

Commenced Publication in 1973

Founding and Former Series Editors:

Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Editorial Board

David Hutchison

Lancaster University, Lancaster, UK

Takeo Kanade

Carnegie Mellon University, Pittsburgh, PA, USA

Josef Kittler

University of Surrey, Guildford, UK

Jon M. Kleinberg

Cornell University, Ithaca, NY, USA

Friedemann Mattern

ETH Zurich, Zürich, Switzerland

John C. Mitchell

Stanford University, Stanford, CA, USA

Moni Naor

Weizmann Institute of Science, Rehovot, Israel

C. Pandu Rangan

Indian Institute of Technology, Madras, India

Bernhard Steffen

TU Dortmund University, Dortmund, Germany

Demetri Terzopoulos

University of California, Los Angeles, CA, USA

Doug Tygar

University of California, Berkeley, CA, USA

Gerhard Weikum

Max Planck Institute for Informatics, Saarbrücken, Germany

More information about this series at <http://www.springer.com/series/7409>

Aaron Marcus (Ed.)

Design, User Experience, and Usability

Design Discourse

4th International Conference, DUXU 2015
Held as Part of HCI International 2015
Los Angeles, CA, USA, August 2–7, 2015
Proceedings, Part I

Editor
Aaron Marcus
Aaron Marcus and Associates
Berkeley, CA
USA

ISSN 0302-9743 ISSN 1611-3349 (electronic)
Lecture Notes in Computer Science
ISBN 978-3-319-20885-5 ISBN 978-3-319-20886-2 (eBook)
DOI 10.1007/978-3-319-20886-2

Library of Congress Control Number: 2015942614

LNCS Sublibrary: SL3 – Information Systems and Applications, incl. Internet/Web, and HCI

Springer Cham Heidelberg New York Dordrecht London
© Springer International Publishing Switzerland 2015

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made.

Printed on acid-free paper

Springer International Publishing AG Switzerland is part of Springer Science+Business Media
(www.springer.com)

Foreword

The 17th International Conference on Human-Computer Interaction, HCI International 2015, was held in Los Angeles, CA, USA, during 2–7 August 2015. The event incorporated the 15 conferences/thematic areas listed on the following page.

A total of 4843 individuals from academia, research institutes, industry, and governmental agencies from 73 countries submitted contributions, and 1462 papers and 246 posters have been included in the proceedings. These papers address the latest research and development efforts and highlight the human aspects of design and use of computing systems. The papers 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 28-volume set of the conference proceedings are listed on pages VII and VIII.

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 2015 conference.

This conference could 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 their outstanding efforts, I would like to express my appreciation to the Communications Chair and Editor of HCI International News, Dr. Abbas Moallem, and the Student Volunteer Chair, Prof. Kim-Phuong L. Vu. Finally, for their dedicated contribution towards the smooth organization of HCI International 2015, I would like to express my gratitude to Maria Pitsoulaki and George Paparoulis, General Chair Assistants.

May 2015

Constantine Stephanidis
General Chair, HCI International 2015

HCI International 2015 Thematic Areas and Affiliated Conferences

Thematic areas:

- Human-Computer Interaction (HCI 2015)
- Human Interface and the Management of Information (HIMI 2015)

Affiliated conferences:

- 12th International Conference on Engineering Psychology and Cognitive Ergonomics (EPCE 2015)
- 9th International Conference on Universal Access in Human-Computer Interaction (UAHCI 2015)
- 7th International Conference on Virtual, Augmented and Mixed Reality (VAMR 2015)
- 7th International Conference on Cross-Cultural Design (CCD 2015)
- 7th International Conference on Social Computing and Social Media (SCSM 2015)
- 9th International Conference on Augmented Cognition (AC 2015)
- 6th International Conference on Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management (DHM 2015)
- 4th International Conference on Design, User Experience and Usability (DUXU 2015)
- 3rd International Conference on Distributed, Ambient and Pervasive Interactions (DAPI 2015)
- 3rd International Conference on Human Aspects of Information Security, Privacy and Trust (HAS 2015)
- 2nd International Conference on HCI in Business (HCIB 2015)
- 2nd International Conference on Learning and Collaboration Technologies (LCT 2015)
- 1st International Conference on Human Aspects of IT for the Aged Population (ITAP 2015)

Conference Proceedings Volumes Full List

1. LNCS 9169, Human-Computer Interaction: Design and Evaluation (Part I), edited by Masaaki Kurosu
2. LNCS 9170, Human-Computer Interaction: Interaction Technologies (Part II), edited by Masaaki Kurosu
3. LNCS 9171, Human-Computer Interaction: Users and Contexts (Part III), edited by Masaaki Kurosu
4. LNCS 9172, Human Interface and the Management of Information: Information and Knowledge Design (Part I), edited by Sakae Yamamoto
5. LNCS 9173, Human Interface and the Management of Information: Information and Knowledge in Context (Part II), edited by Sakae Yamamoto
6. LNAI 9174, Engineering Psychology and Cognitive Ergonomics, edited by Don Harris
7. LNCS 9175, Universal Access in Human-Computer Interaction: Access to Today's Technologies (Part I), edited by Margherita Antona and Constantine Stephanidis
8. LNCS 9176, Universal Access in Human-Computer Interaction: Access to Interaction (Part II), edited by Margherita Antona and Constantine Stephanidis
9. LNCS 9177, Universal Access in Human-Computer Interaction: Access to Learning, Health and Well-Being (Part III), edited by Margherita Antona and Constantine Stephanidis
10. LNCS 9178, Universal Access in Human-Computer Interaction: Access to the Human Environment and Culture (Part IV), edited by Margherita Antona and Constantine Stephanidis
11. LNCS 9179, Virtual, Augmented and Mixed Reality, edited by Randall Shumaker and Stephanie Lackey
12. LNCS 9180, Cross-Cultural Design: Methods, Practice and Impact (Part I), edited by P.L. Patrick Rau
13. LNCS 9181, Cross-Cultural Design: Applications in Mobile Interaction, Education, Health, Transport and Cultural Heritage (Part II), edited by P.L. Patrick Rau
14. LNCS 9182, Social Computing and Social Media, edited by Gabriele Meiselwitz
15. LNAI 9183, Foundations of Augmented Cognition, edited by Dylan D. Schmorow and Cali M. Fidopiastis
16. LNCS 9184, Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management: Human Modeling (Part I), edited by Vincent G. Duffy
17. LNCS 9185, Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management: Ergonomics and Health (Part II), edited by Vincent G. Duffy
18. LNCS 9186, Design, User Experience, and Usability: Design Discourse (Part I), edited by Aaron Marcus
19. LNCS 9187, Design, User Experience, and Usability: Users and Interactions (Part II), edited by Aaron Marcus
20. LNCS 9188, Design, User Experience, and Usability: Interactive Experience Design (Part III), edited by Aaron Marcus

21. LNCS 9189, Distributed, Ambient and Pervasive Interactions, edited by Norbert Streitz and Panos Markopoulos
22. LNCS 9190, Human Aspects of Information Security, Privacy and Trust, edited by Theo Tryfonas and Ioannis Askoxylakis
23. LNCS 9191, HCI in Business, edited by Fiona Fui-Hoon Nah and Chuan-Hoo Tan
24. LNCS 9192, Learning and Collaboration Technologies, edited by Panayiotis Zaphiris and Andri Ioannou
25. LNCS 9193, Human Aspects of IT for the Aged Population: Design for Aging (Part I), edited by Jia Zhou and Gavriel Salvendy
26. LNCS 9194, Human Aspects of IT for the Aged Population: Design for Everyday Life (Part II), edited by Jia Zhou and Gavriel Salvendy
27. CCIS 528, HCI International 2015 Posters' Extended Abstracts (Part I), edited by Constantine Stephanidis
28. CCIS 529, HCI International 2015 Posters' Extended Abstracts (Part II), edited by Constantine Stephanidis

Design, User Experience and Usability

Program Board Chair: Aaron Marcus, USA

- Sisira Adikari, Australia
- Claire Ancient, UK
- Randolph G. Bias, USA
- Jamie Blustein, Canada
- Jan Brejcha, Czech Republic
- Marc Fabri, UK
- Patricia Flanagan, Hong Kong
- Emilie Gould, USA
- Luciane Maria Fadel, Brazil
- Brigitte Herrmann, Germany
- Steffen Hess, Germany
- Nouf Khashman, Canada
- Francisco Rebelo, Portugal
- Kerem Rızvanođlu, Turkey
- Javed Anjum Sheikh, Pakistan
- Marcelo Soares, Brazil
- Carla G. Spinillo, Brazil
- Katia Canepa Vega, Brazil

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/2015/>



HCI International 2016

The 18th International Conference on Human-Computer Interaction, HCI International 2016, will be held jointly with the affiliated conferences in Toronto, Canada, at the Westin Harbour Castle Hotel, 17–22 July 2016. 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://2016.hci.international/>.

General Chair

Prof. Constantine Stephanidis

University of Crete and ICS-FORTH

Heraklion, Crete, Greece

Email: general_chair@hci2016.org

<http://2016.hci.international/>



Contents – Part I

Design Thinking

The Cold Desert of Software Reality	3
<i>Jiří Bystřický and Jan Brejcha</i>	
Design Thinking Methods and Tools for Innovation	12
<i>Dimitra Chasanidou, Andrea Alessandro Gasparini, and Eunji Lee</i>	
Semantic Research of Military Icons Based on Behavioral Experiments and Eye-Tracking Experiments	24
<i>Xiao Jiao Chen, Chengqi Xue, Yafeng Niu, Haiyan Wang, Jing Zhang, and Jiang Shao</i>	
Thinking with a New Purpose: Lessons Learned from Teaching Design Thinking Skills to Creative Technology Students	32
<i>Marc Fabri</i>	
HCI and the Community of Non-users.	44
<i>Michael Heidt, Kalja Kanellopoulos, Linda Pfeiffer, and Paul Rosenthal</i>	
The Conflict Resolution in Product Experience Design Based on Evaporating Cloud of the Theory of Constraints	53
<i>Lu Jin</i>	
How to Design an User Interface Based on Gestures?	63
<i>Anna C.S. Medeiros, Tatiana A. Tavares, and Iguatemi E. da Fonseca</i>	
User Interfaces for Cyber-Physical Systems: Challenges and Possible Approaches	75
<i>Volker Paelke and Carsten Röcker</i>	
The Theoretical Landscape of Service Design.	86
<i>Piia Ryttilahti, Satu Miettinen, and Hanna-Riina Vuontisjärvi</i>	
User Experience Design and Usability Methods and Tools	
Maareech: Usability Testing Tool for Voice Response System Using XML Based User Models	101
<i>Siddhartha Asthana and Pushpendra Singh</i>	
Cultural Effects on Metaphor Design.	113
<i>Muhammad Waqas Azeem, Arslan Tariq, Farzan Javed Sheikh, Muhammad Aadil Butt, Iqra Tariq, and Hafiza Maimoona Shahid</i>	

Chinese UI Design Guidelines 2.0.	122
<i>Jan Brejcha, Hui Li, Qing Xu, Huitian Miao, Menghan Xu, Li Wang, and Zhengjie Liu</i>	
Combining Principles of Experience, Traditional Heuristics and Industry Guidelines to Evaluate Multimodal Digital Artifacts	130
<i>Fábio Campos, Rui Belfort, Walkir Fernandes, Edvar Neto, and Walter Correia</i>	
Usability Heuristics for Heuristic Evaluation of Gestural Interaction in HCI.	138
<i>Ngip Khean Chuan, Ashok Sivaji, and Wan Fatimah Wan Ahmad</i>	
Exploring and Experimenting Cooperative Design.	149
<i>Salomão David and Lorenzo Cantoni</i>	
Prototyping and Testing Throughout all the Design Process as a Methodology for Developing Interaction Design Projects	157
<i>Lucas Cypriano and Mauro Pinheiro</i>	
A Living Labs Approach for Usability Testing of Ambient Assisted Living Technologies	167
<i>Miguel Sales Dias, Elisângela Vilar, Filipe Sousa, Ana Vasconcelos, Fernando Miguel Pinto, Nuno Saldanha, and Sara Eloy</i>	
Investigating Synergies Between Interaction Design Methods	179
<i>Stefano Filippi, Daniela Barattin, and Paula Alexandra Silva</i>	
A Posture HCI Design Pattern for Television Commerce Based on User Experience	191
<i>Rosendy Jess Galabo and Carlos Soares Neto</i>	
Investigating the Correspondence Between UMUX-LITE and SUS Scores	204
<i>James R. Lewis, Brian S. Utesch, and Deborah E. Maher</i>	
Experimental Case Study of New Usability Heuristics	212
<i>Freddy Paz, Freddy Asrael Paz, and José Antonio Pow-Sang</i>	
A Usability Study of a Brain-Computer Interface Apparatus: An Ergonomic Approach	224
<i>Rafaela Q. Barros, Gabriele Santos, Caroline Ribeiro, Rebeca Torres, Manuella Q. Barros, and Marcelo M. Soares</i>	
User Experience Evaluations: Challenges for Newcomers.	237
<i>Cristian Rusu, Virginica Rusu, Silvana Roncagliolo, Juan Apablaza, and Virginia Zaraza Rusu</i>	
Lessons Learned in Usability Consulting	247
<i>Tim Schneidermeier</i>	

INUIT: The Interface Usability Instrument	256
<i>Maximilian Speicher, Andreas Both, and Martin Gaedke</i>	
Are We Testing Utility? Analysis of Usability Problem Types	269
<i>Kimmo Tarkkanen, Ville Harkke, and Pekka Reijonen</i>	
DUXU Management and Practice	
Supply Chain Risk Management in the Era of Big Data.	283
<i>Yingjie Fan, Leonard Heilig, and Stefan Voß</i>	
Practice What We Preach – Checking the Usability of HCI Conference Websites	295
<i>Franziska Hertlein, Bastian Hinterleitner, Matthias Voit, Tim Schneidermeier, and Christian Wolff</i>	
Learning from Experience Oriented Disciplines for User Experience Design: A Research Agenda.	306
<i>Simon Kremer and Udo Lindemann</i>	
On Chinese Online P2P Lender’s Model Building on the Macro, Micro and Industry Level.	315
<i>Qiwei Liang</i>	
Twenty Years on: A Second Look at 10 Important Social Impact Characteristics of Computer Technology	328
<i>Blaise W. Liffick</i>	
Startup Rio: User Experience and Startups	339
<i>Adriano Bernardo Renzi, Adriana Chammas, Luiz Agner, and Jacob Greenspan</i>	
Innovation, Exceptional Experience and Sustainable Success Made Easy: The NI© Needs Innovation Model	348
<i>Johannes Robier</i>	
Software Project Management Combining Agile, Lean Startup and Design Thinking.	356
<i>Bianca H. Ximenes, Isadora N. Alves, and Cristiano C. Araújo</i>	
Integration of Usability and Agile Methodologies: A Systematic Review	368
<i>Claudia Zapata</i>	
Research on the Correspondence Between Designer End Expressions of Product Semantics with the Cognition of User End	379
<i>Liqun Zhang</i>	

Emotional and Persuasion Design

OBDEnergy: Making Metrics Meaningful in Eco-driving Feedback 395
Sumayyah Ahmed and Angela Sanguinetti

Emotion-Centered-Design (ECD) New Approach for Designing
Interactions that Matter 406
Eva de Lera

Rhetoric of Interaction: Analysis of Pathos. 417
Barbara Emanuel, Camila Rodrigues, and Marcos Martins

Emotions Logging in Automated Usability Tests for Mobile Devices. 428
Jackson Feijó Filho, Wilson Prata, and Thiago Valle

Motivators of Energy Reduction Behavioral Intentions: Influences
of Technology, Personality Characteristics, Perceptions,
and Behavior Barriers 436
June A. Flora and Banny Banerjee

Soft Computation in the Public Sphere: Enhancing Social Dynamics
with Wearable Networks 447
Raune Frankjær

Re-sequencing the Ludic Orchestra: Evaluating the Immersive Effects
of Dynamic Music and Situational Context in Video Games. 458
Hans-Peter Gasselseder

Exploring Digital Service Concepts for Healthy Lifestyles 470
*Jonna Häkkinen, Ashley Colley, Virve Inget, Mira Alhonsuo,
and Juho Rantakari*

A User Study of Netflix Streaming 481
*France Jackson, Rahul Amin, Yunhui Fu, Juan E. Gilbert,
and James Martin*

Engaging Experience with Physical Activity Tracking Products 490
Armağan Kuru and Jodi Forlizzi

Personal Museum: A New Museum that Focus on Emotional Relationship
Between People and Belongings 502
Lei Guo, Yipei Shen, Shiqiang Yang, and Huanbo Luan

The Marriage Machine: Mobile Persuasion/Behavior Change 513
Aaron Marcus

A Study of the Fault Tree Human in Aviation 524
*Edgard Thomas Martins, Isnard Thomas Martins,
and Marcelo M. Soares*

Scenario Analysis as a Tool for Informing the Design of Behaviour Change Interventions.	535
<i>Luis Oliveira, Martin Maguire, Val Mitchell, and Andrew May</i>	
A Feasibility Study of the Effect of Phone-Based Feedback of Other Commuters’ Subjective Experiences on Driver Intentions to Change	548
<i>Tracy Ross, Andrea Burris, Luis Oliveira, Bronia Arnott, and Vera Araujo-Soares</i>	
Products with Biomimetic Shapes Convey Emotions More Effectively.	559
<i>Tyan-Yu Wu and Hon-Kai Chen</i>	
Skeuomorphism and Flat Design: Evaluating Users’ Emotion Experience in Car Navigation Interface Design	567
<i>Lei Wu, Tian Lei, Juan Li, and Bin Li</i>	
 Storytelling, Narrative and Fiction in DUXU5	
Navigation in Interactive Visual Narrative for Children’s Appbooks	579
<i>Andréa Bellotti, Pedro Biz, and Washington Dias Lessa</i>	
Human-Robot Interaction Ethics in Sci-Fi Movies: Ethics Are Not ‘There’, We Are the Ethics!	590
<i>Myriam El Mesbahi</i>	
Design Perspectives to the Design of Interfaces Connected and Convergent for T-Commerce Applications.	599
<i>Marcelo Falco and Rachel Zuanon</i>	
How to Evaluate Use Scenarios and Stories	609
<i>Ioanna Michailidou, Charlotte Haid, and Udo Lindemann</i>	
Interactive Digital Storytelling and HCI Techniques Applied for Edutainment in Interactive Health Projects: Analysis of Two USC’s Labyrinth Projects.	621
<i>Jorge I. Mora Fernández</i>	
A Toolkit for SE for Sustainability - A Design Fiction	634
<i>Birgit Penzenstadler</i>	
Delphi Method to Explore Future Scenario Possibilities on Technology and HCI.	644
<i>Adriano Bernardo Renzi and Sydney Fernandes de Freitas</i>	
Incorporating Fictionality into the Real World with Transmedia Storytelling . . .	654
<i>Mizuki Sakamoto and Tatsuo Nakajima</i>	
Author Index	667

Contents – Part II

Users in DUXU

Effects of Packages' Color as a Cue for Hazard-Related Perceptions: A Study Using Virtual Reality	3
<i>Hande Ayanoğlu, Rita Boto, Júlia Teles, and Emília Duarte</i>	
Humanizing Labor Resource in a Discrete Event Manufacturing Simulation Software	14
<i>Lia Buarque de Macedo Guimarães and Carlos Sergio Schneider</i>	
Children's Mental Model as a Tool to Provide Innovation in Digital Products	23
<i>Adriana Chammas, Manuela Quaresma, and Cláudia Renata Mont'Alvão</i>	
HARSim: Posterior Load Comparative Analysis Process	34
<i>Ricardo Dagge, Ernesto Filgueiras, and Francisco Rebelo</i>	
Study on Operating Clearance Measurement of Some Connectors by Using Motion Capture.	45
<i>Hao Du, Li Wang, Li Ding, Yulin Xu, and Changhua Jiang</i>	
Capture and Analysis of Interaction Data for the Evaluation of User Experience with Mobile Devices	54
<i>Artur H. Kronbauer, Diferson Machado, and Celso A.S. Santos</i>	
A Study Customer Journey Map for User Experience Analysis of Information and Communications Technology Service.	66
<i>Jin Ho Lee, Min Ji Kim, and Sung Woo Kim</i>	
Scaling Preferences of Different Stakeholders – Using the Example of Prioritizing Quality Requirements on User Interface Texts	75
<i>Yiqi Li, Theo Held, and Patrick Fischer</i>	
Affordances Feature on Package Design has Preference Effect on Content . . .	87
<i>Jerry Lin and Cheng-Hung Lo</i>	
Measuring Negative User Experience.	95
<i>Dominik Pascal Magin, Andreas Maier, and Steffen Hess</i>	
Chinese User-Experience Design: An Initial Analysis	107
<i>Aaron Marcus and Stacey Baradit</i>	

Behavioural Variables Analysis in Mobile Environments	118
<i>Denise Marczal and Plinio Thomaz Aquino Junior</i>	
Experiences, Problems and Solutions in Computer Usage by Subjects with Tetraplegia	131
<i>Fausto O. Medola, Jamille Lanutti, Claudia G. Bentim, Adrieli Sardella, Ana Elisa Franchinni, and Luis C. Paschoarelli</i>	
Women in DUXU	
Introducing Computer Science to Brazilian Girls in Elementary School Through HCI Concepts	141
<i>Marília Abrahão Amaral, Sílvia Amélia Bim, Clodis Boscaroli, and Cristiano Maciel</i>	
Inclusive Gaming Creation by Design in Formal Learning Environments: “Girly-Girls” User Group in No One Left Behind	153
<i>Maria Eugenia Beltrán, Yolanda Ursa, Anja Petri, Christian Schindler, Wolfgang Slany, Bernadette Spieler, Silvia de los Rios, Maria Fernanda Cabrera-Umpierrez, and Maria Teresa Arredondo</i>	
3D Real Time Virtual Fitting Room for Women	162
<i>Salin Boonbrahm, Charlee Kaewrat, Lanjakorn Sewata, Patiwat Kateertprasert, and Poonpong Boonbrahm</i>	
Re/Framing Virtual Conversational Partners: A Feminist Critique and Tentative Move Towards a New Design Paradigm	172
<i>Sheryl Brahnam and Margaret Weaver</i>	
Experiencing Early User Interfaces	184
<i>Martha E. Crosby</i>	
Incommensurable Writings - Examining the Status of Gender Difference Within HCI Coding Practices	196
<i>Michael Heidt, Kalja Kanellopoulos, Arne Berger, and Paul Rosenthal</i>	
A Study on Shopping Websites Payeasy for Female Consumers in Taiwan.	206
<i>Hsiu Ching Laura Hsieh and Ning Chun Cheng</i>	
Verification of Stereotype on Women Observing Gender Difference on UX of Wearable Device.	214
<i>Hee Jae Hwang, Jung Min Lee, and Da Young Ju</i>	
Closing the Gender Divide in Tech: Challenges and Achievements in Vogue	224
<i>Linda Lim and Yuanqiong (Kathy) Wang</i>	

Gender Differences in Temporal Data Analysis: Toward Women or Men Empowerment?	232
<i>Ilona Nawrot</i>	
The Invisible User: Women in DUXU	243
<i>Javed Anjum Sheikh and Aneela Abbas</i>	
The Creative Process in Digital Design: Towards an Understanding of Women’s Approach.	252
<i>Virginia Tiradentes Souto, Paula C.L.A. Faria, and Fátima Aparecida dos Santos</i>	
Information Design	
Infographics and Communicating Complex Information	267
<i>Michael J. Albers</i>	
Building Cloud-Based Scientific Workflows Made Easy: A Remote Sensing Application	277
<i>Sofiane Bendoukha, Daniel Moldt, and Hayat Bendoukha</i>	
Sound Design and UX: The Dynamic Audio Application Guide	289
<i>Luiz Roberto Carvalho and Alice T. Cybis Pereira</i>	
Designing an Interactive Map of Musical Culture and a Digital Humanity App	301
<i>Sheng-Chih Chen and Chiung-Hui Hwang</i>	
Applying Human Centered Design Process for Designing Air Traffic Control Interfaces	307
<i>Satoru Inoue, Kazuhiko Yamazaki, Hajime Hirako, and Toshiya Sasaki</i>	
Synchronized Data Management and its Integration into a Graphical User Interface for Archaeological Related Disciplines	317
<i>Daniel Kaltenthaler, Johannes-Y. Lohrer, Peer Kröger, Christiaan H. van der Meijden, and Henriette Obermaier</i>	
Brazilian Research Panorama on Information Ergonomics and Graphic Design.	330
<i>Luis C. Paschoarelli, João Silva, Danilo Silva, Gabriel Bonfim, Fausto O. Medola, and Erica Neves</i>	
Beyond the Wall of Text: How Information Design Can Make Contracts User-Friendly	341
<i>Stefania Passera</i>	
Digital Collections: Analysis of Collaborative Platforms.	353
<i>Camila Rodrigues, Barbara Emanuel, and Marcos Martins</i>	

Interactive Multisensory Data Representation	363
<i>Patricia Search</i>	
An Interactive Guide to Design Animated Visual Instructions in Brazil	374
<i>Carla G. Spinillo and Roberta Perozza</i>	
Lyricon (Lyrics + Earcons) Improves Identification of Auditory Cues	382
<i>Yuanjing Sun and Myounghoon Jeon</i>	
Touch and Gesture DUXU	
Evaluating Interaction Design in Brazilian Tablet Journalism: Gestural Interfaces and Affordance Communicability	393
<i>Luiz Agner, Adriano Bernardo Renzi, Natanne Viegas, Priscila Buares, and Vitor Zanfagnini</i>	
Haptic Exploration Patterns in Virtual Line-Graph Comprehension	403
<i>Özge Alaçam, Cengiz Acartürk, and Christopher Habel</i>	
Collaborative Tangible Interface (CoTI) for Complex Decision Support Systems	415
<i>Salma Aldawood, Faisal Aleissa, Almaha Almalki, Tarfah Alrashed, Tariq Alhindi, Riyadh Alnasser, Mohammad K. Hadhrawi, Anas Alfaris, and Areej Al-Wabi</i>	
User Study on 3D Multitouch Interaction (3DMi) and Gaze on Surface Computing	425
<i>Eugene Ch'ng and Neil Cooke</i>	
CubeMate: A New Communication Device as Non-verbal Interface in a Shared Space	434
<i>Roberta Grimaldi, Valentina Cipelli, and Carlo Maria Medaglia</i>	
Transparent Organ©: Designing Luminaire Art Deco with Kinetic Interaction	444
<i>Scottie Chih-Chieh Huang</i>	
Usability of Touchpad Based Game Controller Interfaces	452
<i>Jonathon Kissinger and Tony Morelli</i>	
Usability Evaluation of Kinect-Based System for Ballet Movements	464
<i>Milka Trajkova and Mexhid Ferati</i>	
Integrating a Cognitive Modelling Framework into the Design Process of Touchscreen User Interfaces	473
<i>Patrick K.A. Wollner, Patrick M. Langdon, and P. John Clarkson</i>	

Mobile DUXU

Change News Reading Habit in the Information Age and Digital Mobile Devices. 487
Juliana Nunes and Manuela Quaresma

Towards a Requirements Catalogue for Prototyping Tools of Mobile User Interfaces 495
Benjamin Bähr

Approaching Users and Context of Use in the Design and Development of Mobile Systems 508
Eyal Eshet and Harry Bouwman

The Importance of Metaphors for User Interaction with Mobile Devices 520
Chrysoula Gatsou

Keyword Input via Digits: Simplified Smartphone Interface for Information Retrieval 530
Masanobu Higashida and Toru Ishida

Smartphone Application Usability Evaluation: The Applicability of Traditional Heuristics. 541
Ger Joyce, Mariana Lilley, Trevor Barker, and Amanda Jefferies

Elements of Properties of User Experience in Cloud Computing Documentation Platform According to Smart Device Screen Size Changes: Focus on Google Docs and Naver Office 551
Min Kyung Kang and Sung Woo Kim

Virtual Touchpad for Cursor Control of Touchscreen Thumb Operation in the Mobile Context 563
Yu Ren Lai and T.K. Philip Hwang

The Interaction with Smartphones in the Brazilian Driving Context. 575
Manuela Quaresma, Rafael Cirino Gonçalves, Jhonnata Oliveira, and Marcela Rodrigues

Significance of Line Length for Tablet PC Users 587
Waqas Ali Sahito, Hashim Iqbal Chunpir, Zahid Hussain, Syed Raheel Hassan, and Frederik Schulte

A Field Study on Basic Usage Patterns of Traditional Watch and Smart Phone for Designing Smart Watch 597
Zijian Zhu, Haidi Song, and Sung Woo Kim

Wearable DUXU

Adapting Smart Textiles to Develop Soft Interactive Tool Kits for Applying in Sewing Projects	611
<i>Aqua Chuan-Yu Chen</i>	
Evolutionary Wearables	622
<i>Patricia Flanagan</i>	
Transcending Disciplinary, Cultural and National Boundaries: Emergent Technologies, New Education Landscape and the Cloud Workshop Project	631
<i>Rafael Gomez, Patricia Flanagan, and Rebekah Davis</i>	
Digital Craftsmanship: The Making of Incunabula, a Fully 3D Printed Wearable Dress.	643
<i>Tobias Klein</i>	
Designing a Vibrotactile Language for a Wearable Vest.	655
<i>Ann Morrison, Hendrik Knoche, and Cristina Manresa-Yee</i>	
TattooAR: Augmented Reality Interactive Tattoos	667
<i>Gabriela Schirmer Mauricio, João de Sá Bonelli, and Maria das Graças Chagas</i>	
Flexible and Wearable Sensors	675
<i>Kuniharu Takei, Shingo Harada, Wataru Honda, Yuki Yamamoto, Kenichiro Kanao, Takayuki Arie, and Seiji Akita</i>	
Tattoo Antenna Temporary Transfers Operating On-Skin (TATTOOS).	685
<i>James Tribe, Dumtoochukwu Oyeka, John Batchelor, Navjot Kaur, Diana Segura-Velandia, Andrew West, Robert Kay, Katia Vega, and Will Whittow</i>	
Hairware: Designing Conductive Hair Extensions for Seamless Interfaces . . .	696
<i>Katia Vega, Ricardo Aucelio, and Hugo Fuks</i>	
Commicator: Enhancing Non-verbal Communication by Means of Magnetic Vision	705
<i>Anne Wiedau, Daniel Gilgen, Raune Frankjær, Tristan Goerlich, and Michael Wiedau</i>	
Author Index	715

Contents – Part III

Designing the Social Media Experience

Social Media Interactions and the Use of Third-Party Management Applications on Effectiveness and Perception of Information	3
<i>Çakır Aker and Özgürol Öztürk</i>	
Design Process of a Social Network System for Storage and Share Files in the Workplace.	13
<i>Heloisa Candello, Silvia Bianchi, and Leandro Cassa</i>	
Evolution of e-Research: From Infrastructure Development to Service Orientation	25
<i>Hashim Iqbal Chunpir, Thomas Ludwig, and Dean N. Williams</i>	
Visualizing Group User Behaviors for Social Network Interaction Design Iteration	36
<i>Zhenyu Gu, Jia Ming Yu, Zhanwei Wu, and Zhan Xun Dong</i>	
Understanding the Semantics of Web Interface Signs: A Set of Ontological Principals.	46
<i>Muhammad Nazrul Islam and A.K.M. Najmul Islam</i>	
Cultural Reflections in Qatari Government Websites	54
<i>Nouf Khashman</i>	
Usability Analysis of IxDA.org.	63
<i>Julija Naskova</i>	
How We Perceive Search Engines.	74
<i>Leonardo Penna and Manuela Quaresma</i>	
Clicking Through Endless Seas: Understanding User Experience in the Design of Journalistic Websites	82
<i>Ben Posetti</i>	
Origins and Perspectives on Designing Virtual Communities of Practice for Permanent Education: A Case Study in the Collective Health Sector	94
<i>Carlos Eduardo Ribeiro and Cláudia Renata Mont’Alvão</i>	
The Challenges and Opportunities of Designing National Digital Services for Cross-Border Use.	104
<i>Molly Schwartz and Heli Kautonen</i>	

Designing the Learning Experience

Heuristic Evaluation of University Institutional Repositories Based on DSpace	119
<i>Maha Aljohani and James Blustein</i>	
Building Information Architecture Criteria for Assessing and Evaluating Universities' Web Portals.	131
<i>Hamad Ibrahim Alomran</i>	
Designing with Young Children: Lessons Learned from a Co-creation of a Technology-Enhanced Playful Learning Environment	142
<i>Nanna Borum, Eva Petersson Brooks, and Anthony Lewis Brooks</i>	
Application of Dashboards and Scorecards for Learning Models IT Risk Management: A User Experience.	153
<i>Ernesto Celi</i>	
Mapping Metaphors for the Design of Academic Library Websites	166
<i>Ming-Hsin Phoebe Chiu</i>	
A Holistic Approach to User Experience in the Context of an Academic Library Interactive System	173
<i>Andrea Alessandro Gasparini</i>	
Antique School Furniture, New Technological Features Needs	185
<i>Andreia Gomes, Ernesto Filgueiras, and Luís Lavin</i>	
Analysis of Usability and Information Architecture of the UFRN Institutional Repository	197
<i>Débora Koshiyama, André Luís Santos de Pinho, and José Guilherme Santa Rosa</i>	
Ergonomic and Usability Analysis of Interactive Whiteboards in the Academic Environment.	208
<i>Eduardo Oliveira, Erick Vasconcelos, Elzani Sobral, Sayonara Bittencourt, Tiago Ramos, and Marcelo M. Soares</i>	
E-Learning Platforms and Lacking Motivation in Students: Concept of Adaptable UI for Online Courses	218
<i>Hana Ovesleová</i>	
A Usability Study with Children on an Online Educational Platform	228
<i>Tuba Ugras and Orhan Sener</i>	
Evaluating an Education Department Portal: A Case Study.	240
<i>Xiaojun Yuan, Huahai Yang, Kathleen Moorhead, and Kathleen DeMers</i>	

Designing the Playing Experience

Ads-on Games and Fake Brands: Interactions, Commercials and Playful Branding	251
<i>Herlander Elias, Ernesto Filgueiras, and Breno Carvalho</i>	
Heartbeat Jenga: A Biofeedback Board Game to Improve Coordination and Emotional Control.	263
<i>Yu-Chun Huang and Chung-Hay Luk</i>	
Evaluation of User Experience in Interaction with Computer Games	271
<i>Tihana Lapaš and Tihomir Orehovački</i>	
<i>Doctor Who</i> : Legacy, an Analysis of Usability and Playability of a Multi-platform Game	283
<i>Rennan Raffaele, Renato Alencar, Iran Júnior, Bruno Colley, Gabriel Pontes, Breno Carvalho, and Marcelo M. Soares</i>	
Newsgames: Gameplay and Usability in Simulation Games	292
<i>Carla Teixeira, Breno Carvalho, Jarbas Agra, Valeska Martins, Anthony Lins, Marcelo M. Soares, and André Neves</i>	
Improving Song Guessing Games Through Music Track Composition	303
<i>João Marcelo Teixeira, Dicksson Almeida, Edvar Neto, and Veronica Teichrieb</i>	
Evaluating and Customizing User Interaction in an Adaptive Game Controller	315
<i>Leonardo Torok, Mateus Pelegrino, Jefferson Lessa, Daniela Gorski Trevisan, Cristina N. Vasconcelos, Esteban Clua, and Anselmo Montenegro</i>	
New Research Methods for Media and Cognition Experiment Course	327
<i>Yi Yang, Shengjin Wang, and Liangrui Peng</i>	

Designing the Urban Experience

Learning from Hourly Household Energy Consumption: Extracting, Visualizing and Interpreting Household Smart Meter Data	337
<i>Sam Borgeson, June A. Flora, Jungsuk Kwac, Chin-Woo Tan, and Ram Rajagopal</i>	
Defining HCI/UX Principles for Urban Environment	346
<i>Pavel Farkas</i>	
Participatory Explorations on a Location Based Urban Information System . . .	357
<i>Özge Genç, Damla Çay, and Asım Evren Yantaç</i>	

Diffusion of Feedback: Perceptions and Adoption of Devices in the Residential Market	368
<i>Beth Karlin, Angela Sanguinetti, Nora Davis, Kristen Bendanna, Kristen Holdsworth, Jessie Baker, David Kirkby, and Daniel Stokols</i>	
Design and Implementation of a Mobile Cloud Environmental Application for Riyadh City	380
<i>Heba Kurdi, Amani Al-Fayez, Anfal Al-Tuwaim, Hanan Al-Mohammadi, Mona Al-Mutairi, and Sarah Al-Kharji</i>	
How Do I Get to Room 3106?: Student Wayfinding Designs for Old Main at Wayne State University	390
<i>Judith A. Moldenhauer</i>	
A Practice on Wayfinding System Design with Service Design Thinking	400
<i>Jing Pan and Zhengsheng Yin</i>	
Hidden Presence: Sensing Occupancy and Extracting Value from Occupancy Data	412
<i>Larissa Suzuki, Peter Cooper, Theo Tryfonas, and George Oikonomou</i>	
Designing Apps for Tourists: A Case Study	425
<i>Virginia Tiradentes Souto, Caio Cristo, Maria Gabriela Araújo, and Lucas Santos</i>	
Designing the Driving Experience	
Designing for the Naturalistic Driving Experience	439
<i>Wanda Eugene, Jerone Dunbar, Alison Nolan, Juan E. Gilbert, and Renesha L. Hendrix</i>	
Exploring User Experience in the Wild: Facets of the Modern Car	450
<i>Dimitrios Gkouskos, Ingrid Pettersson, MariAnne Karlsson, and Fang Chen</i>	
Drivers and Automation: A Study About Cultural and Behavioral Influence in the Interaction with Driver Assistants.	462
<i>Rafael Cirino Gonçalves and Manuela Quaresma</i>	
Going on a Road-Trip with My Electric Car: Acceptance Criteria for Long-Distance-Use of Electric Vehicles	473
<i>Julian Halbey, Sylvia Kowalewski, and Martina Ziefle</i>	
A Study on a Split-View Navigation System	485
<i>Jongsung Lee, Heewon Lee, and Sung Woo Kim</i>	

What Travelers Want: An Investigation into User Needs and User Wants on Display 496
Tingyi S. Lin and Chia-Nien Chang

Head Up Display in Automotive: A New Reality for the Driver 505
Annie Pauzie

What Are the Expectations of Users of an Adaptive Recommendation Service Which Aims to Reduce Driver Distraction?. 517
Nadine Walter, Benjamin Kaplan, Carmen Wettemann, Tobias Altmüller, and Klaus Bengler

Cross Cultural Comparison of Users’ Barge-in with the In-Vehicle Speech System 529
Peggy Wang, Ute Winter, and Timothy Grost

Designing the Healthcare Patient’s Experience

PostureMonitor: Real-Time IMU Wearable Technology to Foster Poise and Health 543
Fatemeh Abyarjoo, Nonnarit O-Larnnithipong, Sudarat Tangnimitchok, Francisco Ortega, and Armando Barreto

Robot-Era Project: Preliminary Results on the System Usability 553
Roberta Bevilacqua, Elisa Felici, Fiorella Marcellini, Sebastian Glende, Susann Klemcke, Isabel Conrad, Raffaele Esposito, Filippo Cavallo, and Paolo Dario

User Experience Research on the Rehabilitation System of Speech-Impaired Children: A Case Study on Speech Training Product. 562
Wenyi Cai, Jun Liu, Qiang Liu, and Ting Han

“Keep What You’ve Earned”: Encouraging Sailors to Drink Responsibly. 575
Kristina Cook, Erin Brennan, Colleen Gray, and Teha Kennard

The Use of Generative Techniques in Co-design of mHealth Technology and Healthcare Services for COPD Patients 587
Anita Das, Silje Bøthun, Jarl Reitan, and Yngve Dahl

Human-Computer Interaction in Bed 596
Gustavo Desouza and Ernesto Filgueiras

Designing an Interface Agent-Based Architecture for Creating a Mobile System of Medical Care. 606
Ariel Escobar Endara and Carlos José Pereira de Lucena

A Study of Conversation Support System Between the Elderly Person and Young Adults by Using Facial Expression Analysis	616
<i>Miyuki Iwamoto, Noriaki Kuwahara, and Kazunari Morimoto</i>	
The Turkish Central Doctor Rendezvous System Under Spotlight: A User Study with Turkish Senior Users	628
<i>Edibe Betül Karbay and Kerem Rızvanoğlu</i>	
Evaluation of Users Acceptance of a Digital Medicine Fact Sheet: Findings from a Focus Group	638
<i>Amélia Lageiro, Catarina Lisboa, and Emilia Duarte</i>	
Designing for the Healthcare Professional's Experience	
An Internet of Things Application with an Accessible Interface for Remote Monitoring Patients	651
<i>Chrystinne Oliveira Fernandes and Carlos José Pereira de Lucena</i>	
Three-Dimensional Models and Simulation Tools Enabling Interaction and Immersion in Medical Education.	662
<i>Soeli T. Fiorini, Leonardo Frajhof, Bruno Alvares de Azevedo, Jorge R. Lopes dos Santos, Heron Werner, Alberto Raposo, and Carlos José Pereira de Lucena</i>	
MedData: A Mobile Application Designed for Medical Teams to Monitor Clinical Evolution of Inpatient in ICU Context	672
<i>Carlos Alberto Pereira de Lucena, Cláudia Renata Mont'Alvão, and Bruno Alvares de Azevedo</i>	
A Usability Study of a Gesture Recognition System Applied During the Surgical Procedures.	682
<i>Antonio Opromolla, Valentina Volpi, Andrea Ingrosso, Stefano Fabri, Claudia Rapuano, Delia Passalacqua, and Carlo Maria Medaglia</i>	
A Novel User-Specific Wearable Controller for Surgical Robots	693
<i>Carmen C.Y. Poon, Esther Y.Y. Leung, Ka Chun Lau, Billy H.K. Leung, Yali L. Zheng, Philip W.Y. Chiu, and Yeung Yam</i>	
Author Index	703