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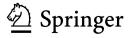
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Universal Access in Human-Computer Interaction

Methods, Technologies, and Users

12th International Conference, UAHCI 2018 Held as Part of HCI International 2018 Las Vegas, NV, USA, July 15–20, 2018 Proceedings, Part I



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Foreword

The 20th International Conference on Human-Computer Interaction, HCI International 2018, was held in Las Vegas, NV, USA, during July 15–20, 2018. The event incorporated the 14 conferences/thematic areas listed on the following page.

A total of 4,373 individuals from academia, research institutes, industry, and governmental agencies from 76 countries submitted contributions, and 1,170 papers and 195 posters have been included in the proceedings. These contributions address the latest research and development efforts and highlight the human aspects of design and use of computing systems. The contributions thoroughly cover the entire field of human-computer interaction, addressing major advances in knowledge and effective use of computers in a variety of application areas. The volumes constituting the full set of the conference proceedings are listed in the following pages.

I would like to thank the program board chairs and the members of the program boards of all thematic areas and affiliated conferences for their contribution to the highest scientific quality and the overall success of the HCI International 2018 conference.

This conference would not have been possible without the continuous and unwavering support and advice of the founder, Conference General Chair Emeritus and Conference Scientific Advisor Prof. Gavriel Salvendy. For his outstanding efforts, I would like to express my appreciation to the communications chair and editor of *HCI International News*, Dr. Abbas Moallem.

July 2018

Constantine Stephanidis

HCI International 2018 Thematic Areas and Affiliated Conferences

Thematic areas:

- Human-Computer Interaction (HCI 2018)
- Human Interface and the Management of Information (HIMI 2018)

Affiliated conferences:

- 15th International Conference on Engineering Psychology and Cognitive Ergonomics (EPCE 2018)
- 12th International Conference on Universal Access in Human-Computer Interaction (UAHCI 2018)
- 10th International Conference on Virtual, Augmented, and Mixed Reality (VAMR 2018)
- 10th International Conference on Cross-Cultural Design (CCD 2018)
- 10th International Conference on Social Computing and Social Media (SCSM 2018)
- 12th International Conference on Augmented Cognition (AC 2018)
- 9th International Conference on Digital Human Modeling and Applications in Health, Safety, Ergonomics, and Risk Management (DHM 2018)
- 7th International Conference on Design, User Experience, and Usability (DUXU 2018)
- 6th International Conference on Distributed, Ambient, and Pervasive Interactions (DAPI 2018)
- 5th International Conference on HCI in Business, Government, and Organizations (HCIBGO)
- 5th International Conference on Learning and Collaboration Technologies (LCT 2018)
- 4th International Conference on Human Aspects of IT for the Aged Population (ITAP 2018)

Conference Proceedings Volumes Full List

- 1. LNCS 10901, Human-Computer Interaction: Theories, Methods, and Human Issues (Part I), edited by Masaaki Kurosu
- 2. LNCS 10902, Human-Computer Interaction: Interaction in Context (Part II), edited by Masaaki Kurosu
- 3. LNCS 10903, Human-Computer Interaction: Interaction Technologies (Part III), edited by Masaaki Kurosu
- 4. LNCS 10904, Human Interface and the Management of Information: Interaction, Visualization, and Analytics (Part I), edited by Sakae Yamamoto and Hirohiko Mori
- LNCS 10905, Human Interface and the Management of Information: Information in Applications and Services (Part II), edited by Sakae Yamamoto and Hirohiko Mori
- 6. LNAI 10906, Engineering Psychology and Cognitive Ergonomics, edited by Don Harris
- 7. LNCS 10907, Universal Access in Human-Computer Interaction: Methods, Technologies, and Users (Part I), edited by Margherita Antona and Constantine Stephanidis
- 8. LNCS 10908, Universal Access in Human-Computer Interaction: Virtual, Augmented, and Intelligent Environments (Part II), edited by Margherita Antona and Constantine Stephanidis
- 9. LNCS 10909, Virtual, Augmented and Mixed Reality: Interaction, Navigation, Visualization, Embodiment, and Simulation (Part I), edited by Jessie Y. C. Chen and Gino Fragomeni
- 10. LNCS 10910, Virtual, Augmented and Mixed Reality: Applications in Health, Cultural Heritage, and Industry (Part II), edited by Jessie Y. C. Chen and Gino Fragomeni
- 11. LNCS 10911, Cross-Cultural Design: Methods, Tools, and Users (Part I), edited by Pei-Luen Patrick Rau
- 12. LNCS 10912, Cross-Cultural Design: Applications in Cultural Heritage, Creativity, and Social Development (Part II), edited by Pei-Luen Patrick Rau
- 13. LNCS 10913, Social Computing and Social Media: User Experience and Behavior (Part I), edited by Gabriele Meiselwitz
- 14. LNCS 10914, Social Computing and Social Media: Technologies and Analytics (Part II), edited by Gabriele Meiselwitz
- 15. LNAI 10915, Augmented Cognition: Intelligent Technologies (Part I), edited by Dylan D. Schmorrow and Cali M. Fidopiastis
- 16. LNAI 10916, Augmented Cognition: Users and Contexts (Part II), edited by Dylan D. Schmorrow and Cali M. Fidopiastis
- 17. LNCS 10917, Digital Human Modeling and Applications in Health, Safety, Ergonomics, and Risk Management, edited by Vincent G. Duffy
- 18. LNCS 10918, Design, User Experience, and Usability: Theory and Practice (Part I), edited by Aaron Marcus and Wentao Wang

- 19. LNCS 10919, Design, User Experience, and Usability: Designing Interactions (Part II), edited by Aaron Marcus and Wentao Wang
- 20. LNCS 10920, Design, User Experience, and Usability: Users, Contexts, and Case Studies (Part III), edited by Aaron Marcus and Wentao Wang
- 21. LNCS 10921, Distributed, Ambient, and Pervasive Interactions: Understanding Humans (Part I), edited by Norbert Streitz and Shin'ichi Konomi
- 22. LNCS 10922, Distributed, Ambient, and Pervasive Interactions: Technologies and Contexts (Part II), edited by Norbert Streitz and Shin'ichi Konomi
- 23. LNCS 10923, HCI in Business, Government, and Organizations, edited by Fiona Fui-Hoon Nah and Bo Sophia Xiao
- 24. LNCS 10924, Learning and Collaboration Technologies: Design, Development and Technological Innovation (Part I), edited by Panayiotis Zaphiris and Andri Joannou
- 25. LNCS 10925, Learning and Collaboration Technologies: Learning and Teaching (Part II), edited by Panayiotis Zaphiris and Andri Ioannou
- 26. LNCS 10926, Human Aspects of IT for the Aged Population: Acceptance, Communication, and Participation (Part I), edited by Jia Zhou and Gavriel Salvendy
- 27. LNCS 10927, Human Aspects of IT for the Aged Population: Applications in Health, Assistance, and Entertainment (Part II), edited by Jia Zhou and Gavriel Salvendy
- 28. CCIS 850, HCI International 2018 Posters Extended Abstracts (Part I), edited by Constantine Stephanidis
- CCIS 851, HCI International 2018 Posters Extended Abstracts (Part II), edited by Constantine Stephanidis
- 30. CCIS 852, HCI International 2018 Posters Extended Abstracts (Part III), edited by Constantine Stephanidis





12th International Conference on Universal Access in Human-Computer Interaction

Program Board Chair(s): Margherita Antona and Constantine Stephanidis, *Greece*

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The full list with the Program Board Chairs and the members of the Program Boards of all thematic areas and affiliated conferences is available online at:

http://www.hci.international/board-members-2018.php



HCI International 2019

The 21st International Conference on Human-Computer Interaction, HCI International 2019, will be held jointly with the affiliated conferences in Orlando, FL, USA, at Walt Disney World Swan and Dolphin Resort, July 26–31, 2019. 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. More information will be available on the conference website: http://2019.hci.international/.

General Chair Prof. Constantine Stephanidis University of Crete and ICS-FORTH Heraklion, Crete, Greece E-mail: general_chair@hcii2019.org

http://2019.hci.international/



Contents - Part I

Design for All, Accessibility and Usability	
A Method for Analyzing Mobility Issues for People with Physical Disabilities in the Context of Developing Countries	3
Mobile-PrivAccess: Method for Analyzing Accessibility in Mobile Applications from the Privacy Viewpoint Abiding by W3C	18
A Taxonomy for Website Evaluation Tools Grounded on Semiotic Framework	38
Copy Here, Paste There? On the Challenges of Scaling Inclusive Social Innovations	50
Universal Design of ICT for Emergency Management: A Systematic Literature Review and Research Agenda	63
When Universal Access Does not Go to Plan: Lessons to Be Learned Simeon Keates	75
Categorization Framework for Usability Issues of Smartwatches and Pedometers for the Older Adults	91
Towards a Framework for the Design of Quantitative Experiments: Human-Computer Interaction and Accessibility Research Frode Eika Sandnes, Evelyn Eika, and Fausto Orsi Medola	107
A Strategy on Introducing Inclusive Design Philosophy to Non-design Background Undergraduates	121

Shishun Wang, Ting Zhang, Guoying Lu, and Yinyun Wu

Stabilising Touch Interactions in Cockpits, Aerospace, and Vibrating Environments	133
MyoSL: A Framework for Measuring Usability of Two-Arm Gestural Electromyography for Sign Language	146
Evaluating Devices for Object Rotation in 3D	160
Interaction Techniques to Promote Accessibility in Games for Touchscreen Mobile Devices: A Systematic Review Eunice P. dos Santos Nunes, Vicente Antônio da Conceição Júnior, and Luciana C. Lima de Faria Borges	178
A Collaborative Virtual Game to Support Activity and Social Engagement for Older Adults	192
Evaluation of an English Word Look-Up Tool for Web-Browsing with Sign Language Video for Deaf Readers	205
Gesture-Based Vehicle Control in Partially and Highly Automated Driving for Impaired and Non-impaired Vehicle Operators: A Pilot Study	216
Real-Time Implementation of Orientation Correction Algorithm for 3D Hand Motion Tracking Interface	228
Haptic Information Access Using Touchscreen Devices: Design Guidelines for Accurate Perception of Angular Magnitude and Line Orientation	243
Brain Controlled Interface Log Analysis in Real Time Strategy Game Matches	256

Contents – Part I	XVII
M2TA - Mobile Mouse Touchscreen Accessible for Users with Motor Disabilities	273
Multi-switch Scanning Keyboards: A Theoretical Study of Simultaneous Parallel Scans with QWERTY Layout	287
Towards Multi-modal Interaction with Interactive Paint	299
Non Visual Interaction	
Nateq Reading Arabic Text for Visually Impaired People	311
Designing a 2 × 2 Spatial Vibrotactile Interface for Tactile Letter Reading on a Smartphone	327
LêRótulos: A Mobile Application Based on Text Recognition in Images to Assist Visually Impaired People	337
Information Design on the Adaptation of Evaluation Processes' Images to People with Visual Impairment	355
Cognitive Impact Evaluation of Multimodal Interfaces for Blind People: Towards a Systematic Review	365
Keyboard and Screen Reader Accessibility in Complex Interactive Science Simulations: Design Challenges and Elegant Solutions	385
Fair Play: A Guidelines Proposal for the Development of Accessible Audiogames for Visually Impaired Users	401

XVIII Contents - Part I

Comparison of Feedback Modes for the Visually Impaired: Vibration vs. Audio	420
Sibu Varghese Jacob and I. Scott MacKenzie	0
Ultrasonic Waves to Support Human Echolocation	433
Wayfinding Board Design for the Visually Impaired Based on Service Design Theory	450
Designing for Cognitive Disabilities	
Design of an Assistive Avatar in Improving Eye Gaze Perception in Children with ASD During Virtual Interaction	463
ICT to Support Dental Care of Children with Autism: An Exploratory Study	475
Design of an Interactive Gesture Measurement System for Down Syndrome People	493
Assistive Technologies for People with Cognitive Impairments – Which Factors Influence Technology Acceptance?	503
Designing Wearable Immersive "Social Stories" for Persons with Neurodevelopmental Disorder	517
An AAC System Designed for Improving Behaviors and Attitudes in Communication Between Children with CCN and Their Peers	530
Teaching Concepts with Wearable Technology: Learning Internal Body Organs	542
The Utility of the Virtual Reality in Autistic Disorder Treatment	551

Contents - Part I

XIX

Contents – Part II

Virtual and Augmented Reality for Universal Access	
Analysis of the Body Sway While/After Viewing Visual Target Movement Synchronized with Background Motion	3
Virtual Reality for Pain Management Among Children and Adolescents: Applicability in Clinical Settings and Limitations	15
Virtual Reality Based Assessment of Static Object Visual Search in Ocular Compared to Cerebral Visual Impairment	28
3D Spatial Gaming Interaction to Broad CS Participation	39
Using Immersive Virtual Reality Serious Games for Vocational Rehabilitation of Individuals with Physical Disabilities	48
Virtual Reality Interaction Techniques for Individuals with Autism Spectrum Disorder	58
Analysis of Human Motion and Cognition Ability with Virtual Reality System: Basic Mechanism of Human Response	78
Effectiveness of Virtual Reality Survival Horror Games for the Emotional Elicitation: Preliminary Insights Using Resident Evil 7: Biohazard Federica Pallavicini, Ambra Ferrari, Alessandro Pepe, Giacomo Garcea, Andrea Zanacchi, and Fabrizia Mantovani	87
Mobile Augmented Reality Framework - MIRAR	102

Effect of Controlled Consciousness on Sense of Presence and Visually Induced Motion Sickness While Viewing Stereoscopic Movies	122
Exploring Virtual Reality to Enable Deaf or Hard of Hearing Accessibility in Live Theaters: A Case Study	132
Use of 3D Human-Computer Interaction for Teaching in the Architectural, Engineering and Construction Fields	149
The Formulation of Hybrid Reality: Pokémon Go Mania	160
Accessibility Guidelines for Virtual Environments	171
Intelligent Assistive Environments	
Ambient Assisted Living and Digital Inclusion: Overview of Projects, Services and Interfaces	187
Intelligent Driver Profiling System for Cars – A Basic Concept	201
Development of an Energy Management System for the Charge Scheduling of Plug-in Electric Vehicles	214
Designing IoT Solutions for Elderly Home Care: A Systematic Study of Participatory Design, Personas and Semiotics	226
Participatory Design Approach to Internet of Things: Co-designing a Smart Shower for and with People with Disabilities	246

	Contents - Part II	XXIII
Security Monitoring in a Low Cost Smart Home for the Gabriel Ferreira, Paulo Penicheiro, Ruben Bernardo Luís Mendes, João Barroso, and António Pereira		262
Understanding the Questions Asked by Care Staff While Stories from Older Adults for AAC System Design Haruka Kanetsuku, Tetsuya Hirotomi, and Sachiko I		274
Analysis of Electrogastrograms During Exercise Loads Fumiya Kinoshita, Kosuke Fujita, Kazuya Miyanaga, Masumi Takada, and Hiroki Takada		285
Creativity and Ambient Urbanizing at the Intersection of Things and People in Smart Cities		295
Barrier Detection Using Sensor Data from Unimpaired Akihiro Miyata, Iori Araki, and Tongshun Wang	Pedestrians	308
Technologies Applied to Remote Supervision of Exerci Arterial Disease: A Literature Review		320
Low-Cost Smart Surveillance System for Smart Cities . Rúben Pereira, Diogo Correia, Luís Mendes, Carlos João Barroso, and António Pereira		330
Power Assist Control Based on Learning Database of J of Powered Exoskeleton Suitable for Wearer's Posture Katsuya Sahashi, Shota Murai, and Yasutake Takaha		340
Performance Sensor for Reliable Operation		347
"I Would Like to Get Close to You": Making Robot Per Invasion Less Intrusive with a Social Gaze Cue Stefan-Daniel Suvei, Jered Vroon, Vella V. Somoza Stefan-Bodenhagen, Gwenn Englebienne, Norbert Kriff and Vanessa Evers		366
A Scoping Study on the Development of an Interactive Rehabilitation System Framework for Patients with Stro Kevin C. Tseng, Alice M. K. Wong, Chung-Yu Wu, Tu Yu-Cheng Pei, and Jean-Lon Chen	oke	386

Access to the Web, Social Media, Education, Culture and Social Innovation

Adaptation: Exploring the Role of Library Metadata	97
SELFMADE – Self-determination and Communication Through Inclusive MakerSpaces	09
Applying an Implicit Recommender System in the Preparation of Visits to Cultural Heritage Places	21
State of Accessibility in U.S. Higher Ed Institutions	37
Quo Vadis "Interaction Design and Children, Older and Disabled" in America and Europe?4: Francisco V. Cipolla Ficarra, Maria V. Ficarra, Eulogia Mendoza, and Miguel Cipolla Ficarra	50
Focus on New Technologies, Editorial and Business Publishing for International User	63
Picturemarks: Changes in Mining Media and Digital Storytelling 4' Ole Goethe	75
Micro-internships on the Margins	86
Acquisition, Representation and Retrieval of 3D Dynamic Objects	96
Report A Barrier: Creating and Implementing a Pan-University Accessibility Reporting System	11
Open Participatory Democracy in the Basque Country: The Role of Open Digital Platforms in Public Budgeting and Finance	19
A Proposal for a Remote Interactive Class System with Sign Language Interpretation	30

Contents – Part II	XXV
Development of Thought Using a Humanoid Robot in an Elementary School Classroom	541
A Panorama on Selection and Use of Bioinformatics Tools in the Brazilian University Context	553
A Personal Emotion-Based Recipe Recommendation Mobile Social Platform: Mood Canteen	574
Emerging Social Media and Social Networks Analysis Transforms the Tourism Industry: Living Green Smart Tourism Ecosystem	583
Institutional Accessibility Awareness	591
Author Index	603