Michitaka Hirose, *Japan*

Galvanic Taste Stimulation Method for Virtual Reality and Augmented Reality
Kazuma Aoyama, *Japan*

Developing an AR Remote Collaboration System with Semantic Virtual Labels and a 3D pointer
Tzu-Yang Wang, Yuji Sato, Mai Otsuki, Hideaki Kuzuoka, Yusuke Suzuki, *Japan*

Virtual Reality Applications using Pseudo-Attraction Force by Asymmetric Oscillation
Tomohiro Amemiya, *Japan*

Transmission of Rubbing Sensation with Wearable Stick-Slip Display and Force Sensor
Honoka Haramo, Vibol Yem, Yasushi Ikei, *Japan*

Health Education VR
Sachiyo Ueda, Satoshi Fujisawa, Yasushi Ikei, Michiteru Kitazaki, *Japan*

Virtual turning walking by passive arm swing
Gaku Sueta, Naoyuki Saka, Vibol Yem, Tomohiro Amemiya, Michiteru Kitazaki, Makoto Sato, Yasushi Ikei, *Japan*

S154

Design information Usage - II
Chair(s): Yen-Yu Kang, *Taiwan*; Jian Wang, *P.R. China*

Gender Difference in Preference for Apple Watch Dial Interface
Jian Wang, *P.R. China*; Yen Hsu, *Taiwan*

The Influence of Human-Computer Sagittal Interaction in Peripersonal Space on Affective Valence Appraisals
JXinyan Wang, *P.R. China*; Yen Hsu, *Taiwan*

Will the Process of Creation Impact the Viewer's Appraisal of the Creativeness of Artificial Intelligence Artworks?
Rui Xu, *P.R. China*; Yen Hsu, *Taiwan*

A Research and Development of User Centered Zongzi Leaves Cleaning Machine Design
Yann-Long Lee, Feng-Che Tsai, Tai-Shen Huang, Chuan-Po Wang, Wei-Lun Lo, *Taiwan*

A Study of Size Effects of Overview Interfaces on User Performance in Virtual Environments
Meng-Xi Chen, *P.R. China*; Chien-Hsiung Chen, *Taiwan*

Analysis of Human Factor in Air Traffic Control Unsafe Events Based on Improved DECIDE Model
Jun-jie Liu, Rui-rui Zhang, Yin-lan Du, Qian-yu Bao, *P.R. China*

TUESDAY 12:30 - 14:30

| HIMI S155 | S156 |
|---|---|
| <p>User-oriented Technologies and Services Chair(s): Hiroyuki Miki, <i>Japan</i></p> | <p>Human-centered Information Systems, Services, and Applications Chair(s): Ryosuke Saga, <i>Japan</i></p> |
| <p>Analysis of Mental Model of Users with Network Malfunction Haruka Yoshida, Kenta Tsukatsune, Sumaru Niida, <i>Japan</i></p> | <p>Visual Compiler: Towards Translating Digital UI Design Draft to Front-end Code Automatically Jiemao Pan, Xiang Chen, Ting Chen, Bin Tang, Junbiao Yang, Yuhong Chen, Yixiong Lin, Chao Xiao, Jian Meng, <i>P.R. China</i></p> |
| <p>Augmented Reality Shopping System through Image Search and Virtual Shop Generation Zhinan Li, Ruichen Ma, Kohei Obuchi, Boyang Liu, Kelvin Cheng, Soh Masuko, Jiro Tanaka, <i>Japan</i></p> | <p>The Integration of Web-based and Mobile-based Participatory Sensing Interfaces Apply to the Identification and Assessment of Contextual Features in the City Yang Ting Shen, Pei Wen Lu, Feng Cheng Lin, <i>Taiwan</i></p> |
| <p>Augmented Reality Fashion Show using Personalized 3D Human Models Shihui Xu, <i>Japan</i>; Jingyi Yuan, <i>P.R. China</i>; Xitong Sun, Yuhan Liu, Yuzhao Liu, Kelvin Cheng, Soh Masuko, Jiro Tanaka, <i>Japan</i></p> | <p>A Comparison of Cartoon Portrait Generators Based on Generative Adversarial Networks Yusuke Nakashima, Yuichi Bannai, <i>Japan</i></p> |
| <p>Data Paradigm Shift in Cross-Media IoT System Shih-Ta Liu, Su-Chu Hsu, Yu-Hsiung Huang, <i>Taiwan</i></p> | <p>Optimal Route Search Based on Multi-Objective Genetic Algorithm for Maritime Navigation Vessels Ryosuke Saga, Zhipeng Liang, Naoyuki Hara, Yasunori Nihei, <i>Japan</i></p> |
| <p>The adoption of mobile technologies in healthcare: the perceptions of healthcare professionals regarding knowledge management practices in developing countries Avijit Chowdhury, Abdul Hafeez-Baig, Raj Gururajan, <i>Australia</i>; Mirza Akmal Sharif, <i>Pakistan</i></p> | |
| <p>Waiting Time Analysis at University Hospitals based on Visitor Psychology Shigeyoshi Iizuka, Shozo Nishii, Eriko Tanimoto, Hiro Nakazawa, Asuka Kodaka, Takanori Takebe, <i>Japan</i></p> | |

Engineering Psychology and Cognitive Ergonomics

| EPCE S157 |
|---|
| <p>Cognition and Design - I Chair(s): Qianxiang Zhou, <i>P.R. China</i></p> |
| <p>Rationality, Cognitive Bias, and Artificial Intelligence: A Structural Perspective on Quantum Cognitive Science Yoshihiro Maruyama, <i>Japan</i></p> |
| <p>The Effect of Time Pressure and Task Difficulty on Human Search Qianxiang Zhou, Chao Yin, Zhongqi Liu, <i>P.R. China</i></p> |
| <p>Research on Interface Complexity and Operator Fatigue in Visual Search Task Keran Wang, Wen-jun Hou, <i>P.R. China</i></p> |
| <p>A Study on Search Performance and Threshold Range of Icons Aiguo Lu, Chengqi Xue, <i>P.R. China</i></p> |
| <p>Handling Design Tasks: Effects of Music on Mood and Task Performance Ying Fang, Ruiqian An, Junxia Wang, Zhanxun Dong, <i>P.R. China</i></p> |
| <p>Examining the relationship between songs and psychological characteristics Miran Pyun, Donghun Kim, Chaeyun Lim, Eunbyul Lee, Jihye Kwon, Sangyup Lee, <i>Korea</i></p> |

Universal Access in Human-Computer Interaction

| UAHCI S158 | continues... |
|--|--------------|
| <p>Non Visual Interaction Chair(s): Doris Hooi-Ten Wong, <i>Malaysia</i></p> | |
| <p>Usability of User-centric Mobile application design from Visually Impaired People's Perspective Hammad Hassan Qureshi, Doris Hooi-Ten Wong, <i>Malaysia</i></p> | |
| <p>Walking Support for Visually Impaired Using AR/MR and Virtual Braille Block Katsuya Hommaru, Jiro Tanaka, <i>Japan</i></p> | |
| <p>Travel Service Design for the Visually Impaired: User Experience from Combining Real Human Assistants and AI Devices in An Appropriate Proportion Linghong Li, <i>P.R. China</i></p> | |
| <p>Effects of Cognitive Consistency in Microtask Design with only Auditory Information Ying Zhong, Masaki Matsubara, Makoto Kobayashi, Atsuyuki Morishima, <i>Japan</i></p> | |
| <p>Gen_braille: Development of a Braille Pattern Printing Method for Parametric 3D CAD Modelling Kazunori Minatani, <i>Japan</i></p> | |
| <p>iVision: An Assistive System for the Blind based on Augmented Reality and Machine Learning Jinyang Shen, Zhanxun Dong, Difu Qin, Jingyu Lin, Yahong Li, <i>P.R. China</i></p> | |

UAHCI S159

Technological Advances Towards Universal Access

Chair(s): Abeer Al-nafjan, Saudi Arabia

Co-Design of Augmented Reality Storybooks for Children with Autism Spectrum Disorder

Bushra Alkadhi, Nouf Alduaifi, Layan Aljowair, Ghadah Alnafisi, Leena Alotaibi, Raghad Alhumood, Saudi Arabia

Empowering Assistive Technology Communities to Make Strategic Use of Intellectual Property: Three Case Studies from the CoCreate Program

Sarah Almoaiqel, Shiroq Al-Megren, Saudi Arabia; Mark Oleksak, United States; Ghadeer Alfajhan, Areej Al-Wabil, Saudi Arabia

Designing SignSpeak, an Arabic Sign Language Recognition System

Abeer Al-nafjan, Layan Al-Abdullatef, Mayar Al-Ghamdi, Nada Al-Khalaf, Wejdan Al-Zahrani, Saudi Arabia

A Low-Cost Gaze-Based Arabic Augmentative and Alternative Communication System for People with Severe Speech and Motor Impairments

Rabia Jafri, Ameera Almasoud, Reema Alshammari, Shahad Alosaimi, Raghad Alhamad, Amzan Aldowighri, Saudi Arabia

Co-Design of Color Identification Applications Using Scenario-based Personas for People with Impaired Color Vision

Mawaddah AlSabban, Arwa Karim, Saudi Arabia; Ginny Sun, United States; Jood Hashem, Osama AlSayed, Saudi Arabia

VAMR S160

Virtual, Augmented and Mixed Reality

Gesture and Expression-based Interaction in VAMR

Chair(s): To be announced

An Empirical Evaluation on Arm Fatigue in Free Hand Interaction and Guidelines for Designing Natural User Interfaces in VR

Xiaolong Lou, Xiangdong Li, P.R. China; Preben Hansen, Sweden; Zhipeng Feng, P.R. China

Hand Gesture Recognition for Smartphone-Based Augmented Reality Applications

Eric Cesar E. Vidal, Jr., Ma. Mercedes T. Rodrigo, Philippines

User-Centric AR Sceneized Gesture Interaction Design

Xin-Li Wei, Rui Xi, Wen-jun Hou, P.R. China

An Augmented Reality Approach to 3D Solid Modeling and Demonstration

Shu Han, Shuxia Wang, Peng Wang, P.R. China

How Interaction Paradigms Affect User Experience and Perceived Interactivity in Virtual Reality Environment

Duo Wang, Xiwei Wang, Qingxiao Zheng, Bingxin Tao, Guomeng Zheng, P.R. China

S161

VAMR in Simulation, Learning and Training

Chair(s): Manos Zidianakis, Greece

AR Assisted Process Guidance System for Ship Block Fabrication

Jiahao Ding, Yu Zhu, Mingyu Luo, Minghua Zhu, Xiumin Fan, Zelin Zhou, P.R. China

Development of an Augmented Reality system achieving in CNC Machine Operation Simulations in Furniture Trial Teaching Course

Yu Ting Lin, I-Jui Lee, Taiwan

Study on Learning Effectiveness of Virtual Reality Technology in Retail Store Design Course

Chu-Jun Yang, P.R. China; Chih-Fu Wu, Taiwan

Augmented Reality and Microbit for Project-based Learning

Poonsiri Jailungka, Siam Charoenseang, Chaowwalit Thammatinno, Thailand

Quick Projection Mapping on Moving Object in the Manual Assembly Guidance

Weiping He, Bokai Zheng, Shuxia Wang, Shouxia Wang, P.R. China

CCD S162

Cross-Cultural Design

Design for Cross-Culture - IV

Chair(s): Wen-Ko Chiou, Rungtai Lin, Taiwan

Research on Development of Guangdong Porcelain Design Driven by Export Trade in the 16th - 19th Century

Xiao Song, P.R. China

Innovative Application of the Research on Material Properties of Chinese Lacquer in the Design of Pile Lacquer Implement

Yonghui Lin, P.R. China; Hailin Liu, Taiwan

Design of Intelligent Public Restrooms in Tourist Cities

Qing Yang, Dan Li, Ya Tan, P.R. China

Aesthetic Contemplation of the Tang Dynasty Dunhuang Frescoes Elements on Contemporary Costume Design

Hong Zhang, P.R. China

Research into Development of Auspicious Cultural and Creative Products about Bird-and-flower Paintings as Decorations for Spring Festival in Guangzhou

Li Ou-Yang, Jie Ling, P.R. China

Infiltration of sustainable environmental space service design in a cross-cultural context

Xing Ji, LiuYing Huang, ChengYao Cai, Jie Tang, P.R. China

| CCD | S163 |
|-----|---|
| | <p>Cultural Differences in Product Management - II Chair(s): Zhe Chen, <i>P.R. China</i></p> |
| | <p>Research on the Path Integration Behavior of Firefighters in the Dark Hua Qin, Xiao-Tong Gao, Wei Zhao, Yi-Jing Zhang, <i>P.R. China</i></p> |
| | <p>The Effect of Long Time Simulated Voyage on Sailors' Athletic Ability Zhen Liao, Chi Zhang, Yuqian Zhang, Zhanshuo Zhang, Ye Deng, Yingwei Zhou, Yang Yu, Jin Liang, Zhiqiang Tian, Xin Wang, Hao Meng, <i>P.R. China</i></p> |
| | <p>The effect of a long simulated voyage on sailors' alertness Jin Liang, Xin Wang, Liang Zhang, Ye Deng, Yingwei Zhou, Yuqian Zhang, Yang Yu, Zhen Liao, Zhiqiang Tian, Zhanshuo Zhang, Yongjiang Fu, <i>P.R. China</i></p> |
| | <p>Risk-taking propensity during a prolonged voyage at sea: A simulator experiment study Xin Wang, Liang Zhang, Tuoyang Zhou, Zhen Liao, Zhanshuo Zhang, Ning Li, Qiang Yao, Jin Liang, Yang Yu, Zhiqiang Tian, Tianqi Chen, <i>P.R. China</i></p> |
| | <p>The influence of a long voyage on mental status: an experimental study Yang Yu, Zhanshuo Zhang, Jin Liang, Zhiqiang Tian, Chi Zhang, Qiang Yao, Ning Li, Tuoyang Zhou, Xin Wang, Zhen Liao, Baochao Zong, <i>P.R. China</i></p> |

| S164 |
|--|
| <p>Designing the Future: Innovative Theories, Tools, and Practices - II Chair(s): Zhiyong Fu, <i>P.R. China</i></p> |
| <p>Study on Restoration-Oriented Digital Visualization for Architectural Trim-work of Guanlan Hall in Yuanming Yuan Huan Wang, Jue Zhong, Wen Li, <i>P.R. China</i>; Cameron Clarke, <i>Denmark</i></p> |
| <p>Cross-cultural Design of Facial Expressions of Robots Ichi Kanaya, Meina Tawaki, Keiko Yamamoto, <i>Japan</i></p> |
| <p>Focus on Automotive User Interfaces Research: A Bibliometric Analysis and Social Network Analysis during 1994–2019 Chen Lu, Hao Tan, <i>P.R. China</i></p> |
| <p>How Drivers Categorize ADAS Functions --Insights from a Card Sorting Study Liping Li, <i>P.R. China</i>; Hsinwen Chang, <i>Taiwan</i>; Weihai Sun, Jin Guo, Jianchao Gao, <i>P.R. China</i></p> |
| <p>Secure Agents for Supporting Best-balanced Multilingual Communication Mondheera Pituxcoosuvann, Takao Nakaguchi, Donghui Lin, Toru Ishida, <i>Japan</i></p> |

| SCSM | S165 |
|-----------------------------------|--|
| Social Computing and Social Media | <p>Impact of Multicultural Environments on Social Computing and Social Media Chair(s): Simona Vasilache, <i>Japan</i></p> |
| | <p>Does Delivery Method Matter for Multicultural Undergraduate Students? A Case Study of an Australian University in the United Arab Emirates Ajrina Hysaj, Doaa Hamam, <i>United Arab Emirates</i></p> |
| | <p>Being Together Apart: Does Communication via Social Media Help or Harm Romantic Relationships? Mark Turner, Emma Prince, <i>United Kingdom</i></p> |
| | <p>The Tributes and Perils of Social Media Use Practices in Ethiopian Socio-Political Landscape Elefeliou Getachew Belay, Getachew Hailemariam Mengesha, Moges Ayele Asale, <i>Ethiopia</i></p> |
| | <p>Cultural Factors as Powerful Moderators of Romanian Students' Adoption of Mobile Banking in Everyday Life Valentin Mihai Leoveanu, Mihaela Cornelia Sandu, Adela Coman, <i>Romania</i></p> |

| S166 |
|---|
| <p>Information/Communication Design for Social Issues - II Chair(s): Hidenori Fujino, <i>Japan</i></p> |
| <p>Development of a Vision Training System Using an Eye Tracker by Analyzing Users' Eye Movements Ryosuke Kita, Michiya Yamamoto, Katsuya Kitade, <i>Japan</i></p> |
| <p>A Study on Bilingual Superimposed Display Method on Digital Signage Takumi Uotani, Yoshiki Sakamoto, Yuki Takashima, Takashi Kurushima, Kimi Ueda, Hirotake Ishii, Hiroshi Shimoda, Rika Mochizuki, Masahiro Watanabe, <i>Japan</i></p> |
| <p>The Power of Social Media Marketing on Young Consumers' Travel-Related Co-Creation Behavior Farzana Sharmin, Mohammad Tipu Sultan, <i>P.R. China</i></p> |
| <p>An Exploratory Investigation of Facebook Live Marketing by Women Entrepreneurs in Bangladesh Mohammad Tipu Sultan, Farzana Sharmin, <i>P.R. China</i></p> |

TUESDAY 12:30 - 14:30



AC S167

Augmented Cognition through Immersive User Experiences - I
Chair(s): Ayoung Suh, Christian Wagner, *Hong Kong*

Gathering People's Happy Moments from Collective Human Eyes and Ears for a Wellbeing and Mindful Society
Risa Kimura, Tatsuo Nakajima, *Japan*

Exploring the Effects of Immersive Virtual Reality on Learning Outcomes: A Two-Path Model
Yongqian Lin, *P.R. China*; Guan Wang, Ayoung Suh, *Hong Kong*

How Gamification Increases Learning Performance? Investigating the Role of Task Modularity
Ayoung Suh, Mengjun Li, *Hong Kong*

Motivational and Psychosocial Factors of Female Cyber Cadet Officers
Ricardo G. Lugo, Nina Rones, Kirsi Helkala, *Norway*

Visualizing Emotion and Absorption through a Low Resolution LED Array: From Electroencephalography to Internet of Things
Xiaobo Ke, Christian Wagner, *Hong Kong*

DHM S168

Robots, Agents, and Bots for Super Smart Society - II
Chair(s): Masahide Nakamura, *Japan*

FD-CAST: A Tool for Analyzing and Simulating Fire Department Configurations
Naoya Yabuki, Sachio Saiki, Masahide Nakamura, *Japan*

Heart Sound Recognition Technology Based on Deep Learning
Ximing Huai, *P.R. China*; Siriaraya Panote, Dongeun Choi, Noriaki Kuwahara, *Japan*

EVIDENT: Extraction and Visualization Interface of Drawing Execution in Neuropsychological Test
Ryukichi Sekimoto, Sachio Saiki, Masahide Nakamura, Naoki Kodama, Atsushi Sato, *Japan*

Development of a Dialogue Photo Retrieval System to Improve the Reminiscence of the Elderly Based on Deep Learning Analysis
Lei Jiang, Noriaki Kuwahara, *Japan*

Analysis of Effects on Postural Stability by Wearable Tactile Expression Mechanism
Hirotake Yamazoe, Tomoko Yonezawa, *Japan*

A Study of Quantifying Skills of Caregivers Touch to People with Dementia
Haruki Kurase, Noriaki Kuwahara, Miyuki Iwamoto, *Japan*

DUXU S169

Ergonomics in Design - III
Chair(s): Marcelo M. Soares, *P.R. China*

Analyzing the User Experience of Virtual Reality Storytelling with Visual and Aural Stimuli
Burcu Nimet Dumlu, Yüksel Demir, *Turkey*

Applying Storycraft to Facilitate an Experience-Centric Conceptual Design Process
Berke Atasoy, Jean-Bernard Martens, *Netherlands*

E.R.A - Augmented Reality Teaching - Assistive Technology developed for the literacy process of children with ASD
Carolina Boechat Alt Araujo Cirino, Ana Carolina Alves Ferreira Fernandes, Jeniffer da Costa Perez e Silva, Hanna Policiano Serra, *Brazil*

An Exploration of Low-Fidelity Prototyping Methods for Augmented and Virtual Reality
Martin Maguire, *United Kingdom*

Why (not) Adopt Storytelling in Design? Identifying Opportunities to Enhance Students' Acceptance of Storytelling
Qiong Peng, Jean-Bernard Martens, *Netherlands*

S170

Facilitating Individual Creativity, Understanding Team Design Process, and Developing Advanced Tools and Methods - II
Chair(s): Wei Liu, *P.R. China*

A Study on the Cross-screen User Experience of Watching Live Streaming News
Liang Yuan Che, Chien-Hsiung Chen, *Taiwan*

How Effectively Do Experts Predict Elderly Target-users of Assistive Devices? Importance of Expert Knowledge in Device Development
Makiko Watanabe, Takuya Washio, Masashi Iwasaki, Takeshi Arai, Miki Saijo, Takumi Ohashi, *Japan*

Study on the Criteria of Design of Teaching Toolkit for Design Thinking Courses for Lower Grade Students in Primary School
Yaru Lyu, Chunrong Liu, Yan-cong Zhu, Jinge Huang, Xiaohan Wang, Wei Liu, *P.R. China*

Research on User Experience Classification Based on Phenomenological Method
Jingpeng Jia, Xueyan Dong, *P.R. China*

NeuroDesign: Making Decisions and Solving Problems through Understanding of the Human Brain
Wei Liu, Yanjie Jin, Binbin Li, Zhengfang Lyu, Wenjie Pan, Nan Wang, Xin Zhao, *P.R. China*

Engineering Design Entrepreneurship and Innovation: Transdisciplinary Teaching and Learning in a Global Context
Wei Liu, *P.R. China*; Eric Byler, Larry Leifer, *United States*

DUXU S171

User Experience and Usability Driven Design: Emerging Theory and Practice - II

Chair(s): Zhen Liu, *P.R. China*

Usability Heuristic Evaluation for the Hearing Impaired Language Training Mobile App

Wei Xiong, Tian Yao, Qiong Pan, Zhen Liu, *P.R. China*

Interactive Behavior Model for Physically Disabled People Based on Airport Travel Scene

Yi Liu, Jiang Chen, Wa An, Tao Wang, *P.R. China*

Lifestyle as the Object of Design: Elements Exploration from Experience Perspective

Wa An, Xiangyang Xin, Xiong Ding, Yi Liu, *P.R. China*

Research on the Interactive Relations of People with Mobility Difficulties in the Airport Service-Scape

Weifeng Xue, Yi Liu, Miao Cui, Jiang Chen, *P.R. China*

Definition of People with Impediments and Universality Evaluation of Public Service in Airport Travel Scenarios

Miao Cui, Tao Wang, Zilin Pan, Liyang Ni, *P.R. China*

DAPI S172

Distributed, Ambient and Pervasive Interactions

Various Systems with Learning Analytics

Chair(s): Kosuke Mouri, Mohammad Nehal Hasnine, *Japan*

Visualizing Studying Activities for a Learning Dashboard Supporting Meta-cognition for Students

Min Lu, Li Chen, Yoshiko Goda, Atsushi Shimada, Masanori Yamada, *Japan*

Going Beyond Computer-assisted Vocabulary Learning: Research Synthesis and Frameworks

Mohammad Nehal Hasnine, Masatoshi Ishikawa, Kosuke Mouri, Keiichi Kaneko, *Japan*

Learning Support for Career Related Terms with SCROLL and InCircle

Noriko Uosaki, Kosuke Mouri, Takahiro Yonekawa, Chengjiu Yin, Akihiko Ieshima, Hiroaki Ogata, *Japan*

Internet of Toys for Measuring Development of Ball Handling Skills in Support of Childcare Workers

Keiko Yamamoto, Koshiro Matsumoto, Tomonori Usui, Ichi Kanaya, Yoshihiro Tsujino, *Japan*

Learning Analytics Data Flow and Visualizing for Ubiquitous Learning Logs in LMS and Learning Analytics Dashboard

Songran Liu, Kosuke Mouri, Hiroaki Ogata, *Japan*

Visualization and Analysis for Supporting Teachers using Clickstream Data and Eye Movement Data

Tsubasa Minematsu, Atsushi Shimada, Rin-ichiro Taniguchi, *Japan*

LCT S173

Learning and Collaboration Technologies

Computer-Assisted Language Learning

Chair(s): Elis Kakoulli, Anna Nicolaou, Antigoni Parmaxi, Maria Victoria Soule, *Cyprus*

Building Student Interactions Outside the Classroom: Utilizing a Web-Based Application in a University Flipped Learning Course for EFL Learners

Yasushige Ishikawa, Yasushi Tsubota, Takatoyo Umemoto, Masayuki Murakami, Mutsumi Kondo, Ayako Suto, Koichi Nishiyama, *Japan*

The Impact of Corpus Linguistics on Language Teaching in Russia's Educational Context: Systematic Literature Review

Marina Kogan, Victor Zakharov, Nina Popova, Nadezda Almazova, *Russia*

Digital Competences for Language Teachers: Do Employers Seek the Skills Needed from Language Teachers Today?

Tord Tarmo, *Norway*; Maria Victoria Soule, *Cyprus*; Mikhail Fominykh, *Norway*; Antonio Giordano, *Italy*; Maria Perifanou, *Greece*; Vilma Sukacke, *Lithuania*; Anna Novozhilova, *Estonia*; Roberta D'Ambrosio, *Italy*; Alev Elci, *Turkey*

Creating the Profile of Participants in Mobility Activities in the Context of Erasmus+: Motivations, Perceptions, and Linguistic Needs

Panagiotis Kosmas, Antigoni Parmaxi, *Cyprus*; Maria Perifanou, Anastasios Economides, *Greece*; Panayiotis Zaphiris, *Cyprus*

Designing a Virtual Exchange Intervention for the Development of Global Competence: An Exploratory Study

Anna Nicolaou, *Cyprus*

S174

Novel Approaches to Learning - I

Chair(s): Yuni (JeongYun) Heo, *Korea*

Supporting Online Video e-Learning with Semi-automatic Concept-map Generation

Tessai Hayama, Shuma Sato, *Japan*

Using Arduino in service learning to engage pre-service STEM teachers into collaborative learning

Yu-Liang Ting, Yu-Chen Lin, Shin-Ping Tsai, Yaming Tai, *Taiwan*

STEAM-X: An Exploratory Study Adding Interactive Physical Activity to the STEAM Model

Jina Shin, Yuni (JeongYun) Heo, *Korea*

Building STEM Capability in a Robotic Arm Educational Competition

Lin Chu, Yu-Liang Ting, Yaming Tai, *Taiwan*

Framework of Manga Application for Teaching Japanese Language

Masahide Kuwano, Ryosuke Yamanishi, Yoko Nishihara, *Japan*; Naoko Takei, *Canada*

TUESDAY 12:30 - 14:30

ITAP S175

Challenges and Changes for Older Adults Using Technology
Chair(s): Jia Zhou, *P.R. China*

Understanding Older Adults' Vulnerability and Reactions to Telecommunication Fraud: The Effects of Personality and Cognition
Honglian Xiang, Jia Zhou, Bingjun Xie, *P.R. China*

Visual Attention of Younger and Older Drivers in Takeover Tasks of Highly Automated Driving
Qijia Peng, Sunao Iwaki, *Japan*

HCI-CPT S176

Cybersecurity, Privacy and Trust in Intelligent and IoT Environments
Chair(s): Jan-Niklas Voigt-Antons, *Germany*

Understanding Privacy and Trust in Smart Home Environments
Eva-Maria Schomakers, Hannah Biermann, Martina Ziefle, *Germany*

Predicting Tap Locations on Touch Screens in the Field using Accelerometer and Gyroscope Sensor Readings
Emanuel Schmitt, Jan-Niklas Voigt-Antons, *Germany*

Clearing the Hurdles: How to Design Privacy Nudges for Mobile Application Users
Susen Döbelt, Josephine Halama, Sebastian Fritsch, Minh-Hoang Nguyen, Franziska Bocklisch, *Germany*

Analysis of Factors Improving Accuracy of Passive User Identification with Streams of Face Images for Ubiquitous Commerce
Adam Wójtowicz, Jacek Chmielewski, *Poland*

"Alexa, are you spying on me?": Exploring the Effect of User Experience on the Security and Privacy of Smart Speaker Users
George Chalhoub, Ivan Flechais, *United Kingdom*

HCI-Games S177

User Experience Aspects in Games and Playful Interactions
Chair(s): To be announced

A System to Reduce Discomfort of Taunted Player in Multiplayer Online Games
Toshiki Goto, Yu Shibuya, *Japan*

A Cooperative Storytelling Card Game for Conflict Resolution and Empathy
Byung-Chull Bae, Hyun-Jee Kim, *Korea*

Applying Social Gamification in a Gamified Point System
Boyang Liu, Jiro Tanaka, *Japan*

The Kansei Research on the Manipulation Experience of Mobile Game with Joystick
Hsin-Jung Chen, Hsi-Jen Chen, *Taiwan*

Conceptual Change in Preschool Science Education: Evaluating A Serious Game Designed with Image Schemas for Teaching Sound Concept
Yiqi Xiao, Chenhan Jiang, *P.R. China*

Impact of Competitive Versus Cooperative Exergame Play on Releasing Anxiety among Male University Students
Boyang Fan, Xueni Cao, Jingran He, Ting Han, *P.R. China*

MobiTAS S178

Comfort, Discomfort, Driving Experience - What's New in Automated Driving
Chair(s): Angelika C. Bullinger, *Germany*

I Care Who and Where you Are – Influence of Type, Position and Quantity of Oncoming Vehicles on Perceived Safety during Automated Driving on Rural Roads
Patrick Rossner, Angelika C. Bullinger, *Germany*

A Pilot Study on the Dynamics of Online Risk Assessment by the Passenger of a Self-Driving Car among Pedestrians
Jeffery Petit, Camilo Charron, Franck Mars, *France*

In the Passenger Seat: Differences in the Perception of Human vs. Automated Vehicle Control and Resulting HMI Demands of Users
Franziska Hartwich, Cornelia Schmidt, Daniela Gräffing, Josef F. Krems, *Germany*

An Introduction to a Psychoanalytic Framework for Passengers' Experience in Autonomous Vehicles
Guy Cohen-Lazry, Amit Edelstein, Asaf Degani, Tal Oron-Gilad, *Israel*

Ambivalence in Stakeholders' Views on Connected and Autonomous Vehicles
Celina Kacperski, Tobias Vogel, Florian Kutzner, *Germany*

Towards User-Focused Vehicle Automation: the Architectural Approach of the AutoAkzept Project
Uwe Drewitz, Klas Ihme, Carsten Bahn Müller, Tobias Fleischer, HuuChuong La, Anna-Antonia Pape, Daniela Gräffing, Dario Niermann, Alexander Trende, *Germany*



C&C S179

Culture and Computing

User Experience Design for Local Cultural Heritage

Chair(s): To be announced

Interactive Rakuchu Rakugai-zu (Views in and around Kyoto)

Naoko Tosa, Ryohei Nakatsu, Makoto Nagao, Naoko Iwasaki, Tsumiki Wada, Futoshi Saegusa, Tsuyoshi Kishigami, Katsunori Ishikawa, Masato Takaba, Kohei Nishino, Japan

Research on the Smartable Design Paths of Modern Museum —A Case Study on Jingzhou Museum

YaoHan Luo, P.R. China

User Experience of Interaction Design in Local Cultural Heritage Museum based on Digital Information Services and Navigation Support

Yidan Men, P.R. China; Robert Chen, United Kingdom; Xiaoping Hu, P.R. China

The Effects of Interactive Digital Exhibits (IDEs) on Children's Experience in Science Museums

Qiang Li, P.R. China; Bohyeon Yoo, Korea; Yong Ding, P.R. China

AI-HCI S180

Artificial Intelligence in HCI

User Experience Design in AI Systems - II

Chair(s): Sachin Kumarswamy, Netherlands

Enriching Social Media Personas with Personality Traits: A Deep Learning Approach Using the Big Five Classes

Joni Salminen, Qatar; Rohan Gurunandan Rao, India; Soonygyo Jung, Korea; Shammur A. Chowdhury, Bernard J. Jansen, Qatar

Usability in Mixed Initiative Systems

Sachin Kumarswamy, Netherlands

SANDBOX Project Optimizing the Relationship between the User Interface and Artificial Intelligence to Improve Energy Management in Smart Buildings

Christophe Bortolaso, Stéphanie Combettes, Marie-Pierre Gleizes, Berangere Lartigue, Mathieu Raynal, Stéphanie Rey, France

Beyond the Buzzwords: On the Perspective of AI in UX and Vice Versa

Dieter P. Wallach, Lukas A. Flohr, Annika Kaltenhauser, Germany

NOTES

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TUESDAY 12:30 - 14:30

HCI S182

xR in Medical Science and Physical Therapy
Chair(s): Hiroshi Noborio, *Japan*

Deadlock-Free and Collision-Free Liver Surgical Navigation by Switching Potential-Based and Sensor-Based Functions
Hiroshi Noborio, Kiyomi Kawai, Kaoru Watanabe, Katsunori Tachibana, Takahiro Kunii, Kiminori Mizushino, *Japan*

Stability Maintenance of Depth-Depth Matching of Steepest Descent Method using an Occluded Organ
Miho Asano, Tomohiro Kuroda, Satoshi Numata, Tsuneo Jozen, Tomoki Yoshikawa, Hiroshi Noborio, *Japan*

The Current Status and Challenges in Augmented-Reality Navigation System for Robot-Assisted Laparoscopic Partial Nephrectomy
Akihiro Hamada, Atsuro Sawada, Jin Kono, Masanao Koeda, Katsuhiko Onishi, Takashi Kobayashi, Toshinari Yamasaki, Takahiro Inoue, Hiroshi Noborio, Osamu Ogawa, *Japan*

A Hashing Algorithm of Depth Image Matching for Liver Surgery
Satoshi Numata, Masanao Koeda, Katsuhiko Onishi, Kaoru Watanabe, Hiroshi Noborio, *Japan*

The Efficacy of Virtual Reality Exposure Therapy for Fear of Falling (FOF) in the Elderly
Morihiro Tsujishita, Hiroshi Noborio, Yashuhiro Masutani, Masanao Koeda, Katsuhiko Onishi, *Japan*

Study on the Development of Augmented-Reality Navigation System for Transsphenoidal Surgery
Katsuhiko Onishi, Seiyu Fumiyama, Yohei Miki, Masahiro Nonaka, Masanao Koeda, Hiroshi Noborio, *Japan*

S183

Human Robot Interaction - I
Chair(s): Midori Sugaya, *Japan*

Emotion Synchronization Method for Robot Facial Expression
Yushun Kajihara, Peeraya Sripijan, *Japan*; Chen Feng, *P.R. China*; Midori Sugaya, *Japan*

AuDimo: A Musical Companion Robot to Switching Audio Tracks by Recognizing the Users Engagement
W. K. N. Hansika, Lakindu Yasassri Nanayakkara, Adhisha Gammanpila, P. Ravindra S. De Silva, *Sri Lanka*

On positive effect on humans by poor operability of robot
Mitsuharu Matsumoto, *Japan*

A Portable Measurement System for Spatially-varying Reflectance using Two Handheld Cameras
Zar Zar Tun, Seiji Tsunozaki, Takashi Komuro, Shoji Yamamoto, Norimichi Tsumura, *Japan*

Human-Drone Interaction: Using Pointing Gesture to Define a Target Object
Anna C. S. Medeiros, Photchara Ratsamee, Yuki Uranishi, Tomohiro Mashita, Haruo Takemura, *Japan*

User Expectations of Social Robots in Different Applications: An Online User Study
Xiao Dou, *P.R. China*; Chih-Fu Wu, *Taiwan*; Xi Wang, Jin Niu, *P.R. China*

S184

Interaction Design and Evaluation Methods - I
Chair(s): Martin Maguire, *United Kingdom*

Reviewing and Predicting Human-Machine Cooperation Based on knowledge Graph Analysis
Yujia Liu, *P.R. China*

Single Image Contrast Enhancement by Training the HDR Camera data
Kenji Iwata, Ryota Suzuki, Yue Qiu, Yutaka Satoh, *Japan*

Play to Improve: Gamifying Usability Evaluations in Virtual Reality
Abhijai Miglani, Sairam Kidambi, Praveen Mareguddi, *India*

Human Factors Evaluation Principals for Civil Aircraft Flight Deck Controls Design and Integration
Fei Li, Kaiwen Chen, Pu Hong, Yuan Wang, *P.R. China*

Research on Method of Acquiring and Screening of Personalized Functional Requirements of Smart Watches for the Elderly based on Kano Model
Shengqing Huang, Quan Gu, Jie Zhang, Chaoxiang Yang, *P.R. China*

Usability Evaluation of Smartphone Keyboard Design from an Approach of Structural Equation Model
Yincheng Wang, Junyu Huo, Yuqi Huang, Ke Wang, Di Wu, Jibo He, *P.R. China*

HIMI S185

Data, Semantics and Interaction
Chair(s): Yumi Asahi, Ken Fukuda, *Japan*

Consumer Analysis of High Sensitivity Layer
Yoshio Matsuyama, Yumi Asahi, *Japan*

Feature Analysis of Customers Purchasing Cars in Japan
Kenta Hara, Yumi Asahi, *Japan*

Creating New Strategies for the Changing Sports Business ~The Case of Nippon Professional Baseball~
Masaru Kondo, Yumi Asahi, *Japan*

Ontology Construction for Annotating Skill and Situation of Airline Services to Multi-Modal Data
Satoshi Nishimura, Yuichi Oota, Ken Fukuda, *Japan*

A Validation of Textual Expression about Disaster Information to Induce Evacuation
Tomonori Yasui, Takayoshi Kitamura, Tomoko Izumi, Yoshio Nakatani, *Japan*

Effective Disaster Prevention Map Creation Using Road Network Analysis
Kaname Takenouchi, Ikuro Choh, *Japan*

EPCE S186

Harmonized Interaction with Complex Systems
Chair(s): Shan Fu, *P.R. China*

An Object Distance Detection Method for Driving Performance Evaluation
Yang Gao, Zhen Wang, Shan Fu, *P.R. China*

A Visual-based Approach for Manual Operation Evaluation
Yiyao Zhao, Zhen Wang, Yanyu Lu, Shan Fu, *P.R. China*

Multidimensional Risk Dynamics Modeling on Operator Errors of Nuclear Power Plant
Guanyin Wu, Yi Lu, Ming Jia, Zhen Wang, Caifang Peng, Yanyu Lu, Shan Fu, *P.R. China*

Usability Evaluation of Car Cockpit Based on Multiple Objective Measures
Chuanxiang Wei, Zhen Wang, Shan Fu, *P.R. China*

Design and Research of Civil Aircraft Flap/Flap Control Lever Based on Ergonomics
Fang Zhang, Xianchao Ma, Yinbo Zhang, Ruijie Fan, *P.R. China*

S187

Cognition and Design - II
Chair(s): To be announced

Research on BIM and Mobile Equipment in Substation Construction Schedule Management
Rui Liu, Fan Liu, *P.R. China*

Shared Mental Model Processing in Visualization Technologies: A Review of Fundamental Concepts and a Guide to Future Research in Human-Computer Interaction
Nor'ain Mohd Yusoff, Siti Salwah Salim, *Malaysia*

Influence of Visual Symbol's User Background and Symbol Semantic Abstraction Level on User's Cognition in AR Auxiliary Assembly Environment
Lei Wu, Yao Su, Junfeng Wang, *P.R. China*

New Production Development and Research Based on Interactive Evolution Design and Emotional Need
Tianxiang Wang, Meiyu Zhou, *P.R. China*

The Effect and the Efficiency Balance of Font Size and Font Color Change on the Human Memory in Chinese Vocabulary
Tse-Wei Fu, Jui-Wen Peng, *Taiwan*

UAHCI S188

ICT in Health and in Active Ageing - I
Chair(s): João Barroso, *Portugal*; Leontios Hadjileontiadis, *United Arab Emirates*

Tech-inclusion Research: An Iconographic Browser Extension Solution
Tânia Rocha, Hugo Paredes, Paulo Martins, João Barroso, *Portugal*

Process Modelling (BPM) in Healthcare – Breast Cancer Screening
Inês Terras Marques, Carolina Santos, Vitor Santos, *Portugal*

Individual's Neutral Emotional Expression Tracking For Physical Exercise Monitoring
Salik Ram Khanal, Jaime Sampaio, João Barroso, Vitor Filipe, *Portugal*

Single Image-Based Food Volume Estimation Using Monocular Depth-Prediction Networks
Alexandros Graikos, Vasileios Charisis, Dimitrios Iakovakis, Stelios Hadjidimitriou, *Greece*; Leontios Hadjileontiadis, *United Arab Emirates*

HoloPrognosis - An AR-based Serious Exercise Game for Early Stage Parkinson's Disease Patients
Marios Thomos, Vasileios Charisis, Stelios Hadjidimitriou, Dimitrios Iakovakis, Sevasti Bostantzopoulou, *Greece*; Leontios Hadjileontiadis, *United Arab Emirates*

S189

Applications and Games for Children with ASD
Chair(s): Asterios Leonidis, *Greece*

Using Augmented Reality Technology with Serial Learning Framework to Develop a Serial Social Story Situation Board Game System for Children with Autism to Improve Social Situation Understanding and Social Reciprocity Skills
Hsiu Ting Hsu, I-Jui Lee, *Taiwan*

Social intervention strategy of AR combined with theater-based games to improve the performance of autistic children in symbolic play and social skills
Wei-Zhen Wang, I-Jui Lee, *Taiwan*

Using Augmented Reality and Concept Mapping to Improve Ability to Master Social Relationships and Social Reciprocity for Children with Autism Spectrum Disorder
Yu-Chen Huang, I-Jui Lee, *Taiwan*

The Influence of Traits Associated with Autism Spectrum Disorder (ASD) on the Detection of Fake News
Jacqui Taylor-Jackson, *Australia*; Sophie Matthews, *United Kingdom*

Applying the Game mode and Teaching strategies of Computational Thinking to the Improvement of Social skills Training for Children with Autism Spectrum Disorders
I-Jui Lee, *Taiwan*

VAMR S190

Virtual, Augmented and Mixed Reality

User Experience in VAMR - II
Chair(s): Vasilis Kouroumalis, *Greece*

Research on a Washout Algorithm for 2-DOF Motion Platforms
Zhejun Liu, Qin Guo, Zhifeng Jin, Guodong Yu, *P.R. China*

Contrast and Parameter Research of Augmented Reality Indoor Navigation Scheme
Wen-jun Hou, Lixing Tang, *P.R. China*

Effect of Motion Cues on Simulator Sickness in a Flight Simulator
Jiwon Kim, Jihong Hwang, Taezoon Park, *Korea*

Research on the Perceptual Interaction Model of Virtual Reality Films
Yunpeng Jia, Ziyue Liu, Chuning Wang, Lei Xu, *P.R. China*

Study on User-centered Usability Elements of User Interface Designs in an Augmented Reality Environment
Un Kim, Yaxi Wang, Wenhao Yuan, *P.R. China*

CCD S191

Cross-Cultural Design

Learning, Design and Technology for the 8000 Days
Chair(s): Pei-Lee Teh, *Malaysia*

Developing Empathy Towards Older Adults Through Emotional and Cognitive Enhancement
Pei-Lee Teh, Motoki Watabe, Annereena Ravichandran, Kristel Tan, *Malaysia*

Say-It & Learn: Interactive Application for Children with ADHD
Sabeel Butt, Fazal E Hannan, Mujahid Rafiq, Ibrar Hussain, C.M. Nadeem Faisal, Waleed Younas, *Pakistan*

Design as Mediation for Social Connection Against Loneliness of Older People
Yumei Dong, Haoxin Weng, *P.R. China*; Hua Dong, *United Kingdom*; Long Liu, *P.R. China*

An Intelligent Platform for Offline Learners Based on Model-driven Crowdsensing over Intermittent Networks
Shin'ichi Konomi, *Japan*; Lulu Gao, *P.R. China*; Doreen Mushi, *Tanzania*

Study on Innovative Gestures Applicable to the Elderly
Ming-Hong Wang, Shuo-Fang Liu, *Taiwan*

S192

Design for Engagement and Communication - I
Chair(s): Yuan-Chi Tseng, *Taiwan*

Developing the Interaction for Family Reacting with Care to Elderly
Yi-Sin Wu, Teng-Wen Chang, *Taiwan*; Sambit Datta, *Australia*

Service Design for Proposing an Innovative Intergenerational Interaction Platform
Sheng-Ming Wang, *Taiwan*; Sara Sanchez, *Guatemala*; Yu-Chen Wang, *Taiwan*; Wei-Jie Pan, *P.R. China*; Cheng-Yen Lin, *Taiwan*

Cocreating Value with Customers: A Case Study of a Technology-Based Startup
Fang-Wu Tung, Shuo-De Lin, *Taiwan*

Design of Vibrotactile Direction Feedbacks on Wrist for Three-Dimensional Spatial Guidance
Jo-Hsi Tang, *Taiwan*; Giuseppe Raffa, *United States*; Liwei Chan, *Taiwan*

Usability Evaluation on Intuitive Interaction between Product Interfaces and Older Adults with Dementia
Li-Hao Chen, Yi-Chien Liu, Pei-Jung Cheng, *Taiwan*

S193

User Behavior Research
Chair(s): Hsiu-Ping Yueh, *Taiwan*

Asynchronous Co-Eating through Video Message Exchange: Support for Making Video Messages
Kanako Obata, Yuichi Nakamura, Longfei Chen, *Japan*; John Augeri, *France*

Study on Acceptance of Social Robots by Aging Adults Living Alone
Na Chen, Xiaoyu Liu, Yue Sun, *P.R. China*

A Hybrid Conversational Agent with Semantic Association of Autobiographic Memories for the Elderly
Yu-Ting Hsiao, Edwinn Gamborino, Li-Chen Fu, *Taiwan*

Designing and Developing a Sandbox-style Tangible AR for Geoscience Learning
Chia Yu Hsu, Weijane Lin, Hsiu-Ping Yueh, *Taiwan*

Can older adults' acceptance toward robots be enhanced by observational learning?
Sung-En Chien, Ching-Ju Yu, Yueh-Yi Lai, Jen-Chi Liu, Li-Chen Fu, Su-Ling Yeh, *Taiwan*

CCD S194

Design for Cross-Culture - V
Chair(s): Rungtai Lin, *Taiwan*

Research on Social Service Education System from the Perspective of Chinese Welfare Culture
Jinze Li, Mingming Zong, Yu Wang, *P.R. China*

Effects of Loving Kindness Meditation on Mindfulness, Spirituality and Subjective Well-being of Flight Attendants
Chao Liu, Hao Chen, *P.R. China*; Chia-Yi Liu, Rungtai Lin, Wen-Ko Chiou, *Taiwan*

Visual Data Storytelling: A Case Study of Turning Big Data into Chinese Painting
Yanru Lyu, *P.R. China*; Tuck Fai Cheng, *Malaysia*; Rungtai Lin, *Taiwan*

An Exploration of the Development of Visual Design in Taiwan - A Case Study of the Cover Design of Industrial Design Magazine
Po-Hsien Lin, *Taiwan*; Jianping Huang, *P.R. China*; Rungtai Lin, Mo-Li Yeh, *Taiwan*

New digital media technologies put forth cross-domain design
Jie Tang, ChengYao Cai, LiuYing Huang, Xing Ji, *P.R. China*

SCSM S195

The World of Consumers in Social Media: People and Organizations
Chair(s): Adela Coman, *Romania*

The Key Role of Social Media in Identifying Consumer Opinions for Building Sustainable Competitive Advantages
Armenia Androniceanu, Irina Alexandra Georgescu, *Romania*; Jani Kinnunen, *Finland*

The World of Museums and Web 2.0: Links between Social Media and the Number of Visitors in Museums
Adela Coman, Ana-Maria Grigore, Andreea Ardelean, Robert Maracine, *Romania*

The Effect of Social Media based Electronic Word of Mouth on Propensity to Buy Wearable Devices
David Ntumba, Adheesh Budree, *South Africa*

A Practice-Based Artificial Society Approach to Exploring the Evolution of Trust
Michael Heidt, Andreas Bischof, *Germany*

S196

Consumer Behavior from the Viewpoint of Data Science
Chair(s): Kohei Otake, Takashi Namatame, *Japan*

Comparison of the Purchasing Behavior for Oneself or Other Using Eye Tracking Gaze Data
Mei Nonaka, Kohei Otake, Takashi Namatame, *Japan*

A Study on the Similarity of Fashion Brands Using Consumer Relationship and Consumer Sense
Yuzuki Kitajima, Kohei Otake, Takashi Namatame, *Japan*

Analysis of Fashion Market Trend Using Advertising Data of Shopping Information Site
Retsuya Saito, Kohei Otake, Takashi Namatame, *Japan*

Analysis of Consumer Community Structure and Characteristic within Social Media
Shin Miyake, Kohei Otake, Takashi Namatame, *Japan*

Analysis of the Exposing Media Pattern that Affect Accessing Own Website
Yuho Katagiri, Kohei Otake, Takashi Namatame, *Japan*

DHM S197

Robots, Agents, and Bots for Super Smart Society - III
Chair(s): Masahide Nakamura, *Japan*

Fine-Grained Map Coloring Web Service for JavaScript
Tetsuya Nakai, Sachio Saiki, Masahide Nakamura, *Japan*

Partner Agent Showing Continuous and Preceding Daily Activities for Users' Behavior Modification
Tomoko Yonezawa, Naoto Yoshida, Keiichiro Nagao, Xin Wan, *Japan*

Investigations on Monitoring Sensor Usage and Decision-Making: A Case Study in an Elderly Care Facility
Isamu Kajitani, Keiko Homma, Yoshio Matsumoto, *Japan*

Basic Study of Wall-projected Humanitude Agent for Pre-care Multimodal Interaction
Xin Wan, Tomoko Yonezawa, *Japan*

Regulated Body-Sharing Virtual Trips for Pleasure and Business
Reem Elkhoully, Shin Fukui, Emi Tamaki, *Japan*

Extracting and Structuring Latent Knowledge for Risk Recognition from Eyes and Utterances of Field Overseers
Noriyuki Kushiro, Yusuke Aoyama, Toshihiro Mega, *Japan*

Social Computing and Social Media

Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management

WEDNESDAY 11:00 - 13:00

DUXU S198

User Experience and Usability Driven Design: Emerging Theory and Practice - III
Chair(s): Zhen Liu, *P.R. China*

Application of Interactive Design in Shanghai Public Art Practice
Wenjing Yin, Chen Wang, *P.R. China*

User Experience and Usability Design Centered Smart Application Design to Waste Sorting for Citizens Living in Smart City in China
Ziyuan Chi, Zhen Liu, *P.R. China*

Usability Oriented New Baren Product Design and Test Practice
Ke Zhang, Zhen Liu, Yan Wang, Xiaoli Dong, *P.R. China*

Usability Design Study of University Website: A Case of Normal University in China
Yu Tian, Zhen Liu, *P.R. China*

Financial shared course design based on human-computer interaction
Xiaoyan Niu, Bin Wang, *P.R. China*

Research on the service design of smart campus based on Sustainable Strategy -- taking smart canteen as an example
Ruiqian An, Tao Xi, *P.R. China*

DAPI S199

Design with Digital Media
Chair(s): Jun Hu, *Netherlands*

A Novel Context for the Expression of Art through Interactive Multimedia Electronic Music Installation—Taking the Work of Rainbow Cliff and Dusk as an Example
Xiaoni Zhuang, *P.R. China*

Research on Interaction Models of Interactive Digital Art and Its Application in Designing User Control
Suyuan Pan, *P.R. China*

Interactive Relationships in Animation Art Ecology
Yue Zhou, *P.R. China*

Interactive Visualization of the Thoughts in Traditional Chinese Culture
Jin Sheng, *P.R. China*

Simplicity and Interaction in "Buddhist-style" Chinese Ink Animation Short Films
Aihua Cao, *P.R. China*

Applying Deep Learning in Creative Re-creation of Changsha Kiln Cultural Relics
Wen Lu, *P.R. China*

HCIBGO S200

HCI Issues in Digital Fashion Communication - I
Chair(s): Lorenzo Cantoni, Nadzeya Kalbaska, *Switzerland*

An Exploration of Personalization in Digital Communication - Insights in Fashion
Tekila Harley Nobile, Nadzeya Kalbaska, *Switzerland*

Localization and Cultural Adaptation on the Web: An Explorative Study in the Fashion Domain
Alice Noris, Italy; Patricia SanMiguel, Spain; Lorenzo Cantoni, *Switzerland*

The Evolution of Marketing in the Context of Voice Commerce: A Managerial Perspective
Alex Mari, Andreina Mandelli, René Algesheimer, *Switzerland*

Cultural Appropriation in the Digital Context: A Comparative Study between two Fashion Cases
Teresa Sadaba, Valeria LaFata, Andrea Torres, *Spain*

LCT S201

Novel Approaches to Learning - II
Chair(s): Shinobu Hasegawa, *Japan*

Web-based Teleoperation System for Learning of 3D Prototype Designing and Printing
Siam Charoenseang, Poonsiri Jailungka, Chaowwalit Thammatinno, *Thailand*

Abstract Thinking Description System for Programming Education Facilitation
Yasutsuna Matayoshi, Satoshi Nakamura, *Japan*

Proposal of a Training Method for Beat Count Ability
Kazuhiro Minami, Takayoshi Kitamura, Tomoko Izumi, Yoshio Nakatani, *Japan*

Learners' Mental State Estimation with PC built-in Camera
Shinobu Hasegawa, Atsushi Hirako, Xianwen Zheng, Shofiyati Nur Karimah, Koichi Ota, Teruhiko Unoki, *Japan*

Compare Differences of Communication and Creativity Between different Team Composition and Using Different Conceptual Analysis Integrational Tools
Yi Chi Fu, Chao Yang Yang, *Taiwan*

Research on the Design of Intelligent Interactive Toys Based on Marker Education
Yi Lu, Wei Pang, *P.R. China*

Design, User Experience, and Usability

Distributed, Ambient and Pervasive Interactions

HCI in Business, Government and Organizations

Learning and Collaboration Technologies

| ITAP S202 | S203 | S204 | HCI-CPT S205 |
|---|---|---|--|
| <p>ICT for Elders Eudaimonia and Social Inclusion Chair(s): Yuxiang (Chris) Zhao, P.R. China</p> | <p>ICT for Care and Support of Elderly People in Hyper Aged Societies Chair(s): Hirokazu Kato, Japan</p> | <p>Elder's User Experiences - I Chair(s): To be announced</p> | <p>Why Cybersecurity is Vital for your Business Chair(s): Sebastian Korfmacher, Sonja Miesner, Germany</p> |
| <p>Research on the design of smart home products based on the needs of the elderly user experience Xinxin Sun, P.R. China</p> | <p>Effect of Display Location on Finger Motor Skill Training with Music-based Gamification Naoki Inoue, Yuichiro Fujimoto, Japan; Alexander Plopski, New Zealand; Sayaka Okahashi, Masayuki Kanbara, Japan; Hsiu-Yun Hsu, Li-Chieh Kuo, Fong-Chin Su, Taiwan; Hirokazu Kato, Japan</p> | <p>Wearable Technologies: Acceptance Model for Smartwatch Adoption among Older Adults May Jorella Lazaro, Jaeseo Lim, Sung Ho Kim, Myung Hwan Yun, Korea</p> | <p>Cybersecurity in the Interest of HCI, Occupational Safety & Health and Standardization Sebastian Korfmacher, Germany</p> |
| <p>Research on Smart Care System for Elder Sojourners Feng Liu, P.R. China</p> | <p>Virtual Kayaking: A Local Culture-Based Virtual Reality Paddling Experience Kao-Hua Liu, Taiwan; Tomoya Sasaki, Hiroyuki Kajihara, Atsushi Hiyama, Masahiko Inami, Japan; Chien-Hsu Chen, Taiwan</p> | <p>Contextual Design of Intergenerational Innovative Service for Aging in Place Suphichaya Suppipat, Thailand; Wei-Ming Cheng, Sheng-Ming Wang, Taiwan</p> | <p>Cyber Security Threats and Incidents in Industrial Control Systems Jens Mehrfeld, Germany</p> |
| <p>Persuasive Design Strategy of Online Health Education for Elderly Adults Based on TAM Model Yongyan Guo, P.R. China</p> | <p>Comparison of Gaze Skills between Expert and Novice in Elderly Care Miyuki Iwamoto, Atsushi Nakazawa, Japan</p> | <p>How to Beautify the Elderly?: A Study on the Facial Preference of Senior Citizens Weiwei Zhang, Yuankun Li, P.R. China; Jihong Jeung, Korea</p> | <p>Smart Assistants in IT-Security – An Approach to Addressing the Challenge by Leveraging Assistants' Specific Features Michael Kuback, Heiko Roßnagel, Germany</p> |
| <p>Understanding the Influence of AI Voice Technology on Visually Impaired Elders' Psychological Well-Being: an Affordance Perspective Jie Gu, Xiaolun Wang, Xinlin Yao, Anan Hu, P.R. China</p> | <p>Supporting Information Recall for Elderly People in Hyper Aged Societies Tatsuya Ishigaki, Jingyi You, Hiroki Takimoto, Manabu Okumura, Japan</p> | <p>Chronic Health Problems of Older Workers and Their Occupational Safety: A meta-analysis Lu Peng, P.R. China; Rita W.L. Yu, Alan H.S. Chan, Hin Piu Yim, Hong Kong</p> | <p>Building Connections for a Secure User Experience David Blank, Ravi Kanth Kosuru, Germany</p> |
| <p>A Study on the Preference of Elderly Diabetic Patients to Blood Glucose Meters Yixiang Wu, P.R. China</p> | <p>Tablet-based Comprehensive Cognitive Rehabilitation in Daily Life Using Virtual and Augmented Reality Technology Sayaka Okahashi, Saori Sawada, Ayae Kinoshita, Japan</p> | <p>A study on the effect of Gamification on alleviation anxiety levels of the elderly in China Fumie Muroi, Japan; Xinyi Tao, Ting Han, P.R. China</p> | <p>A New Hope: Human-Centric Cybersecurity Research Embedded within Organizations Phillip L. Morgan, Phoebe M. Asquith, Laura M. Bishop, George Raywood-Burke, Adam Wedgbury, Kevin Jones, United Kingdom</p> |
| <p>The Effect of Social Media Use on Older Adults' Loneliness-The Moderating Role of Self-Disclosure Xiaoting Xu, Yuxiang (Chris) Zhao, Qinghua Zhu, P.R. China</p> | | | <p>"Trust Me, You Will Need It": Cybersecurity as Extracurricular Subject at Estonian Schools Birgy Lorenz, Kaido Kikkas, Estonia</p> |

Human Aspects of IT for the Aged Population

HCI for Cybersecurity, Privacy and Trust

WEDNESDAY 11:00 - 13:00

HCI-Games S206

HCI in Games

Impact of Game Play

Chair(s): Xiaocen Liu, *P.R. China*

Can Video Game Training Improve the Two-Dimensional Mental Rotation Ability of Young Children? A Randomized Controlled Trial

Xiaocen Liu, Heqing Huang, Kai Yu, Donghui Dou, *P.R. China*

The Role of Parenting Styles and Parents' Involvement in Young Children's Videogames Use

Heqing Huang, You Zhou, Fangbing Qu, Xiaocen Liu, *P.R. China*

The Relation between Video Game Experience and Children's Attentional Networks

Hui Li, Muyun Long, *P.R. China*; Kaveri Subrahmanyam, *United States*

A Systematic Review of Game Learning Research in China

Jingying Wang, Qianru Song, Shoubao Gao, Yuhong Tao, *P.R. China*

Relationship between Young Children's Problematic Behaviors, Videogaming Status, and Parenting Styles

Fangbing Qu, Changwei Gu, Heqing Huang, Aozi Zhang, Meng Sun, Xiaocen Liu, *P.R. China*

MobiTAS S207

HCI in Mobility, Transport and Automotive Systems

UI/UX for Vehicle Information and Assistance Systems

Chair(s): Lutz Krauss, *Germany*

Measuring Driver Distraction with the Box Task – A Summary of Two Experimental Studies

Tina Morgenstern, Daniel Trommler, Yannick Forster, Frederik Naujoks, Sebastian Hergeth, Josef F. Krems, Andreas Keinath, *Germany*

Shut Up and Drive? User Requirements for Communication Services in Autonomous Driving

Hannah Biermann, Ralf Philippsen, Teresa Brell, Martina Ziefle, *Germany*

Measures for Well-being in Highly Automated Vehicles: The Effect of Prior Experience

Vanessa Sauer, Alexander Mertens, Alexander Heyden, Stefan Groß, Verena Nitsch, *Germany*

Potentializing on haptic feedback mechanism on developing interactive components for driver seat

Mannan Ghanizadehgrayli, Hoda Eskandar Nia, Sahar Asgari, Mahdi Najafi, Nashid Nabian, *Iran*

Conflict Situations and Driving Behavior in Road Traffic – an Analysis using Eyetracking and Stress Measurement on Car Drivers

Swenja Sawilla, Christine Keller, Thomas Schlegel, *Germany*

C&C S208

Culture and Computing

Intangible Cultural Heritage as Immersive Experience - I

Chair(s): Elke Reinhuber, Benjamin Seide, *Singapore*

Prakempa: The Colour Music of the Balinese Calendar

Vibeke Sørensen, *Singapore*; J. Stephen Lansing, *United States*

Virtual Cinematic Heritage for the Lost Singaporean Film Pontianak (1957)

Benjamin Seide, Ben Slater, *Singapore*

Redefining Visual Storytelling for Adaptation of Classic Literature in Immersive Environments: Hölderlin's Echo VR

Hannes Rall, *Singapore*

Research on Cultural Tourism Experience Design Based on Augmented Reality

Meiyu Lv, Lei Wang, Ke Yan, *P.R. China*

AI-HCI S209

Artificial Intelligence in HCI

AI in the Design Process

Chair(s): Chaehan So, *Korea*

A Method for Quickly Establishing Personas

Wen-jun Hou, Xiang-yuan Yan, Jia-xin Liu, *P.R. China*

EasySketchDesign: Product Sketch Design Assisted with Interactive Sketch Retrieval

Yukun Hu, Suihuai Yu, Jianjie Chu, Yichen Yang, Chen Chen, Fangmin Cheng, *P.R. China*

Human-in-the-Loop Design Cycles – A Process Framework that Integrates Design Sprints, Agile Processes, and Machine Learning with Humans

Chaehan So, *Korea*

A Paradigm Shift in Design driven by AI

Qiong Wu, Cun Jun Zhang, *P.R. China*

Rethinking Personas for Fairness: Algorithmic Transparency and Accountability in Data-Driven Personas

Joni Salminen, *Qatar*; Soony-gyo Jung, *Korea*; Shammur A. Chowdhury, Bernard J. Jansen, *Qatar*

HCI S210

The Rise of the e-Coach
Chair(s): Maurizio Caon, *Switzerland*

Designing An AI-Companion to Support the Driver in Highly Autonomous Cars
Emmanuel De Salis, Marine Capallera, Quentin Meteier, Leonardo Angelini, Omar Abou Khaled, Elena Mugellini, Marino Widmer, Stefano Carrino, *Switzerland*

Design of digital coaches for health and wellness in the workplace
Alessandra Rinaldi, Kiana Kianfar, *Italy*

Exploring User Expectations of Brain-Training and Coaching Technologies for Cognitive Health
Kyle Harrington, Michael P. Craven, Max L. Wilson, Aleksandra Landowska, *United Kingdom*

An Embodied and Ubiquitous E-coach for Accompanying Older Adults towards a Better Lifestyle
Mira El Kamali, Leonardo Angelini, Maurizio Caon, Denis Lalanne, Omar Abou Khaled, Elena Mugellini, *Switzerland*

Designing an Assisted Self-help Mobile App to Cope with Panic Disorder: Preliminary Results and Open Issues
Maria Teresa Paratore, *Italy*

S211

Quality in Interaction
Chair(s): Maria Laura Mele, Stefano Federici, *Italy*; Simone Borsci, *Netherlands*; Antonio Opromolla, *Italy*

Spreading Awareness About Quality in Interaction and UX to Young Generations
Antonio Opromolla, Valentina Volpi, Carlo Maria Medaglia, *Italy*

A Gamified Mobility Experience
Andrea Vesco, Salvatore Di Dio, *Italy*; Enza Lissandrello, *Denmark*; Domenico Schillaci, *Italy*

Bringing digital transformation into Museums: the Mu.SA MOOC case study
Massimiliano Dibitonto, Katarzyna Leszczynska, Elisa Cruciani, Carlo Maria Medaglia, *Italy*

Computational Design for complexity-related issues. Strategies to foresee emergent behaviour and social conflict in the 'organic' Tirana
Sotir Dhamo, Ledian Bregasi, Valerio Perna, *Albania*

Designing and testing HomeCare4All: a eHealth mobile app for elderly
Roberta Grimaldi, Eliseo Sciarretta, Giovanni Andrea Parente, Carlo Maria Medaglia, *Italy*

Relational Interaction: Challenges and Opportunities for Social Innovation through Service Co-Production
Eun Ji Cho, *P.R. China*

S212

HCI, Art and Design
Chair(s): Salah Uddin Ahmed, *Norway*; Mohammad Shidujaman, *P.R. China*

Mapping between Mind Cybernetics and Aesthetic Structure in Real-Time EEG Art
Minli Zhang, Yiyuan Huang, *P.R. China*; Salah Uddin Ahmed, *Norway*; Mohammad Shidujaman, *P.R. China*

Pincello: An Affordable Electronics Kit for Prototyping Interactive Installations
Emanuel Felipe Duarte, M. Cecília C. Baranauskas, *Brazil*

A Methodological Approach to Create Interactive Art in Artificial Intelligence
Weiwen Chen, Mohammad Shidujaman, Jin Jiangbo, *P.R. China*; Salah Uddin Ahmed, *Norway*

Online control of Autonomous Robot: A Design Approach
Mohammad Shidujaman, *P.R. China*; Hafizul Imran, *Bangladesh*; Salah Uddin Ahmed, *Norway*

A Quantitative Method to Measure Noticeability of Animations in Mobile Interfaces
Qianyao Xu, *P.R. China*; Yiding Liu, Yingqing Xu, *Christmas Island*

S213

Human Robot Interaction - II
Chair(s): Hans-Jürgen Buxbaum, *Germany*

The Effects of Different Robot Trajectories on Situational Awareness in Human-Robot Collaboration
Sumona Sen, Hans-Jürgen Buxbaum, Lisanne Kremer, *Germany*

Theses on the Future Design of Human-Robot Collaboration
Hans-Jürgen Buxbaum, Sumona Sen, *Germany*; Ruth Häusler, *Switzerland*

Human-Robot Interaction in Health Care: Focus on Human Factors
Lisanne Kremer, Sumona Sen, Monika Eigenstetter, *Germany*

Trust on Service Robots: A Pilot Study on the Influence of Eyes in Humanoid Robots during a VR Emergency Egress
André Diogo, Hande Ayanoglu, Júlia Teles, Emilia Duarte, *Portugal*

Evaluating a Mouse-based and a Tangible Interface Used for Operator Intervention on two Autonomous Robots
Andreas Mallas, Michalis Xenos, Maria Rigou, *Greece*

UAHCI S214

Digital Accessibility in Education
Chair(s): Georgios Kouroupetroglou, Greece

Digital Accessibility in the Education of the Deaf in Greece
Vasileios Kourbetis, Spyridoula Karipi, Konstantinos Boukouras, Greece

Competencies for Educators in delivering Digital Accessibility in Higher Education
John Gilligan, Ireland

Voice User Interfaces for Service Robots: Design Principles and Methodology
Pepi Stavropoulou, Dimitris Spiliotopoulos, Georgios Kouroupetroglou, Greece

MOOC Accessibility from the Educator Perspective
Dimitris Spiliotopoulos, Vassilis Pouloupoulos, Dionisis Margaritis, Eleni Makri, Costas Vassilakis, Greece

Investigating the Effect of Adding Visual Content to Textual Search Interfaces on Accessibility of Dyslexic Users
Mona Muftah, Ahamed Altaboli, Libya

S215

ICT in Health and in Active Ageing - II
Chair(s): João Barroso, Portugal; Leontios Hadjileontiadis, United Arab Emirates

Care4MyHeart-PSG: A Personalized Serious Game Platform to Empower Phase III Cardiac Rehabilitation of Cardiovascular Disease Patients in UAE
Sofia B. Dias, Portugal; Sofia J. Hadjileontiadou, Greece; Jose A. Diniz, Portugal; Ahsan Khadonker, Leontios Hadjileontiadis, United Arab Emirates

Assisted Caretaking System for Geriatric Home Care
Isabel Barroso, Salviano Soares, Vitor Rodrigues, Sérgio Silva, Maria João Monteiro, Diogo Duarte, Conceição Rainho, António Valente, Portugal

User-centered Implementation of Rehabilitation Exercising on an Assistive Robotic Platform
Xanthi S. Papageorgiou, George Tsampounaris, Alexandra Karavasili, Eleni Efthimiou, Stavroula-Evita Fotinea, Anna Vacalopoulou, Panagiotis Karioris, Fotini Koureta, Despina Alexopoulou, Dimitris Dimou, Greece

Dementia: I Am Physically Fading. Can Virtual Reality Help? Physical Training for People with Dementia in Confined Mental Health Units
Maria Matsangidou, Eirini Schiza, Marios Hadjjaros, Kleantchis C. Neokleous, Marios Avraamides, Ersi Papayianni, Fotos Frangoudes, Constantinos Pattichis, Cyprus

A Head Mouse alternative solution proposal for people with motor impairments: design and usability assessment study
Hasan Zengin, Turkey; Arsénio Reis, João Barroso, Tânia Rocha, Portugal

VAMR S216

VAMR in Industry - I
Chair(s): Vasilis Kouroumalis, Greece

Augmented Instructions: Analysis of Performance and Efficiency of Assembly Tasks
Eleanor Smith, Gordon Semple, Dorothy Evans, Kenneth McRae, Paul Blackwell, United Kingdom

Reporting Strategy for VR Design Reviews
Martin Gebert, Maximilian Peter Dammann, Bernhard Saske, Wolfgang Steger, Ralph Stelzer, Germany

Guerilla Evaluation of Truck HMI with VR
Frederik Diederichs, Friedrich Niehaus, Lena Hees, Germany

Safety in a Human Robot Interactive: Application to Haptic Perception
Vamsi Krishna Guda, Damien Chablat, Christine Chevallereau, France

S217

User Experience in VAMR - III
Chair(s): Ahlem Assila, France

FingerTac – A Wearable Tactile Thimble for Mobile Haptic Augmented Reality Applications
Thomas Hulin, Michael Rothhammer, Isabel Tannert, Suraj Subramanyam Giri, Benedikt Pleintinger, Harsimran Singh, Bernhard Weber, Christian Ott, Germany

Investigating the Influence of Optical Stimuli on Human Decision Making in Dynamic VR-Environments
Stefanie Fröh, Manuel Heinzig, Robert Manthey, Christian Roschke, Rico Thomanek, Marc Ritter, Germany

Emergent Behavior of Therapists in Virtual Reality Rehabilitation of Acquired Brain Injury
Henrik Sæderup, Flaviu Vreme, Hans Pauli Arnoldson, Alexandru Diaconu, Michael Boelstoft Holte, Denmark

Perceived Speed, Frustration and Enjoyment of Interactive and Passive Loading Scenarios in Virtual Reality
David Heidrich, Annika Wohlan, Meike Schaller, Germany

Towards the Specification of an Integrated Measurement Model for Evaluating VR Cybersickness in Real Time
Ahlem Assila, France; Taisa Guidini Goncalves, Brazil; Amira Dhoubil, David Baudry, Vincent Havarid, France

Mixed Mock-up Meets ErgoCAM: Feasibility Study for Prospective Ergonomic Evaluation of Manual Assembly Processes in Real-Time Using Augmented Reality and Markerless Posture Analysis
Tobias Dreesbach, Alexander Mertens, Tobias Hellig, Matthias Pretzlaff, Verena Nitsch, Christopher Brandl, Germany

| CCD S218 | SCSM S219 | AC S220 | S221 |
|--|--|--|--|
| <p>S218: Evaluation of Sense in Architecture and Interior Design Chair(s): Wei Lin, Taiwan</p> | <p>Customer eXperience and Behavior - II Chair(s): Cristian Rusu, <i>Chile</i></p> | <p>S220: Adaptation Strategies and Adaptation Management Chair(s): Sven Fuchs, <i>Germany</i></p> | <p>Augmented Cognition through Immersive User Experiences - II Chair(s): Ayoung Suh, Christian Wagner, <i>Hong Kong</i></p> |
| <p>Effectiveness of the Immersive Virtual Reality in Upper Extremity Rehabilitation Lan-Ling Huang, Mei-Hsiang Chen, <i>Taiwan</i></p> | <p>Proposal of the Elderly Supporting System based on the Perspective of Local Community in Japan Ayaka Ito, Masaya Ando, Hitoshi Uchida, Muneo Takemoto, Yuichi Murai, <i>Japan</i></p> | <p>Adapting Interaction to Address Critical User States of High Workload and Incorrect Attentional Focus – an Evaluation of Five Adaptation Strategies Sven Fuchs, Stephanie Hochgeschurz, Alina Schmitz-Hübsch, Lerke Thiele, <i>Germany</i></p> | <p>Non-Monotonic Bias-Based Reasoning Under Uncertainty Monte Hancock, <i>United States</i></p> |
| <p>Concerning the Perspective of Sound Insulation on Approaches of Interior design Wei Lin, Hsuan Lin, Zih Yu Huang, Yun Hsuan Lee, <i>Taiwan</i></p> | <p>Understanding Open Collaboration of Wikipedia Good Articles Huichen Chou, Donghui Lin, Toru Ishida, Naomi Yamashita, <i>Japan</i></p> | <p>User Evaluation of Affective Dynamic Difficulty Adjustment based on Physiological Deep Learning Guillaume Chanel, Phil Lopes, <i>Switzerland</i></p> | <p>The Expertise Level Ron Fulbright, <i>United States</i></p> |
| <p>Transforming Chinese Cultural Features into Modern Product Design Yukun Hu, Suihuai Yu, Yafang Ju, Dengkai Chen, Weiwei Wang, Yanpu Yang, Chen Chen, <i>P.R. China</i></p> | <p>A Personalized and Context Aware Music Recommendation System Champika H.P.D. Wishwanath, Supuni N. Weerasinghe, Kanishka H. Illandara, A.S.T.M.R.D.S. Kadigamuwa, Supunmali Ahangama, <i>Sri Lanka</i></p> | <p>The Case for Cognitive-Affective Architectures as Affective User Models in Behavioral Health Technologies Eva Hudlicka, <i>United States</i></p> | <p>Synthetic Expertise Ron Fulbright, Grover Walters, <i>United States</i></p> |
| <p>A preliminary study on the game design of Pokémon GO and its effect on parent-child interaction Hsuan Lin, <i>Taiwan</i>; Kuo-Liang Huang, <i>P.R. China</i>; Wei Lin, <i>Taiwan</i></p> | <p>AMISA: A Pilot Study of an Emotional Supporting Device Between Friends Over Long-Distance Yuanyuan Bian, <i>P.R. China</i>; Teng-Wen Chang, <i>Taiwan</i></p> | <p>Challenges and Prospects of Emotional State Diagnosis in Command and Control Environments Alina Schmitz-Hübsch, Sven Fuchs, <i>Germany</i></p> | <p>Perceived Restorativeness and Meditation Depth for Virtual Reality supported Mindfulness Interventions Mark R. Costa, Dessa Bergen-Cico, Rachel Razza, Leanne Hirshfield, Qiu Wang, <i>United States</i></p> |
| <p>Research on GP-GC Intergeneration Affective Interaction Product Design: Analysis from Chinese Social Perspective to Value Proposition Kuo-Liang Huang, <i>P.R. China</i>; Hsuan Lin, <i>Taiwan</i></p> | <p>Social Behaviour Understanding using Deep Neural Networks: Development of Social Intelligence Systems Ethan Lim Ding Feng, Zhi-Wei Neo, Aaron William De Silva, Kellie Sim, Hong-Ray Tan, <i>Singapore</i>; Thi-Thanh Nguyen, <i>Viet Nam</i>; Karen Wei Ling Koh, Wenru Wang, Hoang D. Nguyen, <i>Singapore</i></p> | <p>Enhancing Reality: Adaptation Strategies for AR in the Field Konrad Bielecki, Daniel López Hernández, Marten Bloch, Marcel Baltzer, Robin Schmidt, Joscha Wasser, Frank Flemisch, <i>Germany</i></p> | <p>Producing an Immersive Experience using Human-Robot Interaction Stimuli Thy Vo, Joseph B. Lyons, <i>United States</i></p> |

Cross-Cultural Design

Social Computing and Social Media

Augmented Cognition

WEDNESDAY 13:30 - 15:30

Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management

DHM S222

Healthcare Improvements
Chair(s): Vincent G. Duffy, *United States*

Use of Technologies for Supporting Dementia Care
Noriaki Kuwahara, Kiyoshi Yasuda, *Japan*

Towards Practical Use of Bedside Sensing/ Voice-Calling System for Preventing Falls
Noriyuki Miyake, Kazumi Kumagai, Seiki Tokunaga, Mihoko Otake-Matsuura, *Japan*

A Personal Health-tracking System Focused on Social Communication for Motivation
Pengyuan Li, *P.R. China*; Jiro Tanaka, *Japan*

An Ergonomic Solution for Hand Rehabilitation Product Design for Stroke Patients
Jing Luo, Yan Luximon, *Hong Kong*; Wen Zhan, *P.R. China*; Xiaoyang Chen, *Hong Kong*

Wireless Aerobic Exercise Monitoring System based on Multimodal Sensors
Xiang-yu Liu, Xing-wei Wang, Hai-qiang Duan, Guang-hao Li, Meiyu Zhou, *P.R. China*

DUXU S223

Urban UX and Design: The Language of (Smart) Cities
Chair(s): Pavel Farkas, *Czech Republic*

Appropriation, Design and User Experience in Public Spaces as a Part of the Language of the City
Pavel Farkas, *Czech Republic*

Smart City through Design: Preparation of a New Wayfinding System in Prague
Petr Stepanek, *Czech Republic*

Approaching urban experience through rhythm analysis
Michal Smrčina, *Czech Republic*

Interfacing the City - Media Theory Approach to Cognitive Mapping of the Smart City through Urban Interfaces
Jakub Ferenc, *Czech Republic*

Designing Human-Centered Interactions for Smart Environments based on Heterogeneous, Interrelated Systems: A User Research method for the "Age of Services" (URSERVe)
Alexandra Matz, Clarissa Götz, *Germany*

Involving Users in Sound Design
Frederik Moesgaard, Lasse Hulgaard, Mads Bødker, *Denmark*

S224

Understanding User Diversity in Emerging Digital Platforms
Chair(s): Kerem Rizvanoğlu, *Turkey*

Transforming Diagrams' Semantics to Text for Visually Impaired
Charlie Cross, Deniz Cetinkaya, Huseyin Dogan, *United Kingdom*

Humanistic Co-Design for Specific Learning Difficulties Using Scenario-based Personas: Tangible Arabic Alphabet Blocks for Dyslexia
Mawaddah AlSabban, Sundus Alorij, Ghadeer Alshamrani, *Saudi Arabia*; Ohoud Alharbi, *Canada*

Evaluating One-Handed Usability of Phablets: A Comparative Study Into Turkey's Leading Delivery Applications
Emre Kizilkaya, Kerem Rizvanoğlu, *Turkey*

Exploring Food Literacy through the Use of Mobile Apps in the era of Human-Food Interaction: Kliktag Case
Kübra Sultan Yüzüncüyil, Kerem Rizvanoğlu, Özgürol Öztürk, *Turkey*

S225

Facilitating Individual Creativity, Understanding Team Design Process, and Developing Advanced Tools and Methods - III
Chair(s): Wei Liu, *P.R. China*

Designing a Multimodal Emotional Interface in the context of Negotiation
KFabian Pelzl, Klaus Diepold, Germany; Jan Auernhammer, *United States*

A Product/Process Model Approach to Formalize Collaborative User Experience Design
Daniel Kerpen, Jan Conrad, Dieter Wallach, *Germany*

Understanding Engagement in the Workplace: Studying Operators in Chinese Traffic Control Rooms
Linyi Jin, Val Mitchell, Andrew May, *United Kingdom*

AI-driven Tangible Interactive Products for Introducing Intellectual Property (IP) Concepts for Youth: The IP4Youth Product Designs
Nasser ALRuweis, Shatha Aldhuayan, Ruba Alfadhel, Anas Hashim, Areej Al-Wabil, *Saudi Arabia*

palmScape: Calm and Pleasant Vibrotactile Signals
Sang-Won Shim, *Korea*; Hong Z Tan, *United States*

WEDNESDAY 13:30 - 15:30

DUXU S226

Discussions on UX Design Methods and Practices - III

Chair(s): To be announced

Online Interactive Chart Choosers for Novice Visual Designers: Assistance and Restriction

Ching-I Chen, Meng-Cong Zheng, Taiwan

The Impact of Expectation and Disconfirmation on User Experience and Behavior Intention

Xiaorui Wang, Ronggang Zhou, Renqian Zhang, P.R. China

User Experience: How to Drive Innovation on the Fuzzy Front End

Jingran He, Ting Han, Dian Zhu, Boyang Fan, Chufan Jin, Zishan Song, P.R. China

The Designer's Creativity Demand&Influence Factor Model Based on Grounded Theory

Ming-hong Chai, Wei Sun, Xin Lei, P.R. China

A Comparative Research on Designer and Customer Emotional Preference Models of New Product Development

Tianxiong Wang, Liu Yang, Xian Gao, Yuxuan Jin, P.R. China

DAPI S227

Distributed, Ambient and Pervasive Interactions in Smart Industries

Chair(s): Carsten Röcker, Sven Tackenberg, Sebastian Büttner, Germany

Teaching by Demonstrating – How Smart Assistive Systems Can Learn from Users

Sebastian Büttner, Andreas Peda, Mario Heinz, Carsten Röcker, Germany

A Testbed for Rapid Design and Evaluation of VR Navigation Techniques for Industrial Applications

Jendrik Bulk, Volker Paelke, Germany

Making Object Detection Available to Everyone - A Hardware Prototype for Semi-automatic Synthetic Data Generation

Andreas Besginow, Sebastian Büttner, Carsten Röcker, Germany

Simulation Model for Mapping the Causes and Effects of Human Error in Product Development

Sven Tackenberg, Sönke Duckwitz, Germany

Exploring Users' Eye Movements When Using Projection-based Assembly Assistive Systems

Mario Heinz, Sebastian Büttner, Carsten Röcker, Germany

HCIBGO S228

HCI Issues in Digital Fashion Communication - II

Chair(s): Lorenzo Cantoni, Nadzeya Kalbaska, Switzerland

FashionTouch in E-commerce: An Exploratory Study of Surface Haptic Interaction Experiences

Michela Ornati, Lorenzo Cantoni, Switzerland

Digital User Behavior in Fashion E-Commerce - A Business Model Comparative Study

Patricia SanMiguel, Teresa Sadaba, Spain

The Effects of Cookie Notices on Perceived Privacy and Trust in E-Commerce

Jan Schiefermair, Martin Stabauer, Austria

The Effect of Queuing Technology on Customer Experience in Physical Retail Environments

Gabriele Obermeier, Robert Zimmermann, Andreas Auinger, Austria

LCT S229

Interactive Learning Ecosystems - III

Chair(s): Francisco J. García-Peñalvo, David Fonseca, Spain

Prototyping a Touch-Optimized Modeling Tool for Co-Located and Inverted Classroom Group Modeling Scenarios

Marcel Schmittchen, Arlind Avdullahu, Robin Beermann, Germany

Facilitating Access to the Role Models of Women in STEM: W-STEM Mobile App

Alicia García-Holgado, Sonia Verdugo-Castro, Mª Cruz Sánchez-Gómez, Francisco J. García-Peñalvo, Spain

Global Impact of Local Educational Innovation

María Luisa Sein-Echaluce, Ángel Fidalgo-Blanco, Francisco J. García-Peñalvo, Spain; Ana María Balbín, Peru

Sign Language Interactive Learning - Measuring the User Engagement

Pietro Battistoni, Marianna Di Gregorio, Marco Romano, Monica Sebillo, Giuliana Vitiello, Giandomenico Solimando, Italy

Exchanging Challenge based Learning Experiences in the Context of RoboSTEAM Erasmus+ Project

Miguel Á. Conde, Francisco Jesús Rodríguez-Sedano, Camino Fernández-Llamas, Spain; Manuel Jesus, Maria-João Ramos, Portugal; Susana Celis-Tena, Spain; José Gonçalves, Portugal; Ilkka Jormanainen, Finland; Francisco J. García-Peñalvo, Spain

Distributed, Ambient and Pervasive Interactions

HCI in Business, Government and Organizations

Learning and Collaboration Technologies

ITAP S230

Being Connected at Home – Making Use of Digital Devices in Later Life
Chair(s): Eugène Loos, *Netherlands*

Smartwatch Use among Older Adults: Findings from Two Large Surveys
Alexander Seifert, *Switzerland*

"You Don't Need Instagram, it's for Young People": Intergenerational Relationships and ICTs Learning Among Older Adults
Simone Carlo, Francesco Bonifacio, *Italy*

Consuming Fake News: A Matter of Age? The Perception of Political Fake News Stories in Facebook Ads
Eugène Loos, Jordy Nijenhuis, *Netherlands*

Methods Matter: Assessment of the Characteristics of a Sample to Analyze Digital Practices and Social Connectedness in Later Life
Mireia Fernández-Ardèvol, Andrea Rosales, Francisca Morey, *Spain*

Digital Mobile Technology Enhancing Social Connectedness among Older Adults in Sweden
Sanna Kuoppamäki, Britt Östlund, *Sweden*

Using Academic Work Places to Involve Older People in the Design of Digital Applications - Presentation of a Methodological Framework to Advance Co-Design in Later life
Britt Östlund, Björn Fischer, *Sweden*; Barbara Marshall, Nicole Dalmer, *Canada*; Mireia Fernández-Ardèvol, Andrea Garcia-Santesmases, Daniel Lopez, *Spain*; Eugène Loos, *Netherlands*; Fangyuan Chang, Xin Chen, *Sweden*; Louis Neven, Alexander Peine, *Netherlands*; Andrea Rosales, *Spain*; Sanna Kuoppamäki, *Sweden*

S231

Human Factors and Design - I
Chair(s): Wang-Chin Tsai, *Taiwan*

A Prototype of Patient Decision Aid for Treating Obstructive Sleep Apnea
Hsin-Chang Lo, Mei-Chen Yang, Fu-Nien Lin, *Taiwan*

A Study of the Rubber Mat Product Design for Electric Scooter
An-Jen Yang, Jui-Hung Cheng, Yu-Shi Huang, *Taiwan*

Understanding Continuous Wearable Technology Use Behavior for Fitness and Self-Health Management Among Middle-Aged and Elderly People
Wen-Tsung Ku, Hui-Min Lai, Pi-Jung Hsieh, *Taiwan*

A study of Green Printing Technology Application for Product Value-added Design
Yu-Shi Huang, Jui-Hung Cheng, An-Jen Yang, *Taiwan*

Application of Fuzzy Decision Model Selection of Product in Human Factors Design
Hsin-Hung Lin, Jui-Hung Cheng, *Taiwan*

S232

Multimodal Interaction for the Elderly
Chair(s): To be announced

Exploring the Contextual Relationship of Narrating Life Stories by Elderly People
Kuanyu Fan, Peifen Wu, *Taiwan*

Multimodal Coexistence Environment Design to Assist User Testing and Iterative Design of HiGame Emotional Interaction Design for Elderly
Ji Rong Rachel Lu, Teng-Wen Chang, Yi-Sin Wu, Chun-Yen Chen, *Taiwan*

Acceptance Level of Older Chinese People towards Video Shooting Games
Rita W.L. Yu, Wai Hung Yuen, *Hong Kong*; Lu Peng, *P.R. China*; Alan H.S. Chan, *Hong Kong*

Exploring the Feasibility of the Elderly in the Space Guidance of Tactile Feedback Technology
Shuo-Fang Liu, *Taiwan*; Shi-Yu Wang, *P.R. China*; Ching-Fen Chang, *Taiwan*

The Effect of Sensory Feedback on Time Perception of Interface Indicator from Age Difference
Shuo-Fang Liu, Yu-Wei Tseng, Ching-Fen Chang, *Taiwan*

MobiTAS S233

New Digital Mobility - Changes in Passenger Travel Behavior and Travel Preferences
Chair(s): Ulrike Stopka, *Germany*

Strategies for smart service prototypes - Implications for the requirements elicitation in the early development stages
Tobias Wienken, Heidi Krömker, *Germany*

Design Guidelines for the Simulation of the Usage Context "Station" in VR Environment
Regina Koreng, *Germany*

Acceptance and Diffusion of Services based on Secure Elements in Smartphones - Study Design and First Results of the Pretests
Andreas Kreisel, Gertraud Schäfer, Ulrike Stopka, *Germany*

Multimodal Mobility Packages – Concepts and Methodological Design Approaches
Ulrike Stopka, *Germany*

Mobility-as-a-Service: Tentative on Users, Use and Effects
I.C. MariAnne Karlsson, *Sweden*

MobiTAS S234

HCI Issues and Assistive Systems for Users with Special Needs in Mobility

Chair(s): Christophe Kolski, Sophie Lepreux, *France*

Ontology for Mobility of People with Intellectual Disability: Building a basis of Definitions for the Development of Navigation aid Systems

Laurie Letalle, Aymen Lakehal, Hursula Mengue-Topio, Johann Saint-Mars, Christophe Kolski, Sophie Lepreux, Françoise Anceaux, *France*

Gender- and Diversity-oriented Design of Social Media for Participation in Public Transport

Cathleen Schöne, Tobias Steinert, Heidi Krömker, *Germany*

A Tactile Interface to Steer Power Wheelchairs for People Suffering from Neuromuscular Diseases

Youssef Guedira, Delphine Dervin, Pierre-Eric Brohm, René Farcy, Yacine Bellik, *France*

Assistive Systems for Special Needs in Mobility in the Smart City

Chuantao Yin, *P.R. China*; Bertrand David, René Chalon, *France*; Hao Sheng, *P.R. China*

Training Pedestrian Safety Skills in Youth with Intellectual Disabilities Using Fully Immersive Virtual Reality - A Feasibility Study

Robin Cherix, Francesco Carrino, Geneviève Piérart, Omar Abou Khaled, Elena Mugellini, Dominique Wunderle, *Switzerland*

Adaptive Instructional Systems

AI S235

Learner State Diagnostics for Adaptive Instruction

Chair(s): Jessica Schwarz, *Germany*

EEG Covariance-based Estimation of Cooperative States in Teammates

Raphaëlle N. Roy, Kevin J. Verdière, Frédéric Dehais, *France*

From "Knowing What" to "Knowing When": Exploring a Concept of Situation Awareness Synchrony for Evaluating SA Dynamics in Teams

Baptiste Prébot, *France*; Jessica Schwarz, Sven Fuchs, *Germany*; Bernard Claverie, *France*

On the Importance of Adaptive Operator Training in Human-Swarm Interaction

Jonas D. Hasbach, Thomas E.F. Witte, Maren Bennewitz, *Germany*

Pilot State Monitoring for Cursus Recommendation

Maëlle Kopf, Daniel Lafond, Jean-Francois Gagnon, *Canada*

The Mental Machine: Classifying Mental Workload State from Unobtrusive Heart Rate-measures using Machine Learning

Roderic H.L. Hillege, Julia Lo, Christian P. Janssen, Nico Romeijn, *Netherlands*

Experimental evaluation of heart-based workload measures as related to their suitability for real-time applications

Dennis Mund, Axel Schulte, *Germany*

Design, Operation and Evaluation of Mobile Communications

MOBILE S236

Mobile Devices Usability

Chair(s): June Wei, *United States*

The Impact of Blockchain on Collaborative Product Innovation of Manufacturing Supply Chain

Caihong Liu, *P.R. China*; Hannah Ji, June Wei, *United States*

A Direct Transaction Model for Energy Blockchain Mobile Information System Based on Hybrid Quotation Strategy

Wei Hu, *P.R. China*; Li Huanhao, *Chile*

Wearable Services Adoption Study from a Perspective of Usability

Zhongwei Gu, *P.R. China*; June Wei, *United States*

OEExplore an Evolution of Physical Education Based on Virtual Reality Lab for Traditional Ethnic Minorities' Sports

Wenmei Dong, Jingyan Yu, *P.R. China*

Characteristics of Online Transaction Dispute Mediation Cases in Mobile Electronic Commerce

Lifan Yang, Jingjing Xing, *P.R. China*

Culture and Computing

C&C S237

Intangible Cultural Heritage as Immersive Experience - II

Chair(s): Elke Reinhuber, *Singapore*

Mixed Reality and Volumetric Video in Cultural Heritage: Expert Opinions on Augmented and Virtual Reality

Néill O'Dwyer, Gareth W. Young, Nicholas Johnson, Emin Zerman, Aljosa Smolic, *Ireland*

Archiving the Memory of the Holocaust

Ernst Feiler, Frank Govaere, Philipp Grieb, Simon Purk, Ralf Schäfer, Oliver Schreer, *Germany*

A Robot in the Library

Evgenios Vlachos, Anne Faber Hansen, Jakob Povl Holck, *Denmark*

Semantics-driven Conversational Interfaces for Museum Chatbots

Dimitris Spiliotopoulos, Konstantinos Kotis, Costas Vassilakis, Dionisis Margaris, *Greece*

'Talking' Triples to Museum Chatbots

Savvas Varytimiadis, Konstantinos Kotis, Dimitris Spiliotopoulos, Costas Vassilakis, Dionisis Margaris, *Greece*

WEDNESDAY 13:30 - 15:30



AI-HCI s238

Artificial Intelligence in HCI

AI for Well-being

Chair(s): Alice Baird, United Kingdom

Towards Intelligent Technology in Art Therapy Contexts

Woud AlSadoun, Nujood Alwahaibi, Lean Altwayan, Saudi Arabia

AI Mobility Solutions for an Active Ageing Society - Introducing Aesthetic Affordances in the Design of Smart Wheelchairs

Setsu Ito, Italy; Shinobu Ito, Japan; Irina Suteu, Italy

Interaction with the Soundscape: Exploring Emotional Audio Generation for Improved Individual Wellbeing

VAlice Baird, United Kingdom; Meishu Song, Björn Schuller, Germany

The Power of Augmented Reality and Artificial Intelligence During the Covid-19 Outbreak

Chutisant Kerdvibulvech, Thailand; Liming (Luke) Chen, United Kingdom

NOTES

Large empty area for taking notes during the session.

WEDNESDAY 13:30 - 15:30

HCI S239

Smart User Interfaces for Accessibility
Chair(s): Kening Zhu, *Hong Kong*

Designing for experiences in blended reality environments for people with dementia
Shital Desai, Deborah Fels, Arlene Astell, *Canada*

Toward Inclusive Learning: Designing and Evaluating Tangible Programming Blocks for Visually Impaired Students
Zhiyi Rong, Ngo Fung Chan, *Hong Kong*; Taizhou Chen, *P.R. China*; Kening Zhu, *Hong Kong*

FingerTalkie: Designing A Low-cost Finger-worn Device for Interactive Audio Labeling of Tactile Diagrams
Arshad Nasser, *Hong Kong*; Taizhou Chen, *Can Liu, P.R. China*; Kening Zhu, *Hong Kong*; P. V. M. Rao, *India*

VR: Time Machine
Doros Polydorou, *Cyprus*; Oded Ben-Tal, *United Kingdom*; Atser Damsma, Nadine Schlichting, *Netherlands*

S240

User Experience Assessment Methods and Case Studies - I
Chair(s): To be announced

Evaluating the Usability and the Accessibility of Saudi E-government Websites
Nourah Aloboud, Raghad AlOtaibi, Amani Alqahtani, *Saudi Arabia*

Emotional responses to health data visualization
Chloe Lourdais, Emilie Poirson, *France*; Liang Ma, *P.R. China*

The Social Acceptability of Peripheral Interaction with 3D Gestures in a Simulated Setting
Sara Nielsen, Lucca Julie Nellemann, Lars Bo Larsen, Kashmiri Stec, *Denmark*

Exploring Pointer Assisted Reading (PAR): Using Mouse Movements to Analyze Web Users' Reading Behaviors and Patterns
Ilan Kirsh, *Israel*; Mike Joy, *United Kingdom*

Introducing Mobile Device-Based Interactions to Users: An Investigation of Onboarding Tutorials
Mandy Korzetz, Romina Kühn, Lukas Büschel, Franz-Wilhelm Schumann, Uwe Aßmann, Thomas Schlegel, *Germany*

HIMI S241

Human Performance in Complex Systems
Chair(s): Kim-Phuong Vu, Gabriella M. Hancock, *United States*

Environmental Control Units for Inpatient Care at Veterans Affairs Spinal Cord Injury Centers: Heuristic Evaluation & Design Recommendations
Gabriella M. Hancock, Sam Anvari, Matthew T. Nare, Nicole B. Mok, Aram Ayvazyan, Kelsey M. McCoy, Xiaolu Bai, Gregory P. Mather, Amanda S. McBride, Natalia Morales, *United States*

UX/UI Research on ECU Systems for Inpatient Care at VA Hospitals: An Overview of an On-going Research Program
Sam Anvari, Xiaolu Bai, Kelsey M. McCoy, Aram Ayvazyan, Nicole B. Mok, Matthew T. Nare, Gregory P. Mather, Natalia Morales, Amanda S. McBride, Gabriella M. Hancock, *United States*

Discriminative Model for Identifying Motion Primitives Based on Virtual Reality-Based IADL
Yasuhiro Iwashita, Takehiko Yamaguchi, *Japan*; Tania Giovannetti, *United States*; Maiko Sakamoto, Hayato Ohwada, *Japan*

One of by Map - Two if by See: Implications of Dissonant Affordance Structures in Human-Computer Interaction with especial Reference to the Case of Driver-Automated Vehicle Relationships
Peter Hancock, Gabriella M. Hancock, *United States*

EPCE S242

Human Factors and Ergonomics in Safety-critical Systems - II
Chair(s): Alexandra Fernandes, *Norway*

Exploring the Effects of Large Screen Overview Displays in a Nuclear Control Room Setting
Alexandra Fernandes, Alf Ove Braseth, Robert McDonald, Maren Eitrheim, *Norway*

Promoting Operational Readiness through Procedures in Nuclear Domain
Jari Laarni, Jatta Tomminen, Marja Liinasuo, Satu Pakarinen, Kristian Lukander, *Finland*

Modeling Distributed Situational Awareness to Improve Handling Emergency Calls in Operation Centres
Marcel Saager, Marie-Christin Harre, *Germany*

Investigating the Effect of Conflicting Goals and Transparency on Trust and Collaboration in Multi-Team Systems
Verena Vogelpohl, Carmen Bruder, Jana Schadow, Dirk Schulze Kissing, *Germany*

Operator Actions Outside the Control Room: A Field Study
Alexandra Fernandes, Rossella Bisio, Claire Blackett, *Norway*

Human-Computer Interaction

Human Interface and the Management of Information

Engineering Psychology and Cognitive Ergonomics

THURSDAY 14:00 - 16:00

Universal Access in Human-Computer Interaction

UAHCI S243

Recent Developments in Technologies and Techniques for Universal Accessibility - I

Chair(s): Frode Eika Sandnes, Terje Gjoesaeter, *Norway*

QB-Gest: Qwerty Bimanual Gestural Input for Eyes-free Smartphone Text Input

Linghui Ye, Frode Eika Sandnes, *Norway*; I. Scott MacKenzie, *Canada*

Towards Universal Accessibility on the Web: Do Grammar Checking Tools Improve Text Readability?

JHitesh Mohan Kaushik, Evelyn Eika, Frode Eika Sandnes, *Norway*

Impact of Sentence length on the Readability of Web for Screen Reader Users

Bam Bahadur Kadayat, *Nepal*; Evelyn Eika, *Norway*

Cultural Inclusion and Access to Technology: Bottom-up Perspectives on Copyright Law and Policy in Norway

G. Anthony Giannoumis, *Norway*; Wondwossen Mulualem Beyene, *Ethiopia*

Open Government Data through the Lens of Universal Design

Mexhid Ferati, Fisman Dalipi, Zenun Kastrati, *Sweden*

Evaluating Hands-on and Hands-free Input Methods for a Simple Game

Mehedi Hassan, *Canada*; John Magee, *United States*; I. Scott MacKenzie, *Canada*

S244

Technology for Inclusion and Participation (TIP) - I

Chair(s): Ingo Bosse, Christoph Kaletka, Susanne Dirks, *Germany*

The Information Repertoire of People with Disabilities

Annegret Haage, *Germany*

Accessible Learning Management Systems in Higher Education

Leevke Wilkens, Christian Bühler, Ingo Bosse, *Germany*

I Can't Do It, They Say! – Perceived Stigmatization Experiences of People with Intellectual Disabilities when Using and Accessing the Internet

Vanessa N. Heitplatz, Christian Bühler, Matthias R. Hastall, *Germany*

Persona Design in Participatory Agile Software Development

Susanne Dirks, *Germany*

Contribution of Clinical Data to the Design of Assistive Systems

Frédéric Vella, Nadine Vigouroux, Rozenn Baudet, Antonio Serpa, Philippe Truillet, Xavier Carrau, Jean-François Camps, Caroline Mercardier, Charline Calmels, Karine Gigaud, Victoria Fourgous, Mélodie Blanchard, *France*

CCD S245

HCI Expertise in Health-Related Products and Services

Chair(s): Runting Zhong, *P.R. China*

Chinese Pain Descriptors Used by Medical Personnel: A Case Study in Beijing

Pei-Luen Patrick Rau, Zhi Guo, Runting Zhong, Soukhi Kim, *P.R. China*

A framework of real-time stress monitoring and intervention system

Peixian Lu, Wei Zhang, Liang Ma, Qichao Zhao, *P.R. China*

Can Smart Voice Assistant Induce Social Facilitation Effect? A Preliminary Study

Na Liu, Quanlin Pu, *P.R. China*

Development of Health Care System Based on Smart Clothes

Pin-Chieh Huang, Chung-Chih Lin, Hisang-Jen Hsieh, Wei-Chia Chen, Ho-Huan Chiang, *Taiwan*

S246

Cross-Cultural Management and Decision Making

Chair(s): Ta-Ping (Robert) Lu, Pin-Hsuan Chen, *P.R. China*

Experimental Analysis of Cultural Factors on Trust in Global Supply Chain Management

Fansheng Zhou, Pin-Hsuan Chen, Ta-Ping (Robert) Lu, Pei-Luen Patrick Rau, *P.R. China*

The Influence of Chinese-English Bilingualism on Rationality in Decision Making Behaviors

Mostafa Moazami, Nan Qie, Pei-Luen Patrick Rau, *P.R. China*

Evaluating trust, trustworthiness and bullwhip effect: A three-echelon supply chain interactive experiment

Pin-Hsuan Chen, Pei-Luen Patrick Rau, *P.R. China*

CIAM: A new assessment model to measure culture's influence on websites

Surbhi Pratap, Jyoti Kumar, *India*

Cognitive and computational aspects of intercultural communication in human-computer interaction

Marcel Pikhart, *Czech Republic*

How the Linguistic Context Influences the Decision-Making process of bilingual individuals with a comparison between Eastern and Western languages

Giorgio Manenti, *Italy*; Jean-Raphaël Eid, *France*; Abdul Qadeer Khoso, *Pakistan*; Marius Julian Vogel, *Switzerland*; Md Redwan Ahmed Reyadh, *Bangladesh*; Victor Lopez Perez, *Mexico*

Cross-Cultural Design

THURSDAY 14:00 - 16:00

CCD S247

Design for Engagement and Communication - II
Chair(s): Yuan-Chi Tseng, *Taiwan*

Investigating Culture as a Precedent Factor for Dual Social Network Site Use and Social Capital Development
Chien-Wen (Tina) Yuan, *Taiwan*

Cultural Engagement and Interactive Communication: A Study on the Implementation of New Media on Museum's Digital Interpretations
Chih-Yung Chiu, Deng-Teng Shih, *Taiwan*

mHealth strategies to promote uptake and adherence to PrEP: A systematic review
Morgan LaBelle, *Canada*; Carol Strong, Yuan-Chi Tseng, *Taiwan*

Cultural Discourse in User Interface Design: Investigating Characteristics of Communicators in Microsoft Word
Chunyan Wang, *P.R. China*; Xiaojun Yuan, *United States*

How Design with Intent Cards Facilitate Behavioral Design Ideation for Humanities, Design, and Engineering Students
Yuan-Chi Tseng, *Taiwan*

S248

Designing the Future: Innovative Theories, Tools, and Practices - III
Chair(s): Zhiyong Fu, *P.R. China*

Fostering Cross-cultural Research by Cross-cultural Student Teams: A Case Study Related to Kawaii (Cute) Robot Design
David Berque, Hiroko Chiba, *United States*; Michiko Ohkura, Peeraya Sripijan, Midori Sugaya, *Japan*

Neuroergonomics Behind Culture: A Dynamic Causal Modeling (DCM) Study on Emotion
Zach Pugh, Jiali Huang, Kristen Lindquist, Chang S. Nam, *United States*

Exploring Universal and Cultural Preferences for Different Concepts of Autonomous Vehicles' External Communication in China, USA and Germany
Anne-Marie Julie Barthe Wesseling, *Germany*; Ruth Mugge, Elmer Van Grondelle, *Netherlands*; Ina Othersen, *Germany*

Teaching to Find Design Opportunities for Behavior Change Through Causal Layered Analysis
Peter Scupelli, *United States*

Play it my way: Participatory mobile game design with children in rural Nepal
Dev Lamichhane, Janet C. Read, *United Kingdom*

SCSM S249

Social Computing and Social Media

Health and Fitness on Social Media
Chair(s): Aylin Ilhan, Kaja Fietkiewicz, Isabelle Dorsch, *Germany*

Zika Outbreak of 2016: Insights from Twitter
Wasim Ahmed, Peter A. Bath, Laura Sbaffi, *United Kingdom*; Gianluca Demartini, *Australia*

Virtual Fitness Community: Online Behavior on a Croatian Fitness Forum
Kristina Feldvari, Anita Dremel, Snježana Stanarević Katavić, *Croatia*

Users of Fitbit Facebook Groups: A Gender- and Generation-Determined Investigation of their Motivation and Need
Aylin Ilhan, *Germany*

Image Strength and Identity Diffusion as Factors Influencing the Perception of Hospitals by their Facebook Communities
Michael Beier, Sebastian Früh, *Switzerland*

Towards Curtailing Infodemic in the era of COVID-19: A Contextualized Solution for Ethiopia
Elefelious Getachew Belay, Melkamu Beyene, Tibebe Beshah Tesema, Teshome Alemu, Amanuel Negashe, Aminu Mohammed, Mengistu Yilma, Berhan Tassew, Solomon Mekonnen, *Ethiopia*

S250

Data Based Social Signal Processing - III
Chair(s): Hung-Hsuan Huang, Shogo Okada, Ryo Ishii, *Japan*

Using Context to Help Predict Speaker's Emotions in Social Dialogue
Mei Si, *United States*

Analyzing #LasTesis Feminist Movement in Twitter using Topic Models
Sebastian Rodriguez, Hector Allende-Cid, Cristian Gonzalez, Rodrigo Alfaro, Claudio Elortegui, Wenceslao Palma, Pedro Santander, *Chile*

Using Deep Learning to Detect Rumors in Twitter
Eliana Providel Godoy, Marcelo Mendoza, *Chile*

An Exploration of a Social Media Community: The Case of #AcademicTwitter
Lina Gomez-Vasquez, Enilda Romero-Hall, *United States*

Characterizing Anxiety Disorders with Online Social and Interactional Networks
Sarmistha Dutta, Munmun De Choudhury, *United States*

THURSDAY 14:00 - 16:00

Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management

DHM S251

Modern Applications - I
Chair(s): Vincent G. Duffy, *United States*

Fitness Evaluation of Military Helmet Pad
Chia-Chen Kuo, Yu Shiau, Mao-Jiun J. Wang, Jun-Ming Lu, *Taiwan*

Usability Assessment of Augmented Reality-based Pedestrian Navigation Aid
Liu Tang, Jia Zhou, *P.R. China*

A Task Simulation and Ergonomics Analysis Method Based on JACK
Hongjun Xue, Jiayu Chen, Xiaoyan Zhang, *P.R. China*

Evaluating the Effect of Crutch-using on Trunk Muscle Loads
Jing Chang, *P.R. China*; Wenrui Wang, Damien Chablat, Fouad Bennis, *France*

Safety Performance-based Risk Assessment for Aviation Fuel Supply of Civil Aviation
Mingliang Chen, Yuan Zhang, Yanqiu Chen, *P.R. China*

Design, User Experience, and Usability

DUXU S252

Art and Science - Digital Media - Public Space - Interaction between People and the Environment
Chair(s): Yanlin Liu, *P.R. China*

Interactive experience art in exhibition
Xueying Niu, Yuelin Liang, *P.R. China*

Research upon the Relativity between Digital Media and Tourism
Wei Feng, Peng Wang, *P.R. China*

Experience and Design of Rural Cultural Well-Being in the New Media Age: A Case Study of Shatan Village in China
Yuanyuan Chen, Li Wang, *P.R. China*

A Study on Travel Experience Design Based on the Motivation of Chinese Millennials to Travel Alone
Xi Chen, Linong Dai, *P.R. China*

Human Resource Management in the age of Artificial Intelligence
Xinyu MU, *United States*

S253

Ergonomics in Design - IV
Chair(s): Marcelo M. Soares, *P.R. China*

JigsAR: A Mixed Reality System for Supporting the Assembly of Jigsaw Puzzles
João M.X.N. Teixeira, Pedro J.L. Silva, Júlia D.T. De Souza, Filipe F. Monteiro, Veronica Teichrieb, *Brazil*

Embodied Cognition and Tactile Interaction: A Review on how Multi-sensorimotor Experiences Assisted by 3D Printing can Shape the General Perception of Daily Activities
Vinicius Castilho, Diogo B. Henriques, Walter Correia, Lucas De Melo Souza, Silvio De Barros Melo, *Brazil*

Recommendation Systems and Machine Learning: Mapping the User Experience
Luiz Agner, Barbara Neczyk, Adriano Renzi, *Brazil*

Strateegia.digital: a Platform that Assumes Design as a Strategic Tool
Andre Neves, Silvio Meira, Leonardo Medeiros, Milena Ferraz, Clarissa Soter, Sergio Cavalcanti, Pedro Cavalcanti, Virginia Heimann, *Brazil*

S254

Studies on Mobile Interactions
Chair(s): Shih-Chieh Liao, *Taiwan*

An Observation on the Behavior of Smartphone Addicts at Taipei Mass Rapid Transportation Station
Miao Huang, *P.R. China*; Chien-Hsiung Chen, *Taiwan*

Preliminary Exploration of Interface Design for Senior Citizens: A Study of Smartphone Camera Usage for People above 50
Jiabei Jiang, Weiwei Zhang, Jihong Jeung, *P.R. China*

A Study of Middle-aged User's Acceptance in Mandarin Chinese Font Display on Smart Phones
Shih-Chieh Liao, Chih-Cheng Sun, Shu Hsuan Feng, *Taiwan*; Chi-Hin Choy, *Hong Kong*

Exploring Information Support in Mobile Terminal Guidance in the Context of Medical Service
Wu Yue, Xin Chen, *P.R. China*

Effects of the Chinese Character size, Page Spacing and Scrolling Frequency on Reading Time of Smartphones
Shih-Miao Huang, *Taiwan*

Mobile usability: review, classifications and future directions
Zhao Huang, *P.R. China*

THURSDAY 14:00 - 16:00

DUXU S255

UX Aspects in Product Design

Chair(s): To be announced

The Kansei Images of Blister Packaging Through Tactile Perception

Shang-Ru Yu, Hsi-Jen Chen, *Taiwan*

An Integrated Framework of Product Kansei Decision-Making based on Hesitant Linguistic Fuzzy Term Sets

Yan-pu Yang, Jun-wen Shi, Gang-feng Wang, *P.R. China*

Study on Size Coding Identification of Manual Rotary Knob

Huimin Hu, Junmin Du, Hui Lu, Haoshu Gu, *P.R. China*

Research on servicescape innovation methods based on design thinking

Ruiguang Tan, Jiayi Liu, *P.R. China*

Ergonomics Considerations of Usability Test of UAV Handheld Control Unit

Xu Wu, Guoqiang Sun, Shuang Liu, Lin Ding, Chongchong Miao, Kai An, *P.R. China*

HCIBGO S256

Mixed Methods for Intelligent Data Analysis

Chair(s): I-Chin Wu, *Taiwan*

Exploring Students' Search Behavior and the Effect of Epistemological Beliefs on Contradictory Issues

Yuan-Ho Huang, *Taiwan*

Investigating Patients' Visits to Emergency Departments: A Behavior-Based ICD-9-CM Codes Decision Tree Induction Approach

Yen-Yi Feng, I-Chin Wu, Yu-Ping Ho, *Taiwan*

Identification of Key Factors Affecting Logistics Service Quality of Cross-border E-commerce

Peng Jiang, Hang Jiang, *P.R. China*; Yi-Chung Hu, *Taiwan*; Chongen Liang, Shiyuan Wang, *P.R. China*

Research on Key Factors Affecting College Students' Usage Intention of Green Public Welfare Activity Platform Based on DEMATEL Method

Qi Xu, Jiong Fu, *P.R. China*

Predicting Music Emotion By Using Convolutional Neural Network

Pei-Tse Yang, Shih-Ming Kuang, Chia-Chun Wu, Jia-Lien Hsu, *Taiwan*

Detecting Deceptive Language in Crime Interrogation

Yi-Ying Kao, Po-Han Chen, Chun-Chiao Tzeng, Zi-Yuan Chen, Boaz Shmueli, Lun-Wei Ku, *Taiwan*

S257

HCI in Business and Organizations - II

Chair(s): Fiona Nah, *United States*

Effects of Avatar Cuteness on Users' Perceptions of System Errors in Anthropomorphic Interfaces

Yue Cheng, Lingyun Qiu, Jun Pang, *P.R. China*

Virtual Reality Online Shopping (VROS) Platform

Yu-Chun Huang, Shu-Yun Liu, *Taiwan*

Success Factors in Micro-Celebrity Endorsement: The Role of Informational and Narrative Content in Product Recommendation

Wei Yang, Choon Ling Sia, *Hong Kong*

A Review on Quality of Service and SERVQUAL Model

Zhengyu Shi, Huifang Shang, *P.R. China*

LCT S258

continues...

Human Factors In Smart HCI - I

Chair(s): Nicholas H. Müller, *Germany*

Telepresence Robots and Their Impact on Human-Human Interaction

Lisa Keller, Kevin Pfeffel, Karsten Huffstadt, Nicholas H. Müller, *Germany*

Brain Activation in Virtual Reality for Attention Guidance

Philipp Ulsamer, Kevin Pfeffel, Nicholas H. Müller, *Germany*

Exploiting the Human Factor: Social Engineering Attacks on Cryptocurrency Users

Kristin Weber, Andreas E. Schütz, Tobias Fertig, Nicholas H. Müller, *Germany*

Proactive Smart City Interactions

Madlen Müller-Wuttke, Andreas E. Schütz, Felix Franz, Nicholas H. Müller, *Germany*

Utilizing Context Effects of Banner Ads for Conversion Rate Optimization

Peter Silbermann, Tobias Fertig, Andreas E. Schütz, Nicholas H. Müller, *Germany*

HCI in Business, Government and Organizations

Learning and Collaboration Technologies

THURSDAY 14:00 - 16:00

LCT S259

Interactive Learning Ecosystems - IV

Chair(s): Francisco J. García-Peñalvo, David Fonseca, *Spain*

A Comparative Study of the Application of Lesson Study in Different University Learning Environments

Efraim Centeno, Marian Alaez, David Fonseca, Fidel Fernández-Bernal, Sonja Wogrin, Susana Romero, Ane Ferrán, Maria Alsina, Silvia Necchi, *Spain*

Characterization of Learners from their Learning Activities on a Smart Learning Platform

Alberto Real-Fernández, Rafael Molina-Carmona, Faraón Llorens-Largo, *Spain*

EDUGAME4CITY - A Gamification for Architecture Students - Viability Study Applied to Urban Design

Ernest Redondo, David Fonseca, Mónica Sánchez-Sepúlveda, Héctor Zapata, Isidro Navarro, Lluís Giménez, *Spain*; Miguel Ángel Pérez, *Mexico*

3D Hologram Learning Kit Development for Elementary Education

Youbin Kim, Dong Yeong Lee, *Korea*

Anti-Procrastination Online Tool for Graduate Students Based on The Pomodoro Technique

Kholood Almalki, Omnia Alharbi, Wala'a ALahmadi, Maha Aljohani, *Saudi Arabia*

GAME4CITY - Gamification for Citizens through the Use of Virtual Reality Made Available to the Masses - Viability Study in Two Public Events

Ernest Redondo, Héctor Zapata, Isidro Navarro, David Fonseca, Lluís Giménez, *Spain*; Miguel Ángel Pérez, *Mexico*; Mónica Sánchez-Sepúlveda, *Spain*

ITAP S260

Human Factors and Design - II

Chair(s): Wang-Chin Tsai, *Taiwan*

Does technology work? Older adults' attitudes and difficulties in using computers

Yi-Yin Lin, Lily Chen, *Taiwan*

A Study on Technology Anxiety Among Different Ages and Genders

Yu-Chen Hsieh, Wang-Chin Tsai, Yu-Chi Hsia, *Taiwan*

Practical Implementation of an Innovative Design Aimed at Increasing Enthusiasm for Exercise Among the Elderly

Hui-Jiun Hu, Li-Shu Lu, *Taiwan*

Construction and Evaluation of Situational System for Introducing Interactive Technology into Ecotourism of Active Aging Group

Li-Shu Lu, PeiFen Wu, Guan-Yuan Huan, *Taiwan*

Human Aspects of IT for the Aged Population

HCI-CPT S261

Human Factors Approaches to Cyber Security within Workplaces

Chair(s): Phillip L. Morgan, *United Kingdom*

Human Cyber Risk Management by Security Awareness Professionals: Carrots or Sticks to Drive Behaviour Change?

John M. Blythe, Alan Gray, Emily Collins, *United Kingdom*

Another Week at the Office (AWATO) – an Interactive Serious Game for Threat Modeling

Lauren Ferro, Francesco Sapio, *Italy*

Cyber-risk in Healthcare: Exploring Facilitators and Barriers to Secure Behaviour

Lynne Coventry, Dawn Branley-Bell, Elizabeth Sillence, *United Kingdom*; Sabina Magalini, Pasquale Mari, *Italy*; Aimilia Magkanaraki, Kalliopi Anastasopoulou, *Greece*

Understanding Insider Threat Attacks using Natural Language Processing: Automatically Mapping Organic Narrative Reports to Existing Insider Threat Frameworks

Katie Paxton-Fear, Duncan Hodges, Oliver Buckley, *United Kingdom*

Factors Shaping Information Security Culture in an Internal IT Department

Peter Dornheim, Rüdiger Zarnekow, *Germany*

Development of a Test Battery for Cyber Soldiers

Patrik Lif, Jacob Löfvenberg, Per Wikberg, Ove Jansson, *Sweden*

HCI for Cybersecurity, Privacy and Trust

HCI-Games S262

Recent Advancements in Gaming and HCI - I

Chair(s): Khaldoon Dhou, *United States*; Barbara Caci, *Italy*

Mobile Augmented Reality App for Children with Autism Spectrum Disorder (ASD) to Learn Vocabulary (MARVoc): from the Requirement Gathering to its Initial Evaluation

Kamran Khowaja, Dena Al-Thani, Asma Osman Hassan, *Qatar*; Asadullah Shah, Siti Salwah Salim, *Malaysia*

Can we Predict the Best Gamification Elements for a User based on their Personal Attributes?

Wad Ghaban, Robert Hendley, *United Kingdom*

Non-intrusive Measurement of Player Engagement and Emotions - Real-Time Deep Neural Network Analysis of Facial Expressions during Game Play

Dines Selvig, Henrik Schoenau-Fog, *Denmark*

Personalised Semantic User Interfaces for Games

Owen Sacco, *Malta*

The Interplay Between Artificial Intelligence and Users' Personalities: A New Scenario for Human-Computer Interaction in Gaming

Barbara Caci, *Italy*; Khaldoon Dhou, *United States*

HCI in Games

HCI in Mobility, Transport and Automotive Systems

MobiTAS S263

Human-Systems Integration for Driving Automation Systems - I

Chair(s): Peter Mörtl, *Austria*

Human-Systems Integration for Driving Automation Systems: Holistic Approach for Driver Role Integration and Automation Allocation for European Mobility Needs

Peter Mörtl, *Austria*

Age-related Differences in the Interaction with Advanced Driver Assistance Systems - A Field Study

Norah Neuhuber, Gernot Lechner, Tahir Emre Kalayci, Alexander Stocker, Bettina Kubicek, *Austria*

A fluid-HMI approach for Haptic Steering Shared Control for the HADRIAN Project

Myriam E. Vaca-Recalde, Mauricio Marcano, Joseba Sarabia, Leonardo González, Joshue Perez, Sergio Diaz, *Spain*

Fluid Interface Concept for Automated Driving

Paolo Pretto, Peter Mörtl, Norah Neuhuber, *Austria*

Evaluating HMI-Development Approaches from an Automotive Perspective

Jan Bavendiek, Yannick Ostad, Lutz Eckstein, *Germany*

AI S264

S264: Essentials of Learner Modeling for Adaptive Instructional Systems (AISs)

Chair(s): Ani Grubisic, *Croatia*

Bayesian Student Modelling in the AC&NL Tutor

Ines Šarić-Grgić, Ani Grubisic, Branko Žitko, Slavomir Stankov, Angelina Gaspar, Suzana Tomaš, *Croatia*; Daniel Vasić, *Bosnia and Herzegovina*

Learner Modeling in the Context of Caring Assessments

Diego Zapata-Rivera, Blair Lehman, Jesse R. Sparks, *United States*

Does Time Matter in Learning? A Computer Simulation of Carroll's Model of Learning

Alfred Essa, Shirin Mojarad, *United States*

Supporting different Roles and Responsibilities in Developing and Using Context-based Adaptive Personalized Collaboration Environments Compliant to the Law

Mandy Goram, Dirk Veiel, *Germany*

Reducing the Gap Between the Conceptual Models of Students and Experts Using Graph-based Adaptive Instructional Systems

Philippe J. Giabbanelli, Andrew A. Tawfik, *United States*

Adaptive Instructional Systems

MOBILE S265

Adoption of Mobile Communications

Chair(s): June Wei, *United States*

Enhancing E/M-Government Synergy in Kenya: Citizens' Perspectives on the Driving Factors for M-Government Diffusion

Sharon Mirella Wakhu, *Kenya*; Xu Fuyuan, *P.R. China*; John O. Kakonge, *Kenya*

How Does Mobile Devices Usage Contribute to Individual's Creativity in Cross-Cultural Settings?

Shangui Hu, Hefu Liu, Guoyin Wang, *P.R. China*

The Study on How Influencer Marketing Can Motivate Consumer through Interaction-Based Mobile Communication

Kai-Shuan Shen, *Taiwan*

An Empirical Research on Factors Influencing Virtual Community Members Shift toward E-Commerce Buyers

Guangming Yang, Zhongwei Gu, *P.R. China*; June Wei, *United States*

Problems and Suggestions in the Initial Construction of Running Campuses in Different Places

Xiang Xie, Qianru Zhang, Haihong Su, *P.R. China*

Design, Operation and Evaluation of Mobile Communications

S266

Mobile Communications in Business - I

Chair(s): Chee Ling Thong, *Malaysia*

Features of Mobile Tracking Apps: A Review of Literature and Analysis of Current Apps Compared Against Travel Agency Requirements

Wing Ging Too, Chee Ling Thong, Su Mon Chit, Lee Yen Chaw, Chiew Yi Lee, *Malaysia*

Human-Computer Driving Collaborative Control System for Curve Driving

Zhenhai Gao, Yiteng Sun, Hongyu Hu, Xingtai Mei, Lei He, Fei Gao, Tianyaon Zhang, *P.R. China*

Research on Permanent Institutions of Mobile Business Income Tax

Peiyan Zhou, Xuelei Zhang, *P.R. China*

Research on the Issues and Countermeasures of VAT Legislation for China Mobile Business Users

Yun Ruan, Wanyu Li, *P.R. China*

Research on the Tax Base of Income Tax of Smart Mobile Commerce

Qi Wei, Peiyan Zhou, *P.R. China*

A Study on the Influence of E-commerce Live Streaming on Consumer's Purchase Intentions in Mobile Internet

Shi Yin, *P.R. China*

THURSDAY 14:00 - 16:00

Culture and Computing

C&C S267

S267: Designing Cultural Heritage Explorations

Chair(s): Antonio Rodà, Niccolò Pretto, *Italy*

3D Virtual Reconstruction and Sound Simulation of an Ancient Roman Brass Musical Instrument

Ze Zhou Sun, *United States*; Antonio Rodà, *Italy*; Emily Whiting, *United States*; Emanuela Faresin, Giuseppe Salemi, *Italy*

Preservation and Promotion of Opera Cultural Heritage: The Experience of La Scala Theatre

Federico Avanzini, Adriano Baratè, Goffredo Haus, Luca A. Ludovico, Stavros Ntalampiras, *Italy*

Mood Boards as a Tool for Studying Emotions as Building Blocks of the Collective Unconscious

EHuang-Ming Chang, *Netherlands*; Leonid Ivonin, *United Kingdom*; Marta Diaz, Andreu Catala, *Spain*; Matthias Rauterberg, *Netherlands*

Acoustic Experiences for Cultural Heritage Sites: A Pilot Experiment on Spontaneous Visitors' Interest

Vincenzo Norman Vitale, Marco Olivieri, Antonio Origlia, Niccolò Pretto, Antonio Rodà, Francesco Cutugno, *Italy*

Experiencing the Conditions of Trust: A Practice-Based Exploration of Trust Formation through an Artificial Society Environment

Michael Heidt, Andreas Bischof, *Germany*

Artificial Intelligence in HCI

AI-HCI S268

User-based Methods for Developing xAI

Chair(s): Rob Macredie, Theodora Koulouri, *United Kingdom*

Human-centered Explainable AI: Towards a Reflective Sociotechnical Approach

Upol Ehsan, Mark Riedl, *United States*

Transparency and Trust in Human-AI-Interaction: The Role of Model-Agnostic Explanations in Computer Vision-Based Decision Support

Christian Meske, Enrico Bunde, *Germany*

Towards Increased Transparency with Value Sensitive Design

Jacob Dexe, Ulrik Franke, Anneli Avatare Nöu, Alexander Rad, *Sweden*

Color for Characters - Effects of Visual Explanations of AI on Trust and Observability

Color for Characters - Effects of Visual Explanations of AI on Trust and Observability, *Germany*

NOTES

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THURSDAY 14:00 - 16:00

Human-Computer Interaction

HCI S269

User Experience Assessment Methods and Case Studies - II

Chair(s): Jan-Niklas Voigt-Antons, Germany

Ecological Momentary Assessment Tools: Lessons Learned from an HCI Perspective

Pietro Crovari, Fabio Catania, Micol Spitale, Franca Garzotto, Italy

Accuracy Assessment of ARKit 2 Based Gaze Estimation

Robert Greinacher, Jan-Niklas Voigt-Antons, Germany

Is it Possible to Predict Human Perception of Video Quality? The Assessment of Sencogi Quality Metric

Maria Laura Mele, Silvia Colabrese, Luca Calabria, Christiaan Erik Rijnders, Italy

Adoption of the HTA Technique in the Open Source Software Development Process

Rosa Llerena, Ecuador; Nancy Rodríguez Gavilanes, Lucrecia Llerena, Spain; John W. Castro, Chile; Silvia T. Acuña, Spain

UX in IxD - User Experience in Interaction Design

Miroslav Sili, Johannes Kropf, Sten Hanke, Austria

Engineering Psychology and Cognitive Ergonomics

EPCE S270

Studies on Cognitive Workload and Decision Making

Chair(s): José Manuel Castillo, France

Towards a Multimodal Measure for Physiological Behaviours to Estimate Cognitive Load

Muneeb Imtiaz Ahmad, David A. Robb, Ingo Keller, Katrin Lohan, United Kingdom

An Exploratory Study on the Perception of Optical Illusions in Real World and Virtual Environments

Sophie Giesa, Manuel Heinzig, Robert Manthey, Christian Roschke, Rico Thomanek, Marc Ritter, Germany

Good Boy Here or Bad Boy far Away? Effects of Digital Nudging on Booking Decisions in Car Sharing

Tim Schrills, Mourad Zoubir, Jacob Stahl, Katharina Drozniak, Thomas Franke, Germany

Mental Workload and Technostress at Work. Which Perspectives and Theoretical Frameworks Can Help us Understand both Phenomena Together?

José Manuel Castillo, Edith Galy, Pierre Thérouanne, France

Effects of Virtual Emotional Content and Task Induced Mental Workload on False Recognition Memory: Electrophysiological Investigation

Proshanto Kr Saha, Anukampa Sharma, India

Ambiguous Goals during Human-Computer Interaction Induce Higher Mental Workload

Thea Radüntz, Marion Freyer, Beate Meffert, Germany

Universal Access in Human-Computer Interaction

UAHCI S271

Technology for Inclusion and Participation (TIP) - II

Chair(s): Ingo Bosse, Christoph Kaletka, Susanne Dirks, Germany

Digital Skills for People with Disabilities in a Learning and Demonstration Experience Laboratory - The project „Emscher-Lippe hoch 4“

Ann Christin Schulz, Caroline Hirtz, Germany

Digitally-Supported Inclusive Vocational Education - Conceptual Considerations for the Hotel and Restaurant Industry

Nele Sonnenschein, Anna-Maria Kamin, Germany

Web Accessibility in Portuguese Museums: Potential Constraints on Interaction for People with Disabilities

Pedro Teixeira, Diana Lemos, Maria João Carneiro, Celeste Eusébio, Leonor Teixeira, Portugal

Creation Process for a Technology Design Model Promoting Active Participation of End Users with Neurodevelopmental Disorders: Achievements and Pitfalls

Dany Lussier-Desrochers, Marie-Eve Dupont, Yves Lachapelle, Canada; Line Massé, Cameroon; Annie Martineau, Laurence Pépin-Beauchesne, Canada

The STORM Project: Using Video Game to Promote Completion of Morning Routine for Children With Attention Deficit Hyperactivity Disorder and Autism Spectrum Disorder

Laurence Pépin-Beauchesne, Dany Lussier-Desrochers, Annie-Claude Villeneuve, Marie-Eve Dupont, Canada; Line Massé, Cameroon; Annie Martineau, Canada

S272

Recent Developments in Technologies and Techniques for Universal Accessibility - II

Chair(s): Frode Eika Sandnes, Terje Gjoesaeter, Norway

Construction of an Inexpensive Eye Tracker for Social Inclusion and Education

Ottar A.N. Krohn, Vako Varankian, Pedro G. Lind, Gustavo B. Moreno e Mello, Norway

Homebased Telework as a Tool for Inclusion? A Literature Review of Telework, Disabilities and Work-Life Balance

Anne Igeltjörn, Laurence Habib, Norway

Smartphone Navigation Support for Blind and Visually Impaired People - A Comprehensive Analysis of Potentials and Opportunities

Bineeth Kuriakose, Raju Shrestha, Frode Eika Sandnes, Norway

User Interfaces in Dark Mode During Daytime – Improved Productivity or Just Cool-Looking?

Lasse Apalnes Pedersen, Svavar Skuli Einarsson, Fredrik Arne Rikheim, Frode Eika Sandnes, Norway

A Comparative Study of Three Sudoku Input Methods for Touch Displays

Aslak Burheim Sommervold, Benjamin Nils Øvergaard, Eskil Nysether, Mohamed Yusuf Nur, Frode Eika Sandnes, Norway

A Comparative Study of Accessibility and Usability of Norwegian University Websites for Screen Reader Users Based on User Experience and Automated Assessment

Prabin Parajuli, Nepal; Evelyn Eika, Norway

THURSDAY 16:30 - 18:30

Virtual, Augmented and Mixed Reality

VAMR S273

VAMR for Collaboration

Chair(s): Fotis Liarokapis, *Cyprus*

Calibration of Diverse Tracking Systems to Enable Local Collaborative Mixed Reality Applications

Adrian H. Hoppe, Leon Kaucher, Florian Van de Camp, Rainer Stiefelhagen, *Germany*

Virtual Reality (VR) in the Computer Supported Cooperative Work (CSCW) domain: A Mapping and a Pre-Study on Functionality and Immersion

Gitte Pedersen, Konstantinos Koumaditis, *Denmark*

Interactive AR Models in Participation Processes

Jonas Hansert, Mathias Trefzger, Thomas Schlegel, *Germany*

Underwater Search and Discovery: From Serious Games to Virtual Reality

Fotis Liarokapis, *Cyprus*; Iveta Vidová, *Czech Republic*; Selma Rizvić, *Bosnia and Herzegovina*; Stella Demesticha, Dimitrios Skarlatos, *Cyprus*

Design and Implementation of a Virtual Workstation for a Remote AFISO

Thomas Hofmann, Jörn Jakobi, Marcus Biella, Christian Blessmann, Fabian Reuschling, Tom Kamender, *Germany*

S274

VAMR in Industry - II

Chair(s): Asterios Leonidis, *Greece*

Navigating a Heavy Industry Environment Using Augmented Reality – A Comparison of Two Indoor Navigation Designs

Alexander Arntz, Dustin Keßler, Nele Borgert, Nico Zengeler, Marc Jansen, Uwe Handmann, Sabrina C. Eimler, *Germany*

Mixed Mock-Up – Development of an Interactive Augmented Reality System for Assembly Planning

Florian Dyck, Jörg Stöcklein, Daniel Eckertz, Roman Dumitrescu, *Germany*

Measurement Based AR for Geometric Validation within Automotive Engineering and Construction Processes

Muhammad Ali Shahid, Benjamin-Paul Jesche, Manuel Olbrich, Holger Graf, Andreas Franek, Arjan Kuijper, Ulrich Bockholt, Michael Schmitt, *Germany*

A Comparison of Augmented and Virtual Reality Features in Industrial Trainings

WLea Daling, Anas Abdelrazeq, Ingrid Isenhardt, *Germany*

A Context-Aware Assistance Framework for Implicit Interaction with an Augmented Human

Eva Lampen, Jannes Lehwald, Thies Pfeiffer, *Germany*

SCSM S275

Digital Advertising Literacy: Genericity, Gender, Generation

Chair(s): Karine Berthelot-Guiet, *France*

"Fail, Clickbait, Cringe, Cancel, Woke": Vernacular Criticisms of Digital Advertising in Social Media Platforms

Gustavo Gomez-Mejia, *France*

Exploring Advertising Literacy Digital Paths: Comparison Between Gender Approaches Among Chilean Students

Claudia Montero-Liberona, Gianluigi Pimentel-Varas, Gregorio Fernández-Valdés, *Chile*

The Digital "Advertising Call": An Archeology of Advertising Literacy

Karine Berthelot-Guiet, *France*

Gender Gigital Violence - Study, Design and Communication of an Awareness-raising Campaign from University to University

Mauro Ferraresi, *Italy*

Social Computing and Social Media

S276

Consumer and Citizen Perspectives on ICT

Chair(s): Pekka Räsänen, *Finland*

Automatic Versus Manual Forwarding in Web Surveys - A Cognitive Load Perspective on Satisficing Responding

Arto Selkälä, *Finland*; Mario Callegaro, *United Kingdom*; Mick P. Couper, *United States*

Online Gambling Activity in Finland 2006–2016

Aki Koivula, Pekka Räsänen, Ilkka Koironen, Teo Keipi, *Finland*

The Confidence in Social Media Platforms and Private Messaging

Jukka Vuorinen, Aki Koivula, Ilkka Koironen, *Finland*

Illicit Drug Purchases via Social Media among American Young People

Atte Oksanen, *Finland*; Bryan Lee Miller, *United States*; Iina Savolainen, Anu Sirola, *Finland*; Jakob Demant, *Denmark*; Markus Kaakinen, *Finland*; Izabela Zych, *Spain*

Social Media Use, Political Polarization, and Social Capital: Is Social Media Tearing the U.S. Apart?

James Hawdon, Shyam Ranganathan, Scotland Leman, Shane Bookhultz, Tanushree Mitra, *United States*

Compliment Rules or Compliments Rule? A Population-Level Study of Appearance Commenting Norms on Social Media

Erica Åberg, Aki Koivula, Iida Kukkonen, Outi Sarpila, Tero Pajunen, *Finland*

THURSDAY 16:30 - 18:30

SCSM S277

Video Sharing and Live Streaming Services

Chair(s): Katrin Scheibe, Franziska Zimmer, *Germany*

The Law of Live Streaming: A Systematic Literature Review and Analysis of German Legal Framework
Kaja Fietkiewicz, *Germany*

"OH MY GOD! Buy It!" A Multimodal Critical Discourse Analysis of the Discursive Strategies and Ideologies Demonstrated by Chinese E-commerce Live-streamer Justin Li
Haiyan Huang, Jan Blommaert, Ellen Van Praet, *Belgium*

Digital Culture in YouTube Categories & Interfaces: User Experienced & Social Interactions of the Most Popular Videos and Channels
Alberto Montero, *Spain*; Jorge Mora-Fernández, *Ecuador*

User-generated Short Video Content in Social Media. A Case Study of TikTok
Aliaksandra Shutsko, *Germany*

Exploring TikTok Use and Non-Use Practices and Experiences in China
Xing Lu, *P.R. China*; Zhicong Lu, *Canada*; Changqing Liu, *P.R. China*

Gamification Elements on Social Live Streaming Service Mobile Applications
Franziska Zimmer, Katrin Scheibe, *Germany*; Hantian Zhang, *United Kingdom*

AC S278

Augmented Cognition

Teaching, Training and Performing in Hybrid Contexts - Interdisciplinary Research Approaches

Chair(s): Stefan Sütterlin, Ricardo G. Lugo, Benjamin J. Knox, *Norway*

Confronting Information Security's Elephant, the Unintentional Insider Threat
Matthew Canham, Clay Posey, Patricia S. Bockelman, *United States*

The Dark Sides of Technology - Barriers to Work-Integrated Learning
Camilla Gjellebæk, *Norway*; Ann Svensson, *Sweden*; Catharina Bjørkquist, *Norway*

An Overview of Virtual Reality Interventions for two Neurodevelopmental Disorders: Intellectual Disabilities and Autism
Anders Nordahl-Hansen, Anders Dechsling, Stefan Sütterlin, Line Børtveit, *Norway*; Dajie Zhang, *Germany*; Roald A. Øien, *Norway*; Peter B. Marschik, *Germany*

Preparing for Cyber Crisis Management Exercises
Grethe Østby, Stewart James Kowalski, *Norway*

Applications of an Online Audience Response System in Different Academic Settings: An Empirical Study
Ahmed Amro, Muhammad Mudassar Yamin, Benjamin James Knox, *Norway*

Variable Self-efficacy as a Measurement for Behaviours in Cyber Security Operations
Ricardo G. Lugo, Benjamin J. Knox, Øyvind Jøsok, Stefan Sütterlin, *Norway*

Acceptability and Normative Considerations in Research on Autism Spectrum Disorders and Virtual Reality
Anders Dechsling, Stefan Sütterlin, Anders Nordahl-Hansen, *Norway*

S279

Self Regulation

Chair(s): Melissa Walwanis, Amy Bolton, Jarrod Moss, *United States*

Guided Mindfulness: Using Expert Schemas to Evaluate Complex Skill Acquisition
Mina Milosevic, Katherine Rau, Lida P. Ponce, Nicholas A. Moon, Nisha Quraishi, Alexandria Webber, Richard L. Griffith, *United States*

Tracking and Improving Strategy Adaptivity in a Complex Task
Jarrod Moss, Gary Bradshaw, Aaron Wong, Jaymes Durriseau, Philip Newlin, Kevin Barnes, *United States*

Increasing Engagement in a Cyber-Awareness Training Game
Robert E. Wray, Lauren Massey, Jose Medina, Amy Bolton, *United States*

Global Mindset - A Complex Cognitive Model Used for Global Leadership Decision-making when Working Across Geographical Boundaries
Agnes Flett, *United Kingdom*

The Platonic-Freudian Model of Mind: Defining "Self" and "Other" as Psychoinformatic Primitives
Suraj Sood, *United States*

Happiness and Affective Human-Computer Interaction
Lesley Perg, Suraj Sood, Monte Hancock, *United States*

S280

Human-Autonomy Teaming

Chair(s): Dale Richards, *United Kingdom*

Measure for Measure: How do we assess Human Autonomy Teaming?
Dale Richards, *United Kingdom*

Explainable Artificial Intelligence: What Do You Need to Know?
Sam Hepenstal, David McNeish, *United Kingdom*

Experimental Evaluation of an Adaptive Planning Assistance System in Manned Unmanned Teaming Missions
Felix Heilemann, Axel Schulte, *Germany*

A Typology of Non-functional Information
Davide Secchi, *Denmark*

Assessing Variable Levels of Delegated Control - A Novel Measure of Trust
JSamson Palmer, Dale Richards, Graham Shelton-Rayner, *United Kingdom*; Kurtulus Izzetoglu, *United States*; David Inch, *United Kingdom*

Modeling User Information Needs to Enable Successful Human-Machine Teams: Designing Transparency for Autonomous Systems
Eric S. Vorm, Andrew D. Miller, *United States*

THURSDAY 16:30 - 18:30

Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management

DHM S281

Modern Applications - II
Chair(s): Vincent G. Duffy, *United States*

A Framework for Modeling Knowledge Graphs via Processing Natural Descriptions of Vehicle-Pedestrian Interactions
Md Fazle Elahi, Xiao Luo, Renran Tian, *United States*

Computer-Interfacing with Noninvasive Muscle Activity Diagnostic
Lawrence Lam, Wayne Kimura, *United States*

Leveraging Muscular Fitness Surrogates to Classify Cardiorespiratory Fitness Status in Youth: A Supervised Machine Learning Approach
Toyin Ajisafe, *United States*

A Practical View of the Similarity and Differences among the Impaired Driver States in Legal Driving
Dan Shen, Taryn Spisak, Yaobin Chen, Renran Tian, *United States*

Developing Parameters for a Technology to Predict Patient Satisfaction in Naturalistic Clinical Encounters
Tianyi Tan, Enid Montague, Jacob Furst, Daniela Raicu, *United States*

DUXU S282

Developments in DUXU: Contributions for the Context of Technological Environments
Chair(s): Freddy Paz, *Peru*

Applying a UCD Framework for ATM Interfaces on the Design of QR Withdrawal: A Case Study
Joel Aguirre, Samira Benazar, Arturo Moquillaza, *Peru*

A Systematic Literature Review about Quantitative Metrics to Evaluate Usability and Security of ATM Interfaces
Fiorella Falconi, Claudia Zapata, Arturo Moquillaza, Freddy Paz, *Peru*

Visually Impaired Accessibility Heuristics Proposal for e-Commerce Mobile Applications
Kevin Pereda, Braulio Murillo, Freddy Paz, *Peru*

A Systematic Review of User-Centered Design Techniques
Elizabeth Salinas, Rony Cueva, Freddy Paz, *Peru*

A Systematic Review of Usability Evaluation Methods and Tools for ATM interfaces
Joe Sahua, Arturo Moquillaza, *Peru*

Usability Evaluation Towards a Cultural Perspective: A Systematic Literature Review
Yoluana Gamboa, Juan Jesús Arenas, Freddy Paz, *Peru*

LCT S283

Science/STEAM Learning Outside the Classroom
Chair(s): Evangelos Kapros, *Ireland*

A Holistic Pedagogical Model for STEM learning and education inside and outside the classroom
Christian M. Stracke, Guido Van Dijk, Jan Fassen, Netherlands; Fred Lisdät, Germany; Wim Simoens, *Belgium*

Experiential Learning and STEM in Modern Education: Incorporating Educational Escape Rooms in Parallel to Classroom Learning
Leonidas Papadakis, Modestos Stavrakis, *Greece*

A Real-Time Remote Courses Model for the Improvement of the Overall Learning Experience
Martha Elena Núñez, Miguel X. Rodriguez-Paz, *Mexico*

Co-design for a Competency Self-assessment Chatbot and Survey in Science Education
Eva Durall, Finland; Evangelos Kapros, *Ireland*

Teaching STEM Competencies through an Educational Mobile Robot
José Varela-Aldás, Jorge Buele, Janio Jadan-Guerrero, Víctor H. Andaluz, *Ecuador*

S284

Emerging Technologies for Learning
Chair(s): Martin Ebner, *Austria*

Learning Analytics and MOOCs
Ebru Inan, Turkey; Martin Ebner, *Austria*

Facilitating Ideation and Knowledge Sharing in Workplaces: the Design and Use of Gamification in Virtual Platforms
Olga Viberg, *Sweden*; Mohammad Khalil, *Norway*; Alexandros Lioliopoulos, *Sweden*

Individualized Differentiated Spelling with Blogs - Implementing and Individualizing (IDeRBlog ii) - An Example of a Learning Analytics Platform for the text-based acquisition of spelling skills of students in German
Nina Leidinger, Michael Gros, *Germany*; Martin Ebner, Markus Ebner, Konstanze Edtstadler, Elisabeth Herunter, *Austria*; Jessica Heide, Sabine Peifer, *Germany*; Anneliese Huppertz, Vera Kistemann, *Belgium*

"RemoteMentor" Evaluation of Interactions between Teenage Girls, Remote Tutors, and Coding Activities in School Lessons
Bernadette Spieler, *Germany*; Jana Mikats, Sophi Valentin, Libora Oates-Indruchova, Wolfgang Slany, *Austria*

Learning Analytics and Spelling Acquisition in German – the Path to Individualization in Learning
Markus Ebner, Konstanze Edtstadler, Martin Ebner, *Austria*

THURSDAY 16:30 - 18:30

LCT S285

Human Factors In Smart HCI - II

Chair(s): Nicholas H. Müller, Germany

Virtual Reality as a Stress Reduction Measure - Chilling Out on the Beach in my Living Room

Kevin Pfeffel, Megi Elezi, Philipp Ulsamer, Nicholas H. Müller, Germany

Who Knows What in my Team? – An Interactive Visualization-based Instrument for Developing Transactive Memory Systems in Teams

Josef H. Gammel, Dorothea Pantfoerder, Timon Schulze, Katharina G. Kugler, Felix C. Brodbeck, Germany

Towards an Information Security Awareness Maturity Model

Tobias Fertig, Andreas E. Schütz, Kristin Weber, Nicholas H. Müller, Germany

Investigating Mobile Device-Based Interaction Techniques for Collocated Merging

Romina Kühn, Mandy Korzetz, Felix Kallenbach, Karl Kegel, Uwe Aßmann, Thomas Schlegel, Germany

A Conversational Agent as Facilitator: Guiding Groups Through Collaboration Processes

Navid Tavanapour, Daphne Theodorakopoulos, Eva A. C. Bittner, Germany

S286

Interactive Learning Ecosystems - V

Chair(s): Francisco J. García-Peñalvo, David Fonseca, Spain

A real-time cross-sectioning system for visualization of architectural construction details

Luis A. Hernández-Ibáñez, Viviana Barneche-Naya, Spain

An Authoring Platform for CSCL Script Definition

Andreas Papasalouros, George Chatzimichalis, Greece

Impact of Constant Work on the Students' Academic Performance

Patricia Compañ-Rosique, Rafael Molina-Carmona, Rosana Satorre-Cuerda, Spain

AI-driven Assessment of Students: Current Uses and Research Trends

José Carlos Sánchez-Prieto, Adriana Gamazo, Juan Cruz-Benito, Roberto Therón, Francisco J. García-Peñalvo, Spain

Designing a Faculty Chatbot through User-Centered Design Approach

Dijana Plantak Vukovac, Ana Horvat, Zlatko Stacic, Croatia

S287

Novel Approaches to Learning - III

Chair(s): Zainb Dawod, United Kingdom

Semantically Annotated Learning Media for Reduced Cognitive Load

Zainb Dawod, David Bell, United Kingdom

Play to learn! Nurturing Fundamental Digital Skills of Romanian Preschoolers by developing Edutainment Applications

Adriana-Mihaela Guran, Grigoreta-Sofia Cojocar, Anamaria Moldovan, Romania

Does Immersive VR Increase Learning Gain when Compared to a Non-immersive VR Learning Experience?

Khadija Mahmoud, Isaac Harris, Husam Yassin, Thomas J. Hurkxkens, Omar K. Matar, Nitesh Bhatia, Irene Kalkanis, United Kingdom

Fabric Robotics - Lessons Learned Introducing Soft Robotics in a Computational Thinking Course for Children

Bjarke Kristian Maigaard Kjær Pedersen, Emanuela Marchetti, Andrea Valente, Jacob Nielsen, Denmark

Design and Development of a Web Extension to Help Facilitate the Learning of a Foreign Language

Connor Corbin, Deniz Cetinkaya, Huseyin Dogan, United Kingdom

HCI-CPT S288

Studies on Cybersecurity, Privacy and Trust

Chair(s): Patricia Morreale, United States

Understanding Users' Relationship with Voice Assistants and How it Affects Privacy Concerns and Information Disclosure Behavior

Charulata Ghosh, Matthew S. Eastin, United States

Smart Home Security and Privacy Mitigations: Consumer Perceptions, Practices, and Challenges

Julie M. Haney, Susanne M. Furman, United States; Yasemin Acar, Germany

Privacy Apps for Smartphones: An Assessment of Users' Preferences and Limitations

Tanusree Sharma, Masooda Bashir, United States

Multi-Method Approach Measuring Trust, Distrust, and Suspicion in Information Technology

Sarah A. Jessup, Gene M. Alarcon, August Capiola, Tyler J. Ryan, United States

Analyzing Cybersecurity Understanding Using a Brain Computer Interface

Kingberli Capellan, Manuel Condado, Isabel Morais, Patricia Morreale, United States

HCI for Cybersecurity, Privacy and Trust

THURSDAY 16:30 - 18:30

HCI in Games

HCI-Game S289

Challenging Research Topics in AAA Video Games

Chair(s): Kevin Keeker, *United States*

Finding the Fun: Prototyping Topics for Game Development

Jacob Jeannot-Schroeder, *United States*

Communication Gaps between Video Game Researchers

John Dominic Diez, Edward Melcer, *United States*

Games: It's not about fun

Randy Pagulayan, *United States*

Training Students for Industry

Liz Schmidlin, *United States*

S290

Making Digital Games Enjoyable: Causes, Processes, and Benefits of Enjoyment

Chair(s): Owen Schaffer, *United States*

Guidance is Good or Avoid Too Much Hand-Holding? Proposing a Controlled Experiment on the Impact of Clear Proximal Goals on Digital Game Enjoyment

Owen Schaffer, *United States*

Gender and Genre Differences in Multiplayer Gaming Motivations

Donghee Yvette Wohn, Rabindra Ratan, Leticia Cherciglia, *United States*

Building Human-Autonomy Teaming Aids for Real-Time Strategy Games

Christianne Izumigawa, Crisrael Lucero, Lena Nans, Kurt Frederiksen, Oliver Hui, Iovanni Enriquez, Seana Rothman, Rebecca Iden, *United States*

Systems Approach to Designing an Enjoyable Process for Game Designers

Nandhini Giri, Erik Stolterman, *United States*

APixel Perfect: Fashion Styling in Virtual Character Design Process

Nandhini Giri, Erik Stolterman, *United States*

Enhancing Social Ties through Manual Player Matchmaking in Online Multiplayer Games

Md Riyadh, Ali Arya, Gerry Chan, *Canada*; Masud Imran, *Malaysia*

S291

Recent Advancements in Gaming and HCI - II

Chair(s): Khaldoon Dhou, *United States*; Barbara Caci, *Italy*

A Novel Investigation of Attack Strategies via the Involvement of Virtual Humans: A User Study of Josh Waitzkin, a Virtual Chess Grandmaster

Khaldoon Dhou, *United States*

Brain-Controlled Drone Racing Game: A Qualitative Analysis

Dante Tezza, Derek Caprio, Sarah Garcia, Blanche Pinto, Denis Laesker, Marvin Andujar, *United States*

A Tool to Support Players Affective States Assessment Based on Facial Expressions Analysis

Marcos C. Fleury, Tiago Barros Pontes E Silva, Mauricio Miranda Sarmet, Carla Denise Castanho, *Brazil*

An Analysis of Engagement Levels While Playing Brain-Controlled Games

Dante Tezza, Derek Caprio, Blanche Pinto, Isabella Mantilla, Marvin Andujar, *United States*

Exploring the Relationship Between Player Types and Immersion Factors in Video Games

Franco Zautzik, Francisco J. Gutierrez, *Chile*

MobiTAS S292

Human-Systems Integration for Driving Automation Systems - II

Chair(s): Peter Mörtl, *Austria*

Toward Driver State Models that Explain Interindividual Variability of Distraction for Adaptive Automation

Margit Höfler, Peter Mörtl, *Austria*

Hand-Skin Temperature Response to Driving Fatigue: an Exploratory Study

Leandro L. Di Stasi, Evelyn Gianfranchi, Carolina Diaz-Piedra, *Spain*

Perception and Processing in Automated Driving – A Dual Process Application

Vanessa Sauer, Alexander Mertens, Madeleine Reiche, Christoph Mai, Jens Heitland, Verena Nitsch, *Germany*

Global implications of human tendencies towards automated driving and human driver availability in autonomous vehicles

Ankit R. Patel, Flora Ferreira, Sergio Monteiro, Estela Bicho, *Portugal*

Affective Use Cases for Empathic Vehicles in Highly Automated Driving: Results of an Expert Workshop

Michael Oehl, Klas Ihme, Anna-Antonia Pape, Mathias Vukelić, Michael Braun, *Germany*

HCI in Mobility/ Transport and Automotive Systems

THURSDAY 16:30 - 18:30

MobiTAS S293

VR and AR in Automotive Research
Chair(s): Arthur Barz, *Germany*

Gender Differences in Simulation Sickness in Static vs. Moving Platform VR Automated Driving Simulation
Stanislava Rangelova, Karolin Rehm, Sarah Diefenbach, Daniel Motus, Elisabeth André, *Germany*

User Engagement with Driving Simulators: An Analysis of Physiological Signals
Ying-Hsang Liu, *Denmark*; Moritz Spiller, *Germany*; Jinshuai Ma, Tom Gedeon, Md Zakir Hossain, Atiqul Islam, *Australia*; Ralf Bierig, *Ireland*

Investigating the Benefits of Haptic Feedback during In-Car Interactions in Virtual Reality
Mareike Stamer, *Germany*; Joseph Michaels, *United States*; Johannes Tümler, *Germany*

Using Augmented Reality to Mitigate Blind Spots in Trucks
Dan Roland Persson, Valentino Servizi, Tanja Lind Hansen, Per Baekgaard, *Denmark*

Improving Emergency Vehicles' Response Times with the Use of Augmented Reality and Artificial Intelligence
Kweku Bram-Larbi, Vassilis Charissis, Soheeb Khan, David Harrison, *United Kingdom*; Dimitris Drikakis, *Cyprus*

Advantages of Using Runtime Procedural Generation of Virtual Environments Based on Real World Data for Conducting Empirical Automotive Research
Arthur Barz, Jan Conrad, Dieter Wallach, *Germany*

AIS S294

Authoring Tools and Interoperability Standards for AISs
Chair(s): Barbara Buck, *United States*

Declarative Knowledge Extraction in the AC&NL Tutor
Ani Grubisic, Slavomir Stankov, Branko Žitko, Ines Šarić-Grgić, Angelina Gašpar, Suzana Tomaš, Croatia; Emil Brajković, Daniel Vasić, *Bosnia and Herzegovina*

Authoring for Adaptive Instructional Systems within Complex Simulation-Based Environments
Barbara Buck, Cristina Boyer, Elizabeth Biddle, *United States*

Learning Traces, Measurement and Assessment Templates for AIS Interoperability
Bruno Emond, *Canada*

Toward Zero Authoring: Considering How to Maximize Courseware Quality and Affordability Simultaneously
James McCarthy, *United States*

Google Service-based CbITS Authoring Tool to Support Collaboration
Lijia Wang, Keith Shubeck, Xiangen Hu, *United States*

Competency Development through Experiential Training: Mapping Scenarios with Assessments
Benjamin Goldberg, Michael Hoffman, Chris Meyer, Michael Kalaf, *United States*

S295

Real-Time Use of AISs in the Internet of Things
Chair(s): Brenda Bannan, Jody L. Cockroft, *United States*

Sensor-based Adaptive Instructional Systems in Live Simulation Training
Brenda Bannan, Elisa M. Torres, Hemant Purohit, Rahul Pandey, Jody L. Cockroft, *United States*

An Ambient & Pervasive Personalized Learning Ecosystem: "Smart Learning" in the Age of the Internet of Things
Anastasia Betts, KP Thai, Sunil Gunderia, Paula Hidalgo, Meagan Rothschild, Diana Hughes, *United States*

Nature at Your Service - Nature Inspired Representations Combined with Eye-gaze Features to Infer User Attention and Provide Contextualized Support
Carla Barreiros, Portugal; Nelson Silva, Viktoria Pammer-Schindler, Eduardo Veas, *Austria*

Enable 3A in AIS
Faruk Ahmed, Keith Shubeck, Frank Andrasik, Xiangen Hu, *United States*

S296

AI in Adaptive Instructional Systems
Chair(s): Robby Robson, *United States*

An Adaptive Instructional System for the Retention of Complex Skills
Jelke Van der Pal, Armon Toubman, *Netherlands*

Agent-Based Methods in Support of Adaptive Instructional Decisions
Robert A. Sottolare, *United States*

Experiential Instruction of Metacognitive Strategies
Andrew J. Hampton, Andrew A. Tawfik, *United States*

A Mastery Approach to Flashcard-based Adaptive Training
Daphne E. Whitmer, Cheryl I. Johnson, Matthew D. Marraffino, Rebecca L. Pharmed, Lisa D. Blalock, *United States*

Adapting E-Learning to Dyslexia Type: an Experimental Study to Evaluate Learning Gain and Perceived Usability
Weam Gaoud Alghabban, Robert Hendley, *United Kingdom*

Adaptive Instructional Systems

THURSDAY 16:30 - 18:30

MOBILE S297

Mobile Communications in Business - II

Chair(s): June Wei, *United States*

The Impact of Mobile IT on the Performance of Manufacturing Enterprise

Caihong Liu, *P.R. China*; June Wei, *United States*

Research on the Impact Factors of Quality Risk in the Mobile Supply Chain of Intelligent Manufacturing

Caihong Liu, *P.R. China*; June Wei, *United States*

Examining Emerging Technology Awareness in the Accounting and Finance Industries through Twitter Data

Jiawei Xing, Jiayang (Jocelyn) Lin, Manlu Liu, Jennifer Xu, *United States*

Digital content effects and Children as a consumer

Uttam Kumar Roy, *Bangladesh*; Wei-Ning Tang, *P.R. China*

Design, Operation and Evaluation of Mobile Communications

AI-HCI S298

Human-Centered AI

Chair(s): Yee-Yin Choong, *United States*

Prediction-Based Uncertainty Estimation for Adaptive Crowd Navigation

Kapil Katyal, Katie Popek, Gregory D. Hager, I-Jeng Wang, Chien-Ming Huang, *United States*

Contextual Programming of Collaborative Robots

Chien-Ming Huang, *United States*

The Role of Behavioral Anthropomorphism in Human-Automation Trust Calibration

Theodore Jensen, Mohammad Maifi Hasan Khan, Yusuf Albayram, *United States*

Is My Home Smart or Just Connected?

usanne M. Furman, Julie M. Haney, *United States*

Social Dynamics in Human-Robot Groups: Possible Consequences of Unequal Adaptation to Group Members Through Machine Learning in Human-Robot Groups

Astrid Rosenthal-von der Pütten, Anna M.H. Abrams, *Germany*

Artificial Intelligence in HCI

NOTES

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THURSDAY 16:30 - 18:30

| Human-Computer Interaction | HCI S301 | S302 | S303 | S304 continues... |
|----------------------------|---|---|---|--|
| | <p>Media Interaction: Engagement, Emotions and Digital Entertainment Chair(s): Valdecir Becker, <i>Brazil</i></p> <hr/> <p>Player Needs First: Understanding Player Needs before Designing a K-pop Themed Mobile Game Juan Oreste Braga De Oliveira, Antonio Felipe Cumarú Inhamuns, <i>Brazil</i></p> <hr/> <p>Read Ahoy! A playful digital-physical Viking experience to engage children in finding and reading books Andrea Resmini, Bertil Lindenfolk, <i>Sweden</i></p> <hr/> <p>Applying Designing Lines to Develop Audiovisual Systems Valdecir Becker, Daniel Gambaro, Rafael M. Toscano, Helder Bruno A.M. De Souza, Thainá Dos S. Gomes, Maria C.D. Silva, Ed Porto Bezerra, <i>Brazil</i></p> <hr/> <p>Ethnographic Practice and the Problem of Context in Interaction Design Education Michael Lahey, <i>United States</i></p> <hr/> <p>Tools with Histories: Exploring NFC-tagging to support hybrid documentation practices and knowledge discovery in makerspaces Daragh Byrne, Marti Louw, <i>United States</i></p> <hr/> <p>Pathway to a Human-Values Based Approach to Tackle Misinformation Online Lara S.G. Piccolo, <i>United Kingdom</i>; Alisson Puska, Roberto Pereira, <i>Brazil</i>; Tracie Farrell, <i>United Kingdom</i></p> | <p>Models, Patterns and AI-Methods for Creating Smart and Flexible Interactive Systems Chair(s): Christian Märtin, <i>Germany</i></p> <hr/> <p>FaceForward – An AI-based Interactive System for Exploring the Personal Potential Elisabeth Veronica Mess, Dennis Rockstein, Christian Märtin, <i>Germany</i></p> <hr/> <p>Modelling the Collaboration of a Patient and an Assisting Humanoid Robot during Training Tasks Peter Forbrig, Alexandru-Nicolae Bundeá, <i>Germany</i></p> <hr/> <p>Improving Dialogue Design and Control for Smartwatches by Reinforcement Learning Based Behavioral Acceptance Patterns Rainer Lutze, Klemens Waldhör, <i>Germany</i></p> <hr/> <p>Modeling and Runtime Generation of Situation-aware Adaptations Christian Herdin, Christian Märtin, <i>Germany</i></p> | <p>Socio-cultural and Linguistic Aspects in Human-Computer Interaction Chair(s): Christina Alexandris, <i>Greece</i></p> <hr/> <p>Generating Graphic Representations of Spoken Interactions Revisited: The Tension Factor and Information Not Uttered in Journalistic Data Christina Alexandris, Dimitrios Mourouzidis, Vasilios Floros, <i>Greece</i></p> <hr/> <p>Insights into the work of Editors of Digital Scholarly Editions for Correspondences Tobias Holstein, Uta Störl, <i>Germany</i></p> <hr/> <p>Training Professionals to Bring Digital Transformation into Museums: the Mu.SA Blended Course Massimiliano Dibitonto, Katarzyna Leszczynska, Elisa Cruciani, Carlo Maria Medaglia, <i>Italy</i></p> <hr/> <p>Database Semantics for Talking Autonomous Robots Roland Hausser, <i>Germany</i></p> <hr/> <p>Reading aloud in human-computer interaction: How spatial distribution of digital text units at an interactive tabletop contributes to the participants' shared understanding Svenja Heuser, Beatrice Arend, Patrick Sunnen, <i>Luxembourg</i></p> | <p>The Power of Inclusive Design - how this methodology helps building technology that works for all Chair(s): Ulla Geisel, <i>Germany</i></p> <hr/> <p>Using Inclusive Research to Promote Inclusive Design: Possibilities and Limitations in a Corporate Environment Greg Weinstein, <i>United States</i></p> <hr/> <p>Inclusive Design - Go Beyond Accessibility Roland Buß, <i>Germany</i></p> <hr/> <p>From UCD to HCD and Beyond - Conciliating the Human Aims between Philosophy and Design Education Romualdo Gondomar, Enric Mor, <i>Spain</i></p> <hr/> <p>DICT and Seniors: How can Research Experience Help us Map Digital Competencies? Cecilia Henriques, Denise Pilar, <i>Brazil</i></p> |



HCI S305

User Research Methodologies

Chair(s): Emmanuelle Savarit, Peter Gregory Dunn, *United Kingdom*

Contextual Research - Why we Need to Research in Context to Deliver Great Products

Sabrina Duda, Carolyn Warburton, Nissa Black, *United Kingdom*

A Successful Transformation of Work? An Exploratory Analysis on Requirements and Evaluation Criteria

Julian Hildebrandt, Johanna Kluge, Martina Ziefle, *Germany*

BeaCON - A Research Framework Towards an Optimal Navigation

Arun Balakrishna, Tom Gross, *Germany*

Documentation tasks with tablet or smartphone in the workplace: A study with respect to OSH

Patricia Tegtmeier, Christiane Adomeit, Sascha Wischniewski, *Germany*

The Problems with Usability Testing

Peter Gregory Dunn, Alice Hayes, *United Kingdom*

S306

User Experience Assessment Methods and Case Studies - III

Chair(s): Brian Pickering, *United Kingdom*

An Experimental Study of Typography using EEG Signal Parameters

Ana Rita Teixeira, Anabela Gomes, *Portugal*

A new approach to measure user experience with voice-controlled intelligent assistants: A pilot study

Félix Le Pailleur, Bo Huang, Pierre-Majorique Léger, Sylvain Sénécal, *Canada*

Using Reinforcement Learning Agents to Analyze Player Experience

Tian Zhu, *United States*; Powen Yao, *Taiwan*; Michael Zyda, *United States*

Ask Me No Questions: Increasing Empirical Evidence for a Qualitative Approach to Technology Acceptance

Brian Pickering, Rachael Bartholomew, *United Kingdom*; Mariet Nouri Janian, *Italy*; Borja Lopéz Moreno, *Spain*; Michael Surridge, *United Kingdom*

The Influences of Media Naturalness and Mental Model Alignment on Reducing Patient Uncertainty in Virtual Consultation

Yuxi Vania Shi, Sherrie Y.X. Komiak, Paul Komiak, *Canada*

An empirical investigation of young children's digitally augmented play

Eva Brooks, Anthony Brooks, *Denmark*

HIMI S307

Knowledge and Information Management

Chair(s): To be announced

Software Crowdsourcing Design: An Experiment on the Relationship between Task Design and Crowdsourcing Performance

Turki Alelyani, *Saudi Arabia*; Paul T. Grogan, Yla Tausczik, Ye Yang, *United States*

User-Centered Design of a Process-Recommender System for Fiber Reinforced Polymer Production

Thomas Schemmer, Philipp Brauner, Anne Kathrin Schaar, Martina Ziefle, Florian Brillowski, *Germany*

A Generalized User Interface Concept to enable Retrospective System Analysis in Monitoring Systems

Viviane Herdel, Bertram Wortelen, Mathias Lanezki, Andreas Lüdtke, *Germany*

How to Design a Research Data Management Platform? Technical, Organizational and Individual Perspectives and Their Relations

Lennart Hofeditz, Björn Ross, Konstantin Wilmis, Marius Rother, Stephanie Rehwald, Bela Brenger, Ania López, Raimund Vogl, Dominik Rudolph, *Germany*

Implementation of Descriptive Similarity for Decision Making in Smart Cities

Maryna Averkyna, *Estonia*

Human Interface and the Management of Information

EPCE S308

Human Energy & Resource Regulation: Conceptualization, Measurement, and Application

Chair(s): Thomas Franke, Mourad Zoubir, *Germany*

Fostering Flow Experience in HCI to Enhance and Allocate Human Energy

Corinna Peifer, Annette Kluge, Nikol Rummel, Dorothea Kolossa, *Germany*

Managing Human Energy with Music? An Explorative Study of Users' Energy-Related Listening Behaviours

Mourad Zoubir, Thomas Franke, *Germany*

Application of a Pictorial Scale of Human Energy in Ecological Momentary Assessment Research

Fabienne Lambusch, Oliver Weigelt, Michael Fellmann, Katja Siestrup, *Germany*

Augmented Energy for Locomotion: How do Users Perceive Energy Dynamics in Prototypical Mobility Scenarios?

Markus Gödker, Thomas Franke, *Germany*

Human Energy in Organizations: Theoretical Foundations and IT-based Assessment

Michael Fellmann, Fabienne Lambusch, Oliver Weigelt, *Germany*

Engineering Psychology and Cognitive Ergonomics

Universal Access in Human-Computer Interaction

UAHCI S309

Affective Computing for New Emotional Human-Computer Interfaces

Chair(s): Maura Mengoni, *Italy*

Video Games to Foster Empathy: A Critical Analysis of the Potential of Detroit: Become Human and The Walking Dead

Federica Pallavicini, Alessandro Pepe, Chiara Carmela Caragnano, Fabrizia Mantovani, *Italy*

Affective Communication Enhancement System for Locked-In Syndrome Patients

Fanny Larradet, Giacinto Barresi, Leonardo S. Mattos, *Italy*

Affective Computing and Loneliness: How this Approach could Improve a Support System

Laura Burzagli, Simone Naldini, *Italy*

A Preliminary Investigation Towards the Application of Facial Expression Analysis to Enable an Emotion-Aware Car Interface

Silvia Ceccacci, Maura Mengoni, Generosi Andrea, Luca Giraldi, Giuseppe Carbonara, Andrea Castellano, Roberto Montanari, *Italy*

Social Computing and Social Media

SCSM S310

Frontiers of Social Media

Chair(s): Christian W. Scheiner, *Germany*

I Do It Because I Feel That... Moral Disengagement and Emotions in Cyberbullying and Cybervictimisation

Oronzo Parlangei, Enrica Marchigiani, Stefano Guidi, Margherita Bracci, Alessandro Andreadis, Riccardo Zambon, *Italy*

Roles on Corporate and Public Innovation Communities: Understanding Personas to Reach New Frontiers

Maximilian Rapp, Niclas Kröger, Samira Scheerer, *Germany*

The Role of Moral Receptors and Moral Disengagement in the Conduct of Unethical Behaviors on Social Media

Christian W. Scheiner, *Germany*

Effective Online Advertising Strategy

Marc Oliver Opresnik, *Germany*

Materialism and Facebook Usage: Could Materialistic and Non-Materialistic Values be Linked to Using Facebook Differently?

Roshan Rai, Jade Blocksidge, Mei-I Cheng, *United Kingdom*

Augmented Cognition

AC S311

Harnessing the Power of Neuroergonomics for Augmented Cognition: Real-time monitoring & human-system performance enhancement

Chair(s): Kurtulus Izzetoglu, *States*

Using fMRI to Predict Training Effectiveness in Visual Scene Analysis

Joseph D. Borders, Bethany Dennis, Birken Noesen, Assaf Harel, *United States*

A Neuroimaging Approach to Evaluate Choices and Compare Performance of Tower Air Traffic Controllers during Missed Approaches

Ivin J. Ayeni, Kiranraj Pushparaj, *Singapore*; Kurtulus Izzetoglu, *United States*; Sameer Alam, Vu N. Duong, *Singapore*

The Role of Gaze as a Deictic Cue in Human Robot Interaction

Efecan Yilmaz, Mehmetcan Fal, Cengiz Acarturk, *Turkey*

Multimodal Analysis using Neuroimaging and Eye Movements to Assess Cognitive Workload

Ricardo Palma Fraga, *Venezuela*; Pratusha Reddy, Ziho Kang, Kurtulus Izzetoglu, *United States*

Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management

DHM S312

continues...

Human-Automation Interaction

Chair(s): Vincent G. Duffy, *United States*

Advancing a 'Human Factors & Ethics Canvas' for New Driver Assistance Technologies Targeted at Older Adults

Joan Cahill, Katie Crowley, Sam Cromie, Ciaran Doyle, Eamonn Kenny, Alison Kay, Michael Gormley, Sonja Hermann, Ann Hever, Robert Ross, *Ireland*

Development and Evaluation of a Research Framework for Measuring the Reliance on Automation in Situations of Risk and Moral Dilemma

Gian Luca Liehner, Philipp Brauner, Anne Kathrin Schaar, Martina Ziefle, *Germany*

How Do We Sit when Our Car Drives for Us?

Martin Fleischer, Si Chen, *Germany*

The Difficulties in Usability Testing of 3-Dimensional Software Applying Eye-Tracking Methodology – Presented via Two Case Studies of Evaluation of Digital Human Modelling Software

Mária Babicsné Horváth, Károly Hercegf, *Hungary*

Statistical Posture Prediction of Vehicle Occupants in Digital Human Modelling Tools

Erik Brolin, Dan Högberg, Pernilla Nurbo, *Sweden*

Proactive Analysis of Complex Systems through DHM: Paradigmatic Application of an Innovative Ergonomic Cumulative Index to Large Retail Stores

Carlo Emilio Standoli, Nicola Francesco Lopomo, Stefano Elio Lenzi, Giuseppe Andreoni, *Italy*

FRIDAY 17:00 - 19:00



DHM S313

Modern Applications - III

Chair(s): David A. Plecher, Germany

TrackSugAR

David A. Plecher, Christian Eichhorn, Conrad Steinmetz, Gudrun Klinker, Germany

CASRM: Cricket Automation and Stroke Recognition Model using OpenPose

Tevin Moodley, Dustin Van der Haar, South Africa

Development and Evaluation of a Platform-independent Surgical Workstation for an Open Networked Operating Theatre Using the IEEE 11073 SDC Communication Standard

Okan Yilmaz, Dario Wieschebrock, Jan Heibeyn, Klaus Rademacher, Armin Janß, Germany

A Technology-Driven Approach for Child-Friendly Diabetes Management

Martin Lurz, Maren Billmann, Markus Böhm, Helmut Krcmar, Germany

A Reliable and Inexpensive Integration of Virtual Reality and Digital Human Modelling to Estimate Cervical Spine Function

Nicola Francesco Lopomo, Paolo Mosna, Stefano Elio Lenzi, Carlo Emilio Standoli, Paolo Perego, Stefano Negrini, Giuseppe Andreoni, Italy

DUXU S314

Measures for Emotional Design - I

Chair(s): Francisco Rebelo, Ernesto Filgueiras, Portugal

Can an Environmental Feature Influence Interview Anxiety? A Virtual Reality Study

Elisangela Vilar, Paulo Noriega, Tania Borges, Francisco Rebelo, Sara Ramos, Portugal

eSports: How do Video Game Aspects Define Competitive Gaming Streams and Spectatorship

Eulerson Rodrigues, Ernesto Filgueiras, Portugal

Emotional Design and Gamification in Educational Processes: Predictor Model to Increase Video Game Efficiency

Romulo Pinto, Ernesto Filgueiras, Portugal; Karina Moutinho, Brazil

Gamedesign and physiotherapy: Contribution of gamification and UX techniques to physical teenagers recovery

Ernesto Filgueiras, Gustavo Desouzart, Portugal

Automatic Emotional Balancing in Game Design: Use of Emotional Response to Increase Player Immersion

Willyan Dworak, Ernesto Filgueiras, João Valente, Portugal

S315

Creativity and Innovation in DUXU

Chair(s): Virginia Tiradentes Souto, Brazil

How to Design Potential Solutions for a Cross-Country Platform that Leverages Students' Diversity: A User-Centered Design Approach – and its Challenges

Giulia D'Ettola, Thomas Bjørner, Amalia De Götzen, Denmark

Available Technologies: Web Design for Technology Transfer from Public Education and Research Institutions

Daniel Nascimento Medeiros, Virginia Tiradentes Souto, Brazil

Analysis of clustering techniques in MMOG with restricted data: the case of Final Fantasy XIV

Lucas Vanderlei Fernandes, Mauricio Miranda Sarmet, Carla Denise Castanho, Ricardo Pezzuol Jacobi, Tiago Barros Pontes E Silva, Brazil

Designing an Innovative Collaborative Learning Application: The Case of Method 300

Virginia Tiradentes Souto, Ricardo Ramos Fragelli, Wilson Henrique Veneziano, Brazil

S316

DUXU for Health and Well-Being - I

Chair(s): Ilyasse Belkacem, Luxembourg

The development of a point of care clinical guidelines mobile application following a user-centred design approach

James Mitchell, Ed De Quincey, Charles Pantin, Naveed Mustfa, United Kingdom

Investigating a Design Space for Developing Design Thinking in Electronic Healthcare Records

Ilyasse Belkacem, Luxembourg; Isabelle Pecci, France; Anthony Faiola, United States; Benoît Martin, France

Preliminary findings regarding the effect of an interactive wall to promote hand hygiene among healthcare workers

Beatriz Pereira, Hande Ayanoglu, Emilia Duarte, Portugal

UX concerns in developing functional orthodontic appliances

Stefano Filippi, Luca Grigolato, Gianpaolo Savio, Italy

Design and Usability of an E-Health Mobile Application

Maria Rita Nogueira, Paulo Menezes, Sérgio Carvalho, Bruno Patrão, Inês A. Trindade, Raquel Guiomar, Joana Duarte, Teresa Lapa, José Pinto-Gouveia, Paula Freitas Castilho, Portugal

Design, User Experience, and Usability

FRIDAY 17:00 - 19:00

DUXU S317

User-Centered Design in Interactive Systems

Chair(s): Claire Ancient, *United Kingdom*

Augmented Reality Interface Design to Support Visualisation of 'Risk Landscapes'

Claire Ancient, Richard Teeuw, *United Kingdom*

Multisensory HCI Design with Smell and Taste for Environmental Health Communication

Paula Neves, Antonio Camara, *Portugal*

Navigating through Haptics and Sound: A Non-visual Navigation System to Enhance Urban Bicycling

Anette Isabella Giesa, *Sweden*

User experience requirements and interface design for the TouristHub trip planning platform

Modestos Stavrakis, Damianos Gavalas, Panayiotis Koutsabasis, Spyros Vosinakis, *Greece*

Increasing Awareness of Avalanche DANGER: Redesigning a Bulletin

Bojan Blažica, Franc Novak, Špela Poklukar, Peter Novak, Vanja Blažica, *Slovenia*

Holistic Assessment of Situated Cooking Interactions: Preliminary Results of an Observational Study

Stephanie Van Hove, Anissa All, Peter Conradie, Lieven De Marez, *Belgium*

DAPI S318

Urban Life in Smart Cities, Learning Cities, and Future Cities

Chair(s): H. Patricia McKenna, *Canada*

Adaptability and Attuning in Smart Cities: Exploring the HCI Grand Challenge of Learning and Creativity

H. Patricia McKenna, *Canada*

Smart Learning in the Community: Supporting Citizen Digital Skills and Literacies

Pen Lister, *Malta*

Tableware: Social Coordination through Computationally Augmented Everyday Objects Using Auditory Feedback

Yanjun Lyu, Brandon Mechtley, Lauren Hayes, Xin Wei Sha, *United States*

Participatory Governance in Smart Cities: Future Scenarios and Opportunities

Nicole Shadowen, Thomas Lodato, Daria Loi, *United States*

The Role of Learning City "Smart Teams" In Promoting, Supporting, and Extending the Community School Model

Sarah Chauncey, Gregory I. Simpson, *United States*

Distributed, Ambient and Pervasive Interactions

HCIBGO S319

Digital Business Transformation - I

Chair(s): Kaveh Bazargan, *Iran*

Advancing Design Innovation and Maturity with Sustainable UX Capacity-Building and Adoption: Insights from SIGCHI.IR

Kaveh Bazargan, Ms. Mina Tafazoli, *Iran*

Storytelling with Data in the Context of Industry 4.0: A Power BI-based case study on the shop floor

Juliana Salvadorinho, Leonor Teixeira, Beatriz Sousa Santos, *Portugal*

Designing Community-based Open Innovation Platforms based on Actual User Behavior

Claas Digmayer, Eva-Maria Jakobs, *Germany*

HCI in Business, Government and Organizations

S320

HCI for Enterprises and Public Administration

Chair(s): To be announced

Transformation Action Cycle - Suggestions for Employee Centered Transformation to Digital Work in SMEs

Johanna Kluge, Martina Ziefle, Achin Buschmeyer, Cornelia Hahn, *Germany*

Understanding How Virtual Agile Teams Use Slack in Humanistic Co-Design Projects

Areej Al-Wabil, Shiroq Al-Megren, Basmah AlKadhi, *Saudi Arabia*

Towards Conversational E-Government - An Experts' Perspective on Requirements and Opportunities of Voice-based Citizen Services

Matthias Baldauf, Hans-Dieter Zimmermann, *Switzerland*

It's About the Documents - Re-Engineering Business Processes in Public Administrations

Christopher Lentzsch, Thomas Herrmann, *Germany*

Human Computer Interaction Aspects of Enterprise Social Networks: an Empirical Validation of Adoption Model in a Developing Country

Ghada Refaat El Said, *Egypt*

FRIDAY 17:00 - 19:00

Learning and Collaboration Technologies

LCT S321

Learning Experience Design: Embodiment, Gesture, and Interactivity
 Chair(s): Andri Ioannou, Yiannis Georgiou, *Cyprus*; Mina Johnson, *United States*

Designing 'Embodied' Science Learning Experiences for Young Children
 Rhiannon Thomas Jha, Sara Price, Alison Motion, *United Kingdom*

Teachers' Adoption of Embodied Learning Digital Games with an Inclusive Education Approach: Lessons Learnt from the INTELed Project in Spain?
 Alejandra Martínez-Monés, Sara Villagrà-Sobrino, Eva-María Fernández Faundez, María Jiménez Ruiz, *Spain*

A Co-Design Approach for the Development and Classroom Integration of Embodied Learning Apps
 Yiannis Georgiou, Andri Ioannou, *Cyprus*

Evaluation of the Virtual Mobility Learning Hub
 Diana Andone, Silviu Vert, Vlad Mihaescu, Daniela Stoica, Andrei Ternauciuc, *Romania*

Using Virtual Reality Simulations to Encourage Reflective Learning in Construction Workers
 Eileen Fiala, Markus Jelonek, Thomas Herrmann, *Germany*

S322

Technologies Within and Beyond the Classroom
 Chair(s): Ajrina Hysaj, *United Arab Emirates*

Reflective Journaling: A Theoretical Model and Digital Prototype for developing Resilience and Creativity
 Ana Rivera, *United Kingdom*; Alwin De Rooij, *Netherlands*; Sarah Jones, *United Kingdom*

Generating Dashboards using Fine-Grained Components: A Case Study for a PhD Programme
 Andrea Vázquez-Ingelmo, Francisco J. García-Peñalvo, Roberto Therón, *Spain*

Use of an Emotional Chatbot for the Analysis of a Discussion Forum for the Improvement of an E-Learning Platform
 Karim Elia Fraoua, Jean-Marc Leblanc, Amos David, *France*

Development of a Flipped Classroom Approach to Teaching Lung Pathology: the Evaluation of a Formative on-Line Quiz Primer to Encourage Active Learning
 Mark Dixon, Katherine Syred, *United Kingdom*

Exploring Affordances of Distance Learning Platform (DLP) In COVID -19 Remote Learning Environment
 Ajrina Hysaj, Doaa Hamam, *United Arab Emirates*

Learning and Creativity through a Curatorial Practice using Virtual Reality
 Sérgio Eliseu, Maria Manuela Lopes, João Pedro Ribeiro, Fábio Oliveira, *Portugal*

Human Aspects of IT for the Aged Population

ITAP S323

Intergenerational Use of New Media
 Chair(s): Eugène Loos, *Netherlands*; Inês Amaral, *Portugal*

Intergenerational social media use: expectations of adults and elder users
 Nicoletta Vittadini, *Italy*

Intergenerational Perspectives on Audiences Studies: From Youth to Senior Representations
 Maria José Brites, Inês Amaral, Sofia José Santos, *Portugal*

Mapping Intergenerational Masculinities on Instagram
 Inês Amaral, Sofia José Santos, Maria José Brites, *Portugal*

Intergenerational Communication in Traditional and Virtual Bulgarian Families
 Lilia Raycheva, Mariyan Tomov, Neli Velinova, *Bulgaria*

"Older and Younger People": Towards a Cross-generational Online Peer Support about Cancer. The Example of Glioblastoma on French Digital Platforms
 Juliette Charbonneaux, Karine Berthelot-Guiet, *France*

Attitudinal and Behavioral Differences between Older and Younger Adults using Mobile Devices
 Elizabeth Nichols, Erica Olmsted-Hawala, Andrew Raim, Lin Wang, *United States*

S324

Understanding Technological and Environmental Needs of Older Adults
 Chair(s): Alex Chaparro, *United States*

Assessing Alternative Text Presentation and Tablet Device Usage for Low Vision Leisure Reading
 Erin Gannon, Laura Walker, Alex Chaparro, Barbara Chaparro, *United States*

Use of Augmented Reality by Older Adults
 Jessyca Derby, Barbara Chaparro, *United States*

The Effects of Increasing Degree of Unreliable Automation on Older Adults' Performance
 Claire Textor, Richard Pak, *United States*

Embodied Interaction Design to Promote Creative Social Engagement for Older Adults
 Lina Lee, Johanna Okerlund, Mary Lou Maher, Thomas Farina, *United States*

Designing digital technologies and safeguards for improving activities and well-being for aging in place
 Helene Fournier, Irina Kondratova, Heather Molyneaux, *Canada*

FRIDAY 17:00 - 19:00

ITAP S325

Older Adults in the Web Ecology Experiences

Chair(s): Ana Isabel Veloso, Portugal

Older Adults' Participation in VIAS' Mobile App Design

Cristina Azevedo Gomes, Sónia Ferreira, Bárbara Sousa, Portugal

Gameful Tale-Telling and Place-Making from Tourists' Generation to Generation: A Review

Liliana Vale Costa, Ana Isabel Veloso, Portugal

Footour: Designing and Developing a Location-based Game for Senior Tourism in the miOne Community

Ana Isabel Veloso, Diogo Carvalho, João Sampaio, Sofia Ribeiro, Liliana Vale Costa, Portugal

"The Terms and Conditions Came Back to Bite": Plain Language and Online Financial Content for Older Adults

Alessandra Rossetti, Patrick Cadwell, Sharon O'Brien, Ireland

Digital Inclusion or Digital Divide for Older Immigrants? A Scoping Review

Xin Chen, Britt Östlund, Susanne Frennert, Sweden

S326

Elder's User Experiences - II

Chair(s): Hande Ayanoglu, Portugal

Defining Digital Joy-of-Use Criteria for Seniors: An Applied Design Approach to Build Motivational User Experiences for Older Generations

Michel Bauer, Bruno Silva, Carlos Rosa, Portugal

An Age-friendly System Design for Smart Home: Find-ings from Heuristic Evaluation

Adriana Maria Pires Marques da Silva, Bruno Silva, Hande Ayanoglu, Portugal

UCD in AAL: Status Quo and Perceived Fit

Silas Barth, Rebecca Weichelt, Stephan Schlögl, Felix Piazzolo, Austria

Computer-Based Foreign Language Learning Programs for the Elderly – A Review Study

Blanka Klimova, Czech Republic

The Design of Electronic Tagging and Tracking Solutions to Improve the Safety and Person-Centered Care for People with Dementia

Anders Kalsgaard Møller, Denmark

HCI-Games S328

HCI in Games

Playful Experiences: Design and Impact

Chair(s): Daniel Riha, Czech Republic

Hermeneutic Relations in VR: Immersion, Embodiment, Presence and HCI in VR Gaming

Leighton Evans, United Kingdom; Michal Rzeszowski, Poland

Wizard of Oz and the Design of a Multi-player Mixed Reality Game

Niklas Torstensson, Tarja Susi, Ulf Wilhelmsson, Mikael Lebram, Sweden

A Warning: Potential Damages Induced by Playing XR Games

Jakub Binter, Daniel Riha, Czech Republic; Hermann Prossinger, Austria

Gender Differences When School Children Develop Digital Game-based Designs: A Case Study

Jeanette Sjöberg, Sweden; Eva Brooks, Denmark

InCuDe: Heuristics for Enhancing Spectator Experience in Streamed Games

Matthew Horton, Janet C. Read, Christopher Willitts, United Kingdom

MobiTAS S329

HCI in Mobility, Transport and Automotive Systems

Walking, Cycling, Driving – Urban Mobility & Street Design for All Road Users

Chair(s): Angelika C. Bullinger, Christina Kaß, Andre Dettmann, Germany

Toolbox for Analysis and Evaluation of Low-Emission Urban Mobility

Felix Böhm, Christine Keller, Waldemar Titov, Mathias Trefzger, Jakub Kuspiel, Swenja Sawilla, Thomas Schlegel, Germany

Employees' Vulnerability – the Challenge When Introducing New Technologies in Local Authorities

Ann-Marie Nienaber, United Kingdom; Sebastian Spundflasch, Germany; Andre Soares, Andree Woodcock, United Kingdom

A Methodological Approach to Determine the Benefits of External HMI during Interactions between Cyclists and Automated Vehicles: A Bicycle Simulator Study

Christina Kaß, Stefanie Schoch, Frederik Naujoks, Sebastian Hergeth, Andreas Keinath, Alexandra Neukum, Germany

User requirement? Travel Mode Choice Routines across different Trip Types

Dorothea Langer, Angelika C. Bullinger, Germany

An Evaluation Environment for User Studies in the Public Transport Domain

Christine Keller, Waldemar Titov, Mathias Trefzger, Jakub Kuspiel, Naemi Gerst, Thomas Schlegel, Germany

AIS S330

**DISCUSSION
PANEL: Predicting
Future Adaptive
Instructional
Capabilities**

Chair(s): Robert A. Sottolare, *United States*

**A Glimpse of the Future
of Adaptive Instructional
Capabilities**

Robert A. Sottolare, *United States*

**Adaptive Instructional
Systems (AISs) for the
Whole Child**

KP Thai, *United States*

**AISs for Accelerating
Expert Medical Decision-
Making in Disaster
Contexts**

Jeanine DeFalco, *United States*

**Extended Classrooms and
Hybrid Tutors: Making
AIS the Teacher's Best
Friend**

Andrew J. Hampton, *United States*

**How COVID-19
Stimulated Increases
in Online Learning will
Accelerate Innovations
in Adaptive Instructional
Capabilities**

Jim Goodell, *United States*

**Bridging the Gap
between AIS Conceptual
Models and Architectural
Components**

Keith Brawner, *United States*

**Levels of Adaptation in
Instructional Systems -
Present and Future**

Robby Robson, *United States*

**Humans on the Loop:
Creating AIS Teaming**

Benjamin Goldberg, *United States*

NOTES

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| HCI | S331 | S332 | S333 | S334 | continues... |
|-----|--|--|---|--|--------------|
| | <p>Visualization for Insights Chair(s): Vinicius Segura, Juliana J. Ferreira, <i>Brazil</i></p> | <p>Novel Theoretical and Design Approaches in HCI Chair(s): Daniel Fitton, <i>United Kingdom</i></p> | <p>Human Robot Interaction - III Chair(s): Piercosma Bisconti Lucidi, <i>Italy</i></p> | <p>Interaction Design and Evaluation Methods - II Chair(s): Lawrence J. Henschen, <i>United States</i></p> | |
| | <p>Reflections on Data Visualization Design by Professionals in the Tourism Field Caroline M. Barroso, Caroline Q. Santos, <i>Brazil</i>; Luciana S. Espindola, <i>Poland</i>; Milene S. Silveira, <i>Brazil</i></p> | <p>"Boundaries do not sit still." From Interaction to Agential Intra-action in HCI Claude Draude, <i>Germany</i></p> | <p>A User Interface for Personalized Web Service Selection in Business Processes Dionisis Margaris, Dimitris Spiliotopoulos, Costas Vassilakis, Gregory Karagiorgos, <i>Greece</i></p> | <p>Eye Movement Classification Algorithms: Effect of Settings on Related Metrics Amin G. Alhashim, <i>United States</i></p> | |
| | <p>Automatic Deformation Detection and Analysis Visualization of 3D Steel Structures in As-Built Point Clouds Rogerio Pinheiro De Souza, Cesar A. Sierra-Franco, Paulo Ivson Netto Santos, Marina Polonia Rios, Daniel Luiz De Mattos Nascimento, Alberto Barbosa Raposo, <i>Brazil</i></p> | <p>Yay! You have a new notification: Co-designing Multi-device Locative Media Experiences with Young People Daniel Fitton, Keith Cheverst, Janet C. Read, <i>United Kingdom</i></p> | <p>Multi-Human Management of Robotic Swarms John R. Grosh, Michael A. Goodrich, <i>United States</i></p> | <p>"With Close Friends It Wouldn't Be Weird": Social Distance and Animoji Use Susan Herring, Ashley Dainas, Holly Lopez Long, Ying Tang, <i>United States</i></p> | |
| | <p>Revisiting Visualization Task Taxonomies: Specifying Functions for the Data Transformations Stage Ariane Moraes Bueno Rodrigues, Gabriel Diniz Junqueira Barbosa, Raul De Araújo Lima, Dieinison Jack Freire Braga, Hélio Cortes Vieira Lopes, Simone Diniz Junqueira Barbosa, <i>Brazil</i></p> | <p>Wizardry in Distributed Participatory Design: from Design to Implementation Malin Wik, Akhona Khumalo, <i>Sweden</i></p> | <p>Sexual Robots: the Social-Relational Approach and the Concept of Subjective Reference Piercosma Bisconti Lucidi, Susanna Piermattei, <i>Italy</i></p> | <p>Design Interface and Modeling Technique Julia C. Lee, Lawrence J. Henschen, <i>United States</i></p> | |
| | | <p>Human Computer Interfaces Reconsidered: A Conceptual Model for Understanding User Interfaces Susanne Koch Stigberg, <i>Norway</i></p> | <p>Enhancing Drone Pilots' Engagement Through a Brain-Computer Interface Tracy Pham, Dante Tezza, Marvin Andujar, <i>United States</i></p> | <p>Brainstorming for Sensemaking in a Multimodal, Multiuser Cognitive Environment Shannon Briggs, Matthew Peveler, Jaimie Drozdal, Lilit Balagoyzian, Jonas Braasch, Hui Su, <i>United States</i></p> | |
| | | <p>Exploring Empowerment in Participatory Design with Teens Janet C. Read, <i>United Kingdom</i></p> | <p>One-hand Controller for Human-Drone Interaction – a Human-centered Prototype Development Sebastian Büttner, Rami Zaitoon, Mario Heinz, Carsten Röcker, <i>Germany</i></p> | <p>Multiuser Human-Computer Interaction Settings: Preliminary Evidence of Online Shopping Platform Use by Couples Armel Quentin Tchanou, Pierre-Majorique Léger, Sylvain Sénécal, Laurie Carmichael, Constantinos Coursaris, Marc Fredette, <i>Canada</i></p> | |
| | | | | <p>Deriving Interaction and Awareness Services From Computer-Mediated Communication Specifications Maximiliano Canche, Sergio F. Ochoa, Daniel Perovich, <i>Chile</i></p> | |



HCI S335

Chatbots and AI

Chair(s): Lynne Coventry, *Spain*

Deception of the "Elephant in the Room": Invisible Auditing Multi-Party Conversations to Support Caregivers in Cognitive Behavioral Group Therapies

Eleonora Aida Beccaluva, Antonio Chiappetta, Julian Cuellar Mangut, Luca Molteni, Marco Mores, Daniele Occhiuto, Franca Garzotto, *Italy*

An antenatal care awareness prototype chatbot application using a user-centric design approach

Mohammed Bahja, Julia Bahja, Nour Abuhwaila, *United Kingdom*

User Trust and Understanding of Explainable AI: Exploring Algorithm Visualisations and User Biases

Dawn Branley-Bell, Rebecca Whitworth, Lynne Coventry, *United Kingdom*

A User-centric Framework for Educational Chatbots Design and Development

Mohammed Bahja, Rawad Hammad, Gibran Butt, *United Kingdom*

HIMI S336

Human-Computer Interaction and Expanded Musical Practice

Chair(s): Eduardo A.L. Meneses, Marcelo M. Wanderley, *Canada*

Human Interface and the Management of Information

An Intermediate Mapping Layer for Interactive Sequencing

Mathias Kirkegaard, Mathias Bredholt, Marcelo M. Wanderley, *Canada*

Expanding and Embedding a High-level Gesture Vocabulary for Digital and Augmented Musical Instruments

Eduardo A.L. Meneses, Takuto Fukuda, Marcelo M. Wanderley, *Canada*

Open Source DMIs: Towards a Replication Certification for Online Shared Projects of Digital Musical Instruments

Filipe Calegario, João Tragtenberg, *Brazil*; Johny Wang, Ivan Franco, Eduardo A.L. Meneses, Marcelo M. Wanderley, *Canada*

A Visualization Tool for the CIRMMT Distinguished Lecture Series

Marcelo M. Wanderley, Mathias Bredholt, Christian Frisson, *Canada*

A Detailed Examination of User Interactions with Two Different Data Interfaces

Rui Wang, Tamara Babaian, *United States*

UAHCI S337

Inclusive Technologies: Development Experiences in Latin America

Chair(s): J. Andrés Sandoval-Bringas, *Mexico*

Universal Access in Human-Computer Interaction

Proposal for an Interactive Software System Design for learning Mexican Sign Language with Leap Motion

Teresita Alvarez-Robles, Francisco Álvarez, Mónica Carreño-Leon, *Mexico*

METUIGA "Methodology for the Design of Systems based on Tangible User Interfaces and Gamification Techniques" - Case Study: Teaching Geometry in Children with Visual Problems

Luis Roberto Ramos Aguiar, Francisco Álvarez, *Mexico*

Makerspaces for Inclusive Education

Cristina G. Reynaga-Peña, *Mexico*; Christopher Myers, *United States*; Juan Manuel Fernandez-Cardenas, Azael Jesus Cortes-Capetillo, Leonardo David Glasserman-Morales, *Mexico*; Eric Paulos, *United States*

Augmented reality as a tool to support the inclusion of colorblind people

Julio Cesar Ponce Gallegos, Martin Montes Rivera, Francisco Javier Ornelas Zapata, Alejandro Padilla Diaz, *Mexico*

S338

Novel Approaches to Universal Access

Chair(s): Ilia Adami, *Greece*

Design of a Tangible Programming Tool for Students with Visual Impairments and Low Vision

Emmanuel Utreras, Enrico Pontelli, *United States*

Interest and Requirements for Sound-Awareness Technologies among Deaf and Hard-of-Hearing Users of Assistive Listening Devices

Peter Yeung, Oliver Alonzo, Matt Huenerfauth, *United States*

Heuristic Evaluation for the Assessment of Inclusive Tools in the Autism Treatment

Gustavo Constain, Cesar Collazos, Habib Fardoun, *Colombia*; Daniyal Alghazzawi, *Saudi Arabia*

A Context Driven Indoor Localization Framework for Assisted Living in Smart Homes

Nirmalya Thakur, Chia Y. Han, *United States*

Perceived Midpoint of the Forearm

Ziyan Lu, Quan Liu, Roger Cholewiak, Hong Z. Tan, *United States*

Robotic Cane for the Visually Impaired

José Varela-Aldás, John Guamán, Belén Paredes, Fernando A. Chicaiza, *Ecuador*

UAHCI S339

Novel Interaction Techniques for Universal Access

Chair(s): Troy McDaniel, *United States*

EyeHear: Smart Glasses for the Hearing Impaired

Ishaan Sinha, Owen Caverly, *United States*

Understanding Pattern Recognition through Sound with Considerations for Developing Accessible Technologies

Nicole Darmawaskita, Troy McDaniel, *United States*

The HapBack: Evaluation of Absolute and Relative Distance Encoding to Enhance Spatial Awareness in a Wearable Tactile Device

Bryan Duarte, Troy McDaniel, Ramin Tadayon, Abhik Chowdhury, Allison Low, Sethuraman Panchanathan, *United States*

Sign Language Interpreter Detection Method for Live TV Broadcast Content

João Guilherme Reiser de Melo, Leandro Paes, Davi Frossard, Rodrigo Ribeiro De Oliveira, *Brazil*

Method for Synchronized Driving of Sign Language Avatar Using a Digital TV signal

Rodrigo Ribeiro De Oliveira, João Guilherme Reiser de Melo, Leandro Paes, Davi Frossard, *Brazil*

Rotate-and-Press: A Non-Visual Alternative to Point-and-Click?

Hae-Na Lee, Vikas Ashok, I.V. Ramakrishnan, *United States*

VAMR S340

DISCUSSION PANEL: Real-Time Character Control - The State of the Art Facilitator

Chair(s): Tamara Griffith, *United States*

Research Results from Various Communication Modalities Provides Insights into Real-Time Character Control

Tamara Griffith, *United States*

Closing the Gap between Real-time Motion Capture and Post-Production Animation

Tabitha Dwyer, *United States*

A wizard-of-Oz tool for teaching negotiation skills

Jonathan Gratch, *United States*

S341

Psychophysiological Effects of VAMR

Chair(s): Crystal Maraj, *United States*

Performance, Simulator Sickness, and Immersion of a Ball-Sorting Task in Virtual and Augmented Realities

Crystal Maraj, Jonathan Hurter, Sean Murphy, *United States*

Did You Say Buttonless? Exploring Alternative Modes of Sensory Engagement for Augmented Reality Storytelling Experiences

Richard Olaniyan, Travis Harvey, Heather Hendrixson, Jennifer Palilonis, *United States*

Improving the Visual Perception and Spatial Awareness of Downhill Winter Athletes with Augmented Reality

Darren O'Neil, Mahmut Erdemli, Ali Arya, Stephen Field, *Canada*

Arms and Hands Segmentation for Egocentric Perspective based on PSPNet and Deeplab

Heverson Sarah, Esteban Clua, Cristina Nader Vasconcelos, *Brazil*

Negative Effects Associated with HMDs in Augmented and Virtual Reality

Charles R. Descheneaux, Lauren Reinerman-Jones, Jason Moss, David Krum, Irwin Hudson, *United States*

S342

New Virtualities - IV

Chair(s): Angelos Barmpoutis, *United States*

Assessing the Role of Virtual Reality with Passive Haptics in Music Conductor Education: A Pilot Study

Angelos Barmpoutis, Randi Faris, Luis Garcia, Luis Gruber, *United States*; Jingyao Li, *P.R. China*; Fray Peralta, *United States*; Menghan Zhang, *P.R. China*

Learning in Virtual Reality: Investigating the Effects of Immersive Tendencies and Sense of Presence

Aliane Loureiro Krassmann, *Brazil*; Miguel Melo, Bruno Peixoto, Darque Pinto, Maximino Bessa, *Portugal*; Magda Bercht, *Brazil*

How augmented reality influences student workload in engineering education

Wenbin Guo, Jung Hyup Kim, *United States*

Augmented Reality for City Planning

Adam Sinclair Williams, Catherine Angelini, Mathew Kress, Edgar Ramos Vieira, Newton D'Souza, Naphtali D. Rishe, Joseph Medina, Ebru Özer, Francisco Ortega, *United States*

Haptic Helmet for Emergency Responses in Virtual and Live Environments

Florian Alber, Sean Hackett, Yang Cai, *United States*

Virtual, Augmented and Mixed Reality

SCSM S343

Ethics and Moderation in Social Media
Chair(s): Koustuv Saha, *United States*

Understanding Moderation in Online Mental Health Communities
Koustuv Saha, Sindhu Kiranmai Ernala, Sarmistha Dutta, Eva Sharma, Munmun De Choudhury, *United States*

A Novel Tool for Online Community Moderator Evaluation
Alicia Takaoka, *United States*

Cyber Risks in Social Media
Linda R. Wilbanks, *United States*

Misinformation in the Chinese Weibo
Lu Xiao, *United States*; Sijing Chen, *P.R. China*

Ethical, Legal & Security Implications of Digital Legacies on Social Media
Paige Zaleppa, Alfreda Dudley, *United States*

DHM S344

Reflections on Developments in Recent Decade
Chair(s): Vincent G. Duffy, *United States*

IMotions ' Automatic Facial Recognition & Text-Based Content Analysis of Basic Emotions & Empathy in the Application of the Interactive Neurocommunicative Technique LNCBT (Line&Numbered Concordant Basic Text)
Jorge Mora-Fernandez, *United States*; Azizudin Khan, *India*; Fernando Estévez, Felipe Webster, María Isabel Fárez, Felipe Torres, *Ecuador*

Classification of Human Posture with RGBD Camera: Is Deep Learning Necessary?
Hongbo Zhang, Denis Gracanin, Mohamed Eltoweissy, *United States*

Jarvis: A Multimodal Visualization Tool for Bioinformatic Data
Mark Hutchens, Nikhil Krishnaswamy, Brent Cochran, James Pustejovsky, *United States*

Safety Analytics for AI Systems
Yang Cai, *United States*

Systematic Literature Review on the Effect of Human Error in Environmental Pollution
Gavin A. Duffy, Vincent G. Duffy, *United States*

Sensory Design in Games: Beyond Visual-Based Experiences
Priscilla Maria Cardoso Garone, Sergio Nesteriuk, Gisela Belluzzo de Campos, *Brazil*

S345

Modern Applications - IV
Chair(s): Ming-Lun (Jack) Lu, *United States*

Development of a Wearable IMU System for Automatically Assessing Lifting Risk Factors
Ming-Lun (Jack) Lu, Menekse Barim, Shuo Feng, Grant Hughes, Marie Hayden, Dwight Werren, *United States*

Personal Air Pollution Monitoring Technologies: User Practices and Preferences
Nina Sakhnini, Ja Eun Yu, Rachael M. Jones, Debaleena Chattopadhyay, *United States*

Evaluation of Occupant Comfort and Health in Indoor Home-based Work and Study Environment
Xingzhou Guo, Yunfeng Chen, *United States*

Outside the Box: Contextualizing User Experience Challenges in Emergency Medical Technician (EMT) and Paramedic Workflows
Katelynn Kapalo, Joseph Bonnell, Joseph LaViola, *United States*

A Design Framework to Automate Task Simulation and Ergonomic Analysis in Digital Human Modeling
Mihir Sunil Gawand, H. Onan Demirel, *United States*

DUXU S346

Design, User Experience & Usability (DUXU), Industry 4.0 and Cyber Security
Chair(s): Hashim Chunpir, Stefan Voß, *Germany*

Mystery Shopping in Public Transport: The Case of Bus Station Design
Stefan Voß, *Germany*; Gonzalo Mejia, *Colombia*; Alexander Voß, *Germany*

Evolution of Public Transport in Rural Areas - New Technologies and Digitization
Joachim Rolf Daduna, *Germany*

Managing Information in the Case of Opinion Spamming
Liping Ge, Stefan Voß, *Germany*

On Designing of a Slot Sharing E-Platform of the Liner Shipping Services
Xiaoning Shi, *Germany*; Lin Ma, *P.R. China*; Stefan Voß, *Germany*

Applications of Real-Time Data to Reduce Air Emissions in Maritime Ports
Philip Cammin, Malek Sarhani, Leonard Heilig, Stefan Voß, *Germany*

Social Computing and Social Media

Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management

Design, User Experience, and Usability

FRIDAY 19:30 - 21:30

DUXU S347

The Role of Disruptive Technologies in Designing Experiential Systems

Chair(s): Venere Ferraro, Ilaria Mariani, *Italy*

Intermodal Improvement: Nudging Users to Use Keyboard Shortcuts

Niels Erik Raurso, Mikkel Kappel Persson, *Denmark*; Kristinn Bragi Garðarsson, *Iceland*; Daniel Mazán, Simon Andreasen, Elizabeth Avotiņa, Alex Ventegodt, Evangelia Triantafyllou, *Denmark*

Other Worlds. When worldbuilding and roleplay feed speculation

Ilaria Mariani, *Italy*

Just a Natural Talk? The Rise of Intelligent Personal Assistants and the (Hidden) Legacy of Ubiquitous Computing

Gabriele Barzilai, Lucia Rampino, *Italy*

User Experience of Alexa, Siri and Google Assistant when Controlling Music – Comparison of Four Questionnaires

Birgit Brüggemeier, Michael Breiter, Miriam Kurz, Johanna Schiwy, *Germany*

Reflecting on New Approaches for the Design for Behavioural Change Research and Practice: Shaping the Technologies through Immersive Design Fiction Prototyping

Mila Stepanovic, Venere Ferraro, *Italy*

Improving the Usability of Voice User Interfaces: A New Set of Ergonomic Criteria

Caroline Nowacki, Anna Gordeeva, Anne Hélène Lizé, *France*

S348

Measures for Emotional Design - II

Chair(s): Francisco Rebelo, Ernesto Filgueiras, *Portugal*

Multimodality, Naturalness and Transparency in Affective Computing for HCI

Sónia Rafael, *Portugal*

UX Criteria Risk in Digital Product Investment: Literature Review

Larissa Rios, Ernesto Filgueiras, Farley Millano Fernandes, *Portugal*

Scales for Knowledge Elicitation; An Experimental Comparison Study

Rui Belfort, *Brazil*; Farley Millano Fernandes, *Portugal*; Fabio Campos, *Brazil*

Measuring Users' Psychophysiological Experience in Non-linear Omnichannel Environment

Ariane Roy, Sylvain Sénécal, Pierre-Majorique Léger, Bertrand Demolin, Émilie Bigras, Julie Gagné, *Canada*

Stress Heatmaps: a Fuzzy-based Approach that Uses Physiological Signals

Alexandros Liapis, Christos Katsanos, Nikos Karousos, Dimitris Sotiropoulos, Michalis Xenos, Theofanis Orphanoudakis, *Greece*

S349

DUXU for Health and Well-Being - II

Chair(s): Tania Roy, *United States*

The Effect of Experience on Learnability and Usability of a Neuroimaging Platform

Thomas Ruel, Pierre-Majorique Léger, Gregory Lodygensky, David Luck, Yang Ding, Sylvain Sénécal, Bertrand Demolin, *Canada*

Prototyping a Mental Health Smartphone Application

Julian Hunter, Tania Roy, *United States*

PLANTY GO: A Smart Planter System to Relieve Stress and Anxiety of Urban Youngsters

Weilun Huang, Zhenyu Cheryl Qian, Jung Joo Sohn, Yunran Ju, *United States*

Preliminary Design of an 'Autonomous Medical Response Agent' Interface Prototype for Long Duration Spaceflight

AMelodie Yashar, Jessica Marquez, Jayant Menon, Isabel Torron, *United States*

Transforming Patient Hospital Experience through Smart Technologies

Haneen Ali, Astin Cole, Gabriella Panos, *United States*

DAPI S350 continues...

Quality of Life in Ambient Environments

Chair(s): John A. Waterworth, *Sweden*

Inverting the Panopticon to Safeguard Privacy in Ambient Environments: an Exploratory Study

Ingvar Tjostheim, *Norway*; John A. Waterworth, *Sweden*

Motivating Physical Exercise in the Elderly with Mixed Reality Experiences

Mark Chignell, Henrique Matulis, Brian Nejati, *Canada*

Artificial Intelligence and Concerns about the Future: A case study in Norway

Kyriaki Kalimeri, *Italy*; Ingvar Tjostheim, *Norway*

Designing for Implicit and Positive Interactions - Artificial Intelligence and the Internet of Things in Support of Car drivers

Mikael Wiberg, *Sweden*

Returning to Nature: VR Mediated States of Enhanced Wellness

Henry J. Moller, *Canada*; John A. Waterworth, *Sweden*; Mark Chignell, *Canada*

Ambient Interaction Design in a Primitive Society

Kei Hoshi, *New Zealand*; John A. Waterworth, *Sweden*

Distributed, Ambient and Pervasive Interactions



DAPI S351

Evidence-Based Investigation on User Experience in Cyber-Physical Systems: Quantitative and Qualitative Learning and Envisioning

Chair(s): Margherita Pillan, *Italy*

Aspects of Ambient UX Design within Design-to-Robotic-Production and -Operation Processes

Milica Pavlovic, *Italy*; Henriette Bier, *Netherlands*; Margherita Pillan, *Italy*

Designing Unconscious and Enactive Interaction for Interactive Movie Experience

Laura Varisco, *Italy*; Giulio Interlandi, *Italy*

Towards an UX Assessment Method for Ai-Enabled Domestic Devices

Davide Spallazzo, *Italy*; Martina Sciannamè, *Italy*; Mauro Ceconello, *Italy*

Ambient UX Research: User Experience Investigation Through Multimodal Quadrangulation

Marco Mandolfo, *Italy*; Milica Pavlovic, *Italy*; Margherita Pillan, *Italy*; Lucio Lamberti, *Italy*

HCI in Business, Government and Organizations

HCIBGO S352

Digital Business Transformation - II

Chair(s): To be announced

Exposing Undergraduate Students to the Challenges of Integrating Technology in Healthcare Delivery

Laura Ikuma, *USA*; Isa Nahmens, *USA*; Craig M. Harvey, *USA*; Dan Godbee, *USA*; Tonya Jagneaux, *USA*

Teamwork in Virtual World - Impact of "Virtual Team" on Team Dynamic

Bin Mai, *USA*; Brittany Garcia, *USA*; Lei Xie, *USA*; Andrew McCubbins, *USA*; Jinsil Seo, *USA*

The Impact of Work from Home (WFH) on Workload and Productivity in Terms of Different Tasks and Occupations

Hongyue Wu, *USA*; Yunfeng Chen, *USA*

Investigating Linguistic Indicators of Generative Content in Enterprise Social Media

Elisavet Averkiadi, *USA*; Wietske Van Osch, *Canada*; Yuyang Liang, *USA*

Learning and Collaboration Technologies

LCT S353

Interaction and Affect in Learning

Chair(s): To be announced

Visualizing Students' Eye Movement Data to Understand their Math Problem-Solving Processes

Shuang Wei, *USA*; Yan Ping Xin, *China*; Yingjie (Victor) Chen, *USA*

Voice Interaction for Training: Opportunities, Challenges, and Recommendations from HCI Perspective

Irina Kondratova, *Canada*; Bruno Emond, *Canada*

Supporting Student-Teacher Interaction Through a Chatbot

Sonia Mendoza, *Spain*; Manuel Hernández-León, *Spain*; Luis Martín Sánchez-Adame, *Spain*; José Rodríguez, *Spain*; Dominique Decouchant, *Mexico*; Amilcar Meneses-Viveros, *Mexico*

Agency Affects Learning Outcomes with a Serious Game

Julien Mercier, *Canada*; Ivan Luciano Avaca, *Canada*; Kathleen Whissell-Turner, *Canada*; Ariane Paradis, *Canada*; Tassos A. Mikropoulos, *Greece*

Do Individual Differences Modulate the Effect of Agency on Learning Outcomes with a Serious Game?

Julien Mercier, *Canada*; Kathleen Whissell-Turner, *Canada*; Ariane Paradis, *Canada*; Ivan Luciano Avaca, *Canada*; Martin Riopel, *Canada*; Melanie Bedard, *Canada*

ITAP S354

Gender, Ageism and Digital Media

Chair(s): Inês Amaral, *Portugal*

Technologies and Images of Older Women

Maria Silveria Agulló-Tomás, *Spain*; Vanesa Zorrilla-Muñoz, *Spain*

Older People as Digital Newcomers: From Evidence to Intervention Proposal

Milica Vukelic, *Serbia*; Svetlana Cizmic, *Serbia*; Dunja Jankovic, *Serbia*; Branislava Vidanovic, *Serbia*; Ivana Petrovic, *Serbia*

Older Women Living in Unfavorable Contexts and Tablets in Uruguay: A Design for Access and Use of Inclusive Information

Martha Sabelli, *Uruguay*

Ageism and Media Generations in the Croatian Post-socialist Context

Antonija Čuvalo, *Croatia*

Masculinities and Ageing: Deconstructing Online Representations among Portuguese Speaking Users

Sofia José Santos, *Portugal*; Inês Amaral, *Portugal*; Maria José Brites, *Portugal*

Human Aspects of IT for the Aged Population

ITAP S355

Digital Gaming Among Older Populations

Chair(s): Eugène Loos, *Netherlands*

Older Adults' Motivation for Physical Activity Using Gamified Technology: An Eight-Week Experimental Study

Dennis L. Kappen, Pejman Mirza-Babaei, Lennart E. Nacke, *Canada*

The Relationship between the Seniors' Appraisal of Cognitive-Training Games and Game-Related Stress is Complex: a Mixed-Methods Study

Najmeh Khalili-Mahani, *Canada*; Bob De Schutter, *United States*; Kim Sawchuk, *Canada*

Create Video Games to Promote Well-being of Elderly People – a Practice-Driven Guideline

Marco Soldati, Carmen Zahn, Doruk Bildibay, Tabea Iseli, David Leisner, Mario Niederhauser, Markus Recher, *Switzerland*

Designing an Online Escape Game for Older Adults: The Implications of Playability Testing Sessions with a Variety of Dutch Players

Amir Doroudian, *Canada*; Eugène Loos, Anne Ter Vrugt, *Netherlands*; David Kaufman, *Canada*

S356

Digital Media Across Generations

Chair(s): Francesca Comunello, Valentina Volpi, *Italy*

Online Cultural Participation in Italy. The Role of Digital Media across Generations

Paola Panarese, Vittoria Azzarita, *Italy*

Young and Elderly Fashion Influencers

Manuela Farinosi, Leopoldina Fortunati, *Italy*

Communicating a Scattered Cultural Urban Event: A Survey on User Needs across Generations

Valentina Volpi, Antonio Opromolla, Carlo Maria Medaglia, *Italy*

Defining User Requirements of a eHealth Mobile App for Elderly: the HomeCare4All Project Case Study

Roberta Grimaldi, Eliseo Sciarretta, Giovanni Andrea Parente, *Italy*

Media, Generations, and the Platform Society

Piermarco Aroldi, Fausto Colombo, *Italy*

HCI-Games S357

HCI in Games

Serious Games for Well-Being

Chair(s): To be announced

A Self-Adaptive Serious Game for Eye-Hand Coordination Training

Leonardo Cardia da Cruz, Cesar A. Sierra-Franco, Greis Francy M. Silva-Calpa, Alberto Barbosa Raposo, *Brazil*

Learn to Cook for Yourself: Employing Gamification in a Recipe App Design to Promote a Healthy Living Experience to Young Generation

Pengyu Patrick Ren, Zhenyu Cheryl Qian, Jung Joo Sohn, *United States*

Multidisciplinary Iterative Design of Exergames (MIDE): A Framework for Supporting the Design, Development, and Evaluation of Exergames for Health

Yirou Li, John Munoz, Samira Mehrabi, Laura Middleton, Shi Cao, Jennifer Boger, *Canada*

E-sport practices and experiences: the case 522 university students

Thierry Karsenti, Simon Parent, *Canada*

Usability Study of Online Game Addiction Help Site

Jianle He, Qiping Zhang, *United States*

Adaptive Instructional Systems AIS S358

Adaptive Instructional Systems

Ethics, Design and Research Considerations for Adaptive Instructional Systems

Chair(s): Andrew J. Hampton, *United States*

Dewey's Ethics of Moral Principles and Deliberation: Extending IEEE's Ethics Initiative for Adaptive Instructional Systems

Jeanine DeFalco, Andrew J. Hampton, *United States*

Training Simulations as Literacy and Numeracy Tools

James Ness, Engineering Psychology Class of 2020 USMA Graduates, *United States*

Knowledge-to-Information Translation Training (KITT): An Adaptive Approach to Explainable Artificial Intelligence

Robert Thomson, *United States*; Jordan Richard Schoenherr, *Canada*

User Rights and Adaptive A/IS – From Passive Interaction to Real Empowerment

Ozlem Ulgen, *United Kingdom*

Adapting the Zone of Proximal Development to the Wicked Environments of Professional Practice

Jordan Richard Schoenherr, *Canada*

C&C S359

HCI in Cultural and Creative Industries - II

Chair(s): To be announced

Increasing the Museum Visitor's Engagement through Compelling Storytelling based on Interactive Explorations

Ana Rodrigues, Pedro Campos, Diogo Cabral, *Portugal*

Model for the Optimization of the Rendering Process, the Reduction of Workflow and Carbon Footprint

Felipe González-Restrepo, Jorge Andrés Rodríguez-Acevedo, Sara B. Ibarra-Vargas, *Colombia*

A Methodological Reflection: Deconstructing Cultural Elements for Enhancing Cross-cultural Appreciation of Chinese Intangible Cultural Heritage

Shichao Zhao, *United Kingdom*

Computer Science Intersects Humanities: Visualization Projects for Liberal Arts Undergraduate Students through an Interdisciplinary Approach Using Software Development Skills and Japanese Cultural Knowledge

Hiroko Chiba, David Berque, *United States*

Exploring Augmented Reality as a Craft Material

Lauren Edlin, Yuanyuan Liu, Nick Bryan-Kinns, Joshua Reiss, *United Kingdom*

NOTES

Handwritten notes area with horizontal lines.

- Palm-controlled Pointing Interface using a Dynamic Photometric Stereo Camera**
 Yoshio Matsuda, Takashi Komuro, Takuya Yoda, Hajime Nagahara, Shoji Kawahito, Keiichiro Kagawa, *Japan*
- Effect of Dialogs' Arrangement on Accuracy and Workload for Confirming Input Data**
 Keiko Yamamoto, Hiroki Kawaguchi, Yoshihiro Tsujino, *Japan*
- Training Young Cybersecurity Talents – The Case of Estonia**
 Kaido Kikkas, Birgy Lorenz, *Estonia*
- An Experiment Study of Service Discovery using the Extreme Learning Machine based Approach**
 Wei Zhao, Zhao Huang, *P.R. China*
- The Evolution of "GOJEK" as an Indonesian Urban Mobile Ride Hailing Model Study Case: Public and Government Regulatory Responses on Urban Mobile Ride Hailing**
 Ajree D Malawani, Salahudin Salahudin, Zuly Qodir, Mohammad Jafar Loilatu, Achmad Nurmandi, *Indonesia*
- Construction of Airlines Safety Subculture based on Human Factor Analysis**
 Yuan Zhang, Yanqiu Chen, Mingliang Chen, *P.R. China*
- A Study on Framework Development and Augmented Reality Technological Factors Consumers' Evaluation for Cultural and Creative Products**
 Yu-Ju Lin, *Taiwan*
- Machine Translation from Japanese to Robot Language for Human-Friendly Communication**
 Nobuhito Manome, Shuji Shinohara, Kouta Suzuki, Shunji Mitsuyoshi, *Japan*
- Communication Support Utilizing AAC for Verbally Challenged Children in Developing Countries during COVID-19 Pandemic**
 Walia Farzana, Farhana Sarker, *Bangladesh*; Ravi Vaidyanathan, *United Kingdom*; Tom Chau, *Canada*; Khondaker A. Mamun, *Bangladesh*
- The Development Dilemma and Countermeasures of Strong Artificial Intelligence in Meeting Human Emotional Needs**
 Kun Fang, *P.R. China*
- Information Analysis with FlexIA - Reconciling Design Challenges through User Participation**
 Christian Kruse, Daniela Becks, Sebastian Venhuis, *Germany*
- Faye: An Empathy Probe to Investigate Motivation among Novice Runners**
 Daphne Menheere, Carine Lallemand, Mathias Funk, Steven Vos, *Netherlands*
- Robot Use for Older Adults – Attitudes, Wishes and Concerns. First Results from Switzerland**
 Stephanie Lehmann, Esther Ruf, Sabina Misoch, *Switzerland*
- Processing of Sensory Information is Affected by BCI Feedback being Perceived**
 Nikolay Syrov, Dmitry Bredichin, Alexander Kaplan, *Russia*
- An Evaluation of Augmentative and Alternative Communication Research for ASD Children in Developing Countries: Benefits and Barriers**
 Walia Farzana, Farhana Sarker, Quazi Delwar Hossain, *Bangladesh*; Tom Chau, *Canada*; Khondaker A. Mamun, *Bangladesh*
- User Vocabulary Choices of the Voice Commands for Controlling In-Vehicle Navigation Systems**
 An-Che Chen, Meng-Syuan Li, Chih-Ying Lin, Min-Cian Li, *Taiwan*
- Multi Remote Tower - Challenge or Chance? An Empirical Study of Air Traffic Controllers Performance**
 Maximilian Peukert, Lothar Meyer, Billy Josefsson, *Sweden*

- Virtual Reality Body Exposure Therapy for Anorexia Nervosa - A Single Case Study**
Bruno Porras-Garcia, Marta Ferrer-García, Eduardo Serrano-Troncoso, Marta Carulla-Roig, Pau Soto-Usera, Laura Fernández-Del Castillo Olivares, Natalia Figueras-Puigderajols, José Gutiérrez-Maldonado, *Spain*
- Evaluating Character Embodiment and Trust towards AI based on a Sleep Companion**
Andreas Schmid, Maximilian Fuchs, Dominik Anhorn, Mareike Gabele, Steffi Husslein, *Germany*
- Challenges of Simulating Uncertainty of Information**
Adrienne Raglin, Somiya Metu, Dawn Lott, *United States*
- Making Others' Efforts Tangible – How Other Learners Affect Climate Fostering Long-Term Self-Paced Learning in Virtual Environment**
Shogo Imada, Naoko Hayashida, Hideaki Kuzuoka, Kenji Suzuki, Mika Oki, *Japan*
- Developing Autonomous Adaptive Behavior for Human Behavior Simulation of an Atypical Architectural Space**
Yun Gil Lee, *Korea*
- Developing a Deployment Technology for Virtual Users with an Autonomous Psychological Behavioral Simulation in Atypical Architectural Space**
Ji Min Park, Hyangsun Lee, Sujin Kim, Yun Gil Lee, *Korea*
- Machine Learning and Human-Computer Interaction Technologies in Media and Cognition Course**
Yi Yang, Jiasong Sun, *P.R. China*
- Communicating issues in automated driving to surrounding traffic**
Julian Schindler, Domenic Herbig, Merle Lau, Michael Oehl, *Germany*
- Generation of Brass Band Animation Synchronized with the Motion of Conductor's Hand**
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- Classification and Recognition of Space Debris and its Pose Estimation based on deep learning of CNNs**
Roya Afshar, *P.R. China*; Shuai Lu, *Hong Kong*
- Participatory Management for Cultural Heritage: Social Media and Chinese Urban Landscape**
Xiaoxu Liang, *Italy*
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Laure De Cock, Kristien Ooms, Nico Van de Weghe, Philippe De Maeyer, *Belgium*
- 'Bring Your Own Device' in VR: Intuitive Second-screen Experiences in VR Isolation**
Konstantinos C. Apostolakis, George Margetis, Constantine Stephanidis, *Greece*
- Concept for Human and Computer to Determine Reason Based Scene Location**
Adrienne Raglin, Andre Harrison, *United States*
- Technology for Training: Acquisition Recommender Support Tool**
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- Research in User-Centered Design 2009 to 2018: A Systematic Keyword Network Analysis**
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- Research on Aesthetic Perception of Artificial Intelligence Style Transfer**
Chia Hui Feng, Yu-Chun Lin, Yu-Hsiu Hung, Chao-Kuang Yang, Liang-Chi Chen, Shih-Wei Yeh, Shih-Hao Lin, *Taiwan*
- Proposal of a Career Selection Support System for High School Students by Visualizing Occupations**
Ryuhei Kubota, Tomofumi Uetake, *Japan*

- **Rethinking Continuous University Education for Professionals – a Podcast-Based Course on Service Design and AI**
Pontus Wärnestål, Jeanette Sjöberg, *Sweden*
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Rutuja More, *India*
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Miao-Hsien Chuang, Ming-Shien Wen, You Shan Lin, *Taiwan*
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Miao-Hsien Chuang, Chin-Lung Chen, Jui-Ping Ma, *Taiwan*
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Qian Wu, Dion Hoe-Lian Goh, Chei Sian Lee, *Singapore*
- **An Evaluation Model of Commercial Ring Designs from Cognitive and Emotional Aspects Based on the Quantification Theory I**
Ting Liu, Jian Shi, *P.R. China*
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Sergey Kruzhirov, *Russia*
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Tyler Kass, John Coffey, Steven Kass, *United States*
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Jen-I Chiu, Mengping Tsuei, *Taiwan*
- **A study on presentation method of video thumbnail on SNS using Micro-Moments**
Wonseok Yang, *Japan*; Cliff Shin, *United States*
- **Emergence of Human-Centric Information Security - Towards an Integrated Research Framework**
Bin Mai, *United States*
- **Research on Safety Risk Management Programme, Procedures and Standards in Aircraft Design and Manufacture Organizations Based on Multi-Management Systems Integration**
Mei Rong, Ying Liu, Weihua Jiang, *P.R. China*
- **Strong Stimulation with Virtual Reality Treatment for Acrophobia and Its Evaluation**
Chang Su, *P.R. China*; Makio Ishihara, *Japan*
- **Software Log Anomaly Detection through One Class Clustering of Transformer Encoder Representation**
Rin Hirakawa, Keitaro Tominaga, Yoshihisa Nakatoh, *Japan*
- **Simulation of Pseudo Inner Reading Voices and Evaluation of Effect on Human Processing**
Yu Yamaoka, Ando Hideyuki, *Japan*
- **The Soundomat**
Astrid Kjeldal Graungaard, Laura Kathrine Schmidt, August Emil Enghoff, Marc Descours Hansen, Johanne Fogsgaard, *Denmark*
- **Quantifying Museum Visitor Attention Using Bluetooth Proximity Beacons**
Jonathan D.L. Casano, Jenilyn L. Agapito, Abigail Moreno, Ma. Mercedes T. Rodrigo, *Philippines*
- **Effects of Virtual Reality Mudslide Games with Different Usability Designs on Fifth-Grade Children's Learning Motivation and Presence Experience**
Mengping Tsuei, Jen-I Chiu, *Taiwan*
- **Defect Annotation on Objects using a Laser Remote Control**

- Christian Lengenfelder, Gerrit Holzbach, Michael Voit, Jürgen Beyerer, *Germany*
- **Speech Emotion Recognition from Social Media Voice Messages Recorded in the Wild**
Lucía Gómez-Zaragozá, Javier Marín-Morales, Elena Parra, Jaime Guixeres, Mariano Alcañiz, *Spain*
 - **Calculation and Validation of Driver's Readiness for Regaining Control from Autonomous Driving**
Woojin Kim, Hyun Suk Kim, Seung-Jun Lee, Daesub Yoon, *Korea*
 - **Research on the Design of Regional Cultural and Creative Products Based on Consumer Cognition**
Dawei Fan, *P.R. China*
 - **Proof of Concept for an Indicator of Learner Anxiety via Wearable Fitness Trackers**
Jonathan Shachter, *Japan*; Maria Kangas, Naomi Sweller, *Australia*; Jeffrey Stewart, *Japan*
 - **Research on the Monitoring of Human Auditory and Visual Stimulation based on Brain Wave Visualization System**
Qi Chen, *Chile*
 - **The Utility of Digitally Supported Manual Interactive Mockups**
John Sören Pettersson, *Sweden*
 - **Mobile Social Media Interface Design for Elderly in Indonesia**
Restyandito Restyandito, Febriyandi Febriyandi, Kristian Adi Nugraha, Danny Sebastian, *Indonesia*
 - **Users' internal HMI information requirements for highly automated driving**
Merle Lau, Marc Wilbrink, Janki Dodiya, Michael Oehl, *Germany*
 - **Development of a Driver-state Adaptive Co-driver as Enabler for Shared Control and Arbitration**
Andrea Castellano, Giuseppe Carbonara, *Italy*; Sergio Diaz, Mauricio Marcano, *Spain*; Fabio Tango, Roberto Montanari, *Italy*
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Jungyun Kim, Toshiki Takeuchi, Tomohiro Tanikawa, Takuji Narumi, Hideaki Kuzuoka, Michitaka Hirose, *Japan*
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Hiroshi Suzuki, Hisashi Sato, *Japan*
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Chao-Hung Wang, Chih-Yu Hsiao, An-Ting Tai, Mao-Jiun J. Wang, *Taiwan*
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Murali Subramaniam, *India*; Kyung-Sun Lee, Se Jin Park, Seung Nam Min, *Korea*
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Hao Tan, Jialing Li, *P.R. China*
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Miki Namatame, Masami Kitamura, Meguru Ohishi, Chie Sonoyama, Seiji Iwasaki, *Japan*
 - **An Interactive Model of Physical Fitness Activity for the Elderly**
Chen-Fu Chen, Hung-Ken Lee, *Taiwan*
 - **Preliminary Investigation of Women Car Sharing Perceptions through a Machine Learning Approach**

Andrea Chicco, Miriam Pirra, Angela Carboni,
Italy

- **Affordance Requirements in Product Interface Design for Elderly User**
Hui-Qing Cai, Li-Hao Chen, *Taiwan*
- **Examining Independent Podcasts in Portuguese iTunes**
Maria João Antunes, *Portugal*; Ramón Salaverría, *Spain*
- **Research on Human-Computer Interaction of Online Course System for “New Media Management” Course of The Major of Journalism and Communication**
Xiuyuan Guo, Yuxuan Xiao, *P.R. China*
- **Research on Interface Design for the Elderly**
Ruo-Qiao Zhao, Li-Hao Chen, *Taiwan*
- **Exploring the Value of Shared Experience in Augmented Reality Games**
Hye Sun Park, Byung-Kuk Seo, *Korea*; Gun A. Lee, Mark Billingham, *Australia*
- **Different ways of interacting with videos during learning in secondary physics lessons**
David Leisner, Carmen Zahn, Alessia Ruf, Alberto Cattaneo, *Switzerland*
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Naina Dhingra, Eugenio Valli, Andreas Kunz, *Switzerland*
- **Problematic Use of the Internet - using Machine Learning in a Prevention Programme**
Eryka Probiez, Adam Galuszka, *Poland*
- **Mercury’s Boots: extending the visual information and enabling to move around the remote place for VR avatar**
Koki Toda, Sayuki Hayashi, *Japan*

- **Improving the Detection of User Uncertainty in Automated Overtaking Maneuvers by Combining Contextual, Physiological and Individualized User Data**
Alexander Trende, Franziska Hartwich, Cornelia Schmidt, Martin Fränze, *Germany*
- **Measuring the Accuracy of Inside-Out Tracking in XR Devices Using a High-Precision Robotic Arm**
Daniel Eger Passos, Bernhard Jung, *Germany*
- **Shaping Social Relationships Digitally: WhatsApp’s Influence on Social Relationships of Older Adults**
Veronika Hämmerle, Rhea Braunwalder, Cora Pauli, Sabina Misoch, *Switzerland*
- **Survey on Dining Experiences of Overseas Travelers**
Rieko Inaba, Naoko Fujimaki, *Japan*
- **Augmented Reality as an Educational Resource Applied to the Teaching of Pre-Columbian Cultures Settled in the Pumapungo Archaeological Park**
Edgar Marcelo Espinoza Méndez, *Ecuador*
- **Pilot study on the development of a new wearable tactile feedback device for welding skills training**
Manabu Chikai, Junji Ohyama, Seiichi Takamatsu, Shuichi Ino, *Japan*
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Adrian H. Hoppe, Florian Van de Camp, Rainer Stiefelhagen, *Germany*
- **Role-Based Design of Conversational Agents: Approach and Tools**
Ilaria Scarpellini, *Italy*; Yihyun Lim, *United States*
- **Efficient Exploration of Long Data Series: A Data Event-driven HMI Concept**
Bertram Wortelen, Viviane Herdel, Oliver Pfeiffer, Marie-Christin Harre, Marcel Saager, Mathias Lanezki, *Germany*

- **Requirements for an Autonomous Taxi and a Resulting Interior Concept**
Manuel Kipp, Ingrid Bubb, Johannes Schwiebacher, Ferdinand Schockenhoff, Adrian König, Klaus Bengler, *Germany*
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Artem Ryndin, Ekaterina Pakulova, Gennady Veselov, *Russia*
- **Enabling Authors to Produce Computable Phenotype Measurements: Usability Studies on the Measurement Recorder**
Limin Zhang, Hong Cui, *United States*; Bruce Ford, *Canada*; Hsin-liang Cheng, *United States*; James Macklin, *Canada*; Anton Reznicek, Julian Starr, *United States*
- **An Analysis of Trends and Connections in Google, Twitter, and Wikipedia**
Gianluca Conti, Giuseppe Sansonetti, Alessandro Micarelli, *Italy*
- **How Much Should I Pay? An Empirical Analysis on Monetary Prize in TopCoder**
Mostaan Lotfalian Saremi, Razieh Saremi, Denisse Martinez-Mejorado, *United States*
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Yihui Li, Meiyu Zhou, Xiaohan Wu, *P.R. China*
- **Development of a Quantification Method for Tendon Vibration Inducing Motion Illusion**
Hiroyuki Ohshima, Hitoshi Ishido, Yusuke Iwata, Shigenobu Shimada, *Japan*
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Chisato Amada, Yu Matsumoto, Kazuyuki Mito, Tota Mizuno, Naoaki Itakura, Taiyo Nakashima, Takeshi Hanada, *Japan*
- **Perceived Usability Evaluation of 360° Immersive Video Service: Empirical Evaluation of the System Usability Scale**
Fei-Hui Huang, *Taiwan*
- **Modeling Learners' Programming Skills and Question Levels through Machine Learning**
WooJeong Kim, Soyoung Rhim, John Y.J. Choi, Kyungsik Han, *Korea*
- **Exposure compensation from a single image**
Keitaro Kawamori, Ryo Akamatsu, Yuta Muraki, *Japan*; Toshiaki Kondo, *Thailand*; Ken-ichi Kobori, *Japan*
- **Mental Effort and Usability of Assistance Systems in Manual Assembly – A Comparison of Pick-to-Light and AR Contours through VR Simulation**
Annemarie Minow, Stefan Stüring, Irina Boeckelmann, *Germany*
- **Investigation of Psychological Evaluation and Estimation Method using Skin Temperature of Lower Half of Face**
Tota Mizuno, Kazuyuki Mito, Naoaki Itakura, *Japan*
- **Preliminary Study on the Influence of Visual Cues, Transitional Environments and Tactile Augmentation on the Perception of Scale in VR**
Tobias Delcour Jensen, Filip Kasprzak, Hunor-Gyula Szekely, Ivan Nikolov, Jens Stokholm Høngaard, Claus Madsen, *Denmark*
- **User-Specific Interfaces of Teaching Devices for Manipulation of Collaborative Robots**
Jeyoun Dong, *Korea*
- **Automotive HMI Development in Virtual Reality: Lessons Learned from Current Studies**
Duc Hai Le, Michael Oehl, Gerald Temme, *Germany*
- **Attention! Designing a Target Group-oriented Risk Communication Strategy**
Lara Raffel, Patrick Bours, *Norway*; Sashidharan Komandur, *India*

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Huiyun Wang, Mo Wu, Jing-Yu Zhang, *P.R. China*

- **Theorization Human-Computer Interaction in the All-Digital Car: Mediatized Driver Experiences**

Sarah Viktoria Christiane Von Hören, *Germany*

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Jutta Hild, Michael Voit, Elisabeth Peinsipp-Byma, *Germany*

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Kathrin Koebel, Doris Agotai, *Switzerland*

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Catharina Muench, Lena Feulner, Ricardo Muench, Astrid Carolus, *Germany*

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Steffi Kohl, *Germany*; Mark Graus, Jos Lemmink, *Netherlands*

- **Extracting Kansei Evaluation Index Using Time Series Text Data: Examining Universality and Temporality**

Runa Yamada, Sho Hashimoto, Noriko Nagata, *Japan*

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Shih-Chieh Liao, Fong-Gong Wu, Chia-Hui Feng, Cheng-Yan Shuai, *Taiwan*

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Ke Sun, Hong Chen, *P.R. China*

- **Limiting experience and cognition by flexibility, Interaction design and cybernetics**

Tore Gulden, *Norway*; Frederick Steier, *United States*

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Eva Lampen, Maximilian Liersch, Jannes Lehwald, *Germany*

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Mandy Korzetz, Romina Kühn, Uwe Aßmann, Thomas Schlegel, *Germany*

- **Towards Interaction Design for Mobile Devices in Collocated Mixed-Focus Collaboration**

Romina Kühn, Mandy Korzetz, Dominik Grzelak, Uwe Aßmann, Thomas Schlegel, *Germany*

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Takashi Kuwahara, Itsuki Takahashi, Shintaro Harikae, *Japan*

- **Process Automation in the Translation of Standard Language Texts into Easy-to-Read Texts – A Software Requirements Analysis**
Claudia Hösel, Christian Roschke, Rico Thomanek, Tony Rolletschke, Benny Platte, Marc Ritter, *Germany*
- **“Light On”: a Voice Controlled Vehicle-light System Based on Translating Drivers’ Voice into Computer Commands to Reduce Operation Workload of Drivers**
Yuan Yin, *United Kingdom*
- **A Robot Agent that Learns Group Interaction through a Team-Based Virtual Reality Game using Affective Reward Reinforcement Learning**
Chawakorn Chaichanawirote, *Thailand*; Masataka Tokumaru, *Japan*; Siam Charoenseang, *Thailand*
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Julie A. Kent, *United States*
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Dezhi Wu, Joseph Johnson, *United States*
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Anna Kushnir, Nicholas H. Müller, *Germany*
- **Behavioral Research and Service Innovation of Cinema Viewers in China**
Xiaofang Yuan, Qiuji Jiang, *P.R. China*
- **Evaluation of Incongruent Feeling during Mouse Operation Using Eye Gaze and EEG**
Koki Shimizu, Takashi Ito, Syohei Ishizu, *Japan*
- **Development and Initial Feasibility Testing of the Virtual Research Navigator (VRN): A Public-Facing Agent-Based Educational System for Clinical Research Participation**
Sharon Mozgai, Arno Hartholt, Dayo Akinyemi, Katrina Kubicek, Albert (Skip) Rizzo, Michele Kipke, *United States*
- **Effectiveness of Color and Shape Matching Learning in Figurenotes System Using Musical Instrument Software**
Rui Sotome, Chiharu Watanabe, Aya Shirai, Manami Matsuda, Tota Mizuno, Naoaki Itakura, Kazuyuki Mito, *Japan*
- **An Empirical Study on Feature Extraction in DNN-based Speech Emotion Recognition**
Panikos Heracleous, Kohichi Takai, Yanan Wang, Keiji Yasuda, Akio Yoneyama, Yasser Mohammad, *Japan*
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Kazuyuki Mito, Chiharu Watanabe, Rui Sotome, Aya Shirai, Tota Mizuno, Naoaki Itakura, Manami Matsuda, *Japan*
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Satoshi Tsuda, Yuta Muraki, Ken-ichi Kobori, *Japan*
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Albert Espinoza, Puerto Rico; Bernardo Restrepo, Edwar Romero-Ramirez, *United States*
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Erin Kasson, Lijuan Cao, Ming Huang, Dezhi Wu, Patricia Cavazos-Rehg, *United States*
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Julian King, Ralf Schneider, *United States*
- **An Idea of Designer`s Reasoning**
Ye Wang, *P.R. China*
- **Deep Learning-based Automatic Pronunciation Assessment for Second Language Learners**
Kohichi Takai, Panikos Heracleous, Keiji Yasuda, Akio Yoneyama, *Japan*

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David Lin, Gregory Warner, Weijie Lin, *United States*
- **Usability Study of a Pre-anesthesia Evaluation App in an University Hospital: Before the Revision of User Interface**
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Yanzi Sun, Yu Matsumoto, Kazuyuki Mito, Tota Mizuno, Naoaki Itakura, Takeshi Hanada, Taiyo Nakashima, *Japan*
- **Impression Estimation Model for Clothing Patterns Using Neural Style Features**
Natsuki Sunda, Kensuke Tobitani, Iori Tani, Yusuke Tani, Noriko Nagata, Nobufumi Morita, *Japan*
- **Searching for Onomatopoeia Based on Sound Similarity by Employing User Reviews**
Ryuta Yamada, Takashi Ito, Syohei Ishizu, *Japan*
- **iVIS: Interpretable Interactive Visualization for User Behavior Clusters**
Yieun Kim, Yohan Bae, Junghyun Kim, Yeonghun Nam, *Korea*
- **The effect of visual and vibro-tactile feedback during floor cleaning task on motion and task performance**
Tsubasa Maruyama, Kodai Ito, Mitsunori Tada, Takuro Higuchi, *Japan*
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Zi-Ru Chen, *Taiwan*
- **Classification of Emotions Indicated by Walking Using Motion Capture**
Yusuke Ishida, Hisaya Tanaka, *Japan*
- **Comparison of Stress Reduction Effects among Heartbeat Feedback Modalities**

Kodai Ito, Hiroshi Suga, Ryota Horie, Mitsunori Tada, *Japan*

- **Affective analysis of visual and vibro-tactile feedback during floor cleaning task using heart rate variability**
Kodai Ito, Tsubasa Maruyama, Mitsunori Tada, Takuro Higuchi, *Japan*
- **Simultaneous Speech Subtitling Systems for Multiple Speakers**
Takuya Suzuki, *Japan*
- **Co-occurrence based Security Event Analysis and Visualization for Cyber Physical Systems**
HyungKwan Kim, Seungoh Choi, Jeong-Han Yun, Byung-Gil Min, Hyoung Chun Kim, *Korea*
- **Explore the Usability of the Cultural Museum Website – An Example of Pazeh Cultural Museum**
Hsiu Ching Laura Hsieh, *Taiwan*
- **Using Block-Based Programming and Sunburst Branching to Plan and Generate Crisis Training Simulations**
Dashley Rouwendal van Schijndel, Audun Stolpe, Jo E. Hannay, *Norway*
- **The Right to Privacy in Socio-Technical Smart Home Settings - Privacy Risks in Multi-Stakeholder Environments**
Marina Konrad, Sabine Koch-Sonneborn, Christopher Lentzsch, *Germany*
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Araceli Patricia Alcarraz Gomez, Ann-Charlott Karlsen, Bjørn Arild Lunde, Susanne Koch Stigberg, *Norway*
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Alexander Arntz, Sabrina C. Eimler, *Germany*
- **LINE based Learning System for IT Security Practices through Intrinsic Motivation**
Yukio Ishihara, Makio Ishihara, *Japan*

- **Analysis of Conducting Waves using Multi-Channel Surface EMG based on Difference in the Electrode Shape**
Kohei Okura, *Japan*; Marzieh Aliabadi Farahani, *Iran*; Yu Matsumoto, Kazuyuki Mito, Tota Mizuno, Naoaki Itakura, *Japan*
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Jung Yong Kim, Min Cheol Whang, Dong Joon Kim, Heasol Kim, Sungkyun Im, *Korea*
- **Development of a Non-Immersive VR Reminiscence Therapy Experience for Patients with Dementia**
Angela Tabafunda, Shawn Matthews, Rabia Akhter, Alvaro Uribe-Quevedo, Winnie Sun, Sheri Horsburgh, Carmen Lafontaine, *Canada*
- **Automatic Spoken Language Identification Using Emotional Speech**
Panikos Heracleous, Akio Yoneyama, Kohichi Takai, Keiji Yasuda, *Japan*
- **A method of shape deformation using a cage considering shape features**
Takayuki Kanaya, Naoyuki Awano, Yuta Muraki, Ken-ichi Kobori, *Japan*
- **“Ad Meliora”: Towards an Improved Approach to Global Software Engineering Curriculum**
Simona Vasilache, *Japan*
- **All you need is Web: Visual Interaction with No Graphic Background**
Andrii Bogachenko, Igor Tolmachov, Daria Voskoboinikova, Inna Bondarenko, Yevhenii Buhera, *Ukraine*; Dongjoo Ko, *Korea*; Svitlana Alkhimova, *Ukraine*
- **Human-Centered Artificial Intelligence – Antecedents of Trust for the usage of Voice Biometrics for driving contactless interactions**
Rohan Kathuria, Ananay Wadehra, Vinish Kathuria, *India*
- **Building cognitive readiness and resilience skills for situation assessment and diagnostic reasoning in a VR CR**
Jari Laarni, Marja Liinasuo, Satu Pakarinen, Kristian Lukander, Tomi Passi, Ville Pitkänen, Leena Salo, *Finland*
- **The Use of Human-Centered AI to Augment the Health of Older Adults**
Ronit Kathuria, Vinish Kathuria, *India*
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Neha Neha, Eunyoung Kim, *Japan*
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Vyacheslav Olshevsky, Ivan Bondarets, Oleksandr Trunov, Artem Shcherbina, Svitlana Alkhimova, *Ukraine*
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Benjamin Ewerz, Peter Mörtl, *Austria*
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Xiaohan Wu, Meiyu Zhou, Yihui Li, *P.R. China*
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Michael Falk, Marcel Saager, Marie-Christin Harre, Sebastian Feuerstack, *Germany*
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Lucas Barreiro Agostini, Tatiana Aires Tavares, *Brazil*
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Areej Al-Wabil, Ghadah Alofisan, Bayan AlArifi, *Saudi Arabia*
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Atheer Alkhalifa, Sarah Alasraj, Eman Alnkhilan, Kholood Alsadhan, Taghreed Alsuhaibani, Areej Al-Wabil, *Saudi Arabia*

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Nwarh Alosaimi, Aalya AlBeeshi, Elham Almahmoud, Elaf Almahmoud, Hind Alshammari, *Saudi Arabia*
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Reem Alqadi, *Saudi Arabia*; Maryam Alhowaiti, *Australia*; Fatimah Almohaimeed, Mawaddah Alsabban, *Saudi Arabia*; Sujithra Raviselvam, *Singapore*
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Patrick Baber, Marcel Saager, Bertram Wortelen, *Germany*
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Dario Borrelli, Razieh Saremi, Sri Vallabhaneni, Antonio Pugliese, Rohit Shankar, Denisse Martinez-Mejorado, Luca Iandoli, Jose Emmanuel Ramirez- Marquez, Carlo Lipizzi, *United States*

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Duaa Bukhari, *Saudi Arabia*
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Joseph Chambers, *United States*
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Chun-Wen Chen, Wei-Chieh Lee, *Taiwan*
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Shanshan Chen, Yajun Li, *P.R. China*
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Charlotte Esteban, Thomas Beauvisage, *France*
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Chen Feng, *P.R. China*; Midori Sugaya, *Japan*
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Guillermo Palacios-Navarro, Iván García-Magariño, *Spain*
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Anca-Simona Horvath, *Denmark*; Viola Rühse, *Austria*
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Yun-Chi Huang, *Taiwan*
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Hyesun Hwang, *Korea*; Xu Li, *P.R. China*; Muzi Xiang, Kee Ok Kim, *Korea*
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Toshikazu Iitaka, *Japan*
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Wang Jing, *Chile*
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HyunJin Jo, *Korea*
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Soyoung Jung, *Korea*; Hyejin Hannah Kum-

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Md. Zarif Kaisar, Md.Sirajuddin Borno, Fahim Estiyak, Md. Shayanul Haq, Farhana Sayed Juthi, Khandaker Tabin Hasan, *Bangladesh*
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Lauren Kennedy-Metz, *United States*; Andrea Bizzego, *Italy*; Roger Dias, *United States*; Cesare Furlanello, Gianluca Esposito, *Italy*; Marco Zenati, *United States*
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Hyungsook Kim, David O'Sullivan, Yonghyun PARK, *Korea*
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Ilan Kirsh, *Israel*; Mike Joy, *United Kingdom*
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Ilan Kirsh, *Israel*; Mike Joy, *United Kingdom*; Yoram Kirsh, *Israel*
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Roman Kushnirenko, Svitlana Alkhimova,
Dmytro Sydorenko, Igor Tolmachov, *Ukraine*

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Ahto Kuuseok, *Estonia*
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Noppasorn Larpkattaworn, Pitijit Charoenwutiakajorn, Pattaraporn Punya, Siam Charoenseang, *Thailand*
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Clarisse Lawson-Guidigbe, Nicolas Louveton, Kahina Amokrane-Ferka, Benoît LeBlanc, Jean-Marc Andre, *France*
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Seonglim Lee, Jaehye Suk, Hee Ra Ha, Yue Huang, Korea; YuanZhou Deng, *P.R. China*
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Yi Li, *P.R. China*
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Nurul Momen, *Sweden*; Sven Bock, *Germany*

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Stephanie Schmidle, Philipp Gulde, *Germany*; Bart Jansen, *Belgium*; Sophie Herdegen, Joachim Hermsdörfer, *Germany*
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Carolin Straßmann, Alina Grewe, Christopher

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Tim Streilein, Germany; Sashidharan Komandur, India; Giovanni Pignoni, Italy; Frode Volden, Petter Lunde, Frode Voll Mjelde, Norway
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Guilei Sun, Yanhua Meng, P.R. China
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Patrick Sunnen, Beatrice Arend, Svenja Heuser, Hoorieh Afkari, Valérie Maquil, Luxembourg
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Ryo Suzuki, Ikuro Choh, Japan
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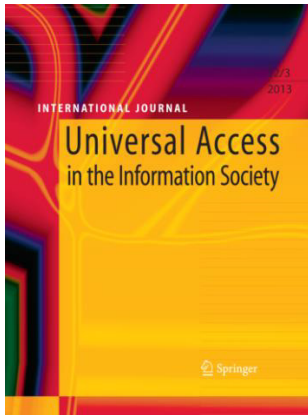
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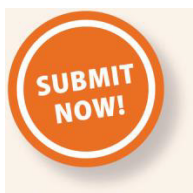
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