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Aaron Marcus · Wentao Wang (Eds.)

Design, User Experience, and Usability

Users, Contexts and Case Studies

7th International Conference, DUXU 2018
Held as Part of HCI International 2018
Las Vegas, NV, USA, July 15–20, 2018
Proceedings, Part III

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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
5. 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 Ioannou
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
29. 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

http://2018.hci.international/proceedings

7th International Conference on Design, User Experience, and Usability

Program Board Chair(s): **Aaron Marcus, USA**
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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
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Heraklion, Crete, Greece
E-mail: general_chair@hcii2019.org

http://2019.hci.international/

Contents – Part III

Emotion, Motivation, and Persuasion Design

Player Behavior Influence by Visualizing the Game Sound Landscape 3
Daniel Paz de Araujo and Renan Bonin

Design of a Task-Management APP to Avoid Procrastination 16
Cayley Guimarães and Danielly J. P. Lazaro

Conformed Thought: Consolidating Traces of Memories 28
Silvia Laurentiz

Research on Service Process Design of Mobile Medical Platform Based on Patient's Emotional Demand 41
Yingying Miao, Tong Cui, and Bin Jiang

PosiTec – How to Adopt a Positive, Need-Based Design Approach 52
Kathrin Pollmann, Nora Fronemann, Anne Elisabeth Krüger, and Matthias Peissner

Do You Eat This? Changing Behavior Through Gamification, Crowdsourcing and Civic Engagement 67
Rejane Spitz, Francisco Queiroz, Clorisval Pereira Jr., Leonardo Cardarelli Leite, Marcelo P. Ferranti, and Peter Dam

Research on Image Emotional Tag Generation Mechanism Based on the "Cloud Pet Keeping" Phenomenon 80
Chen Tang, Ke Zhong, and Liqun Zhang

Persona Design for Just-in-Time Adaptive and Persuasive Interfaces in Menopause Self-care 94
Amaury Trujillo, Caterina Senette, and Maria Claudia Buzzi

Comparing User Experience in Interactions with Different Types of Digital Products 110
Lemeng Xu, Dede Ma, and Pengyi Zhang

Conceptual Framework for Affective and Cognitive Product Design 124
Sol Hee Yoon, Young Woo Kim, and Yong Gu Ji

Research on Information Recommendation Optimization Mechanism Based on Emotional Expression and Cognition 133
Ke Zhong, Liqun Zhang, and Xiaolei Guan

DUXU and Children

The Importance of User-Centered Design in Performing Background Checks in Child Care 149
Fuad Abujarad, Allissa Desloge, Kristina Carlson, and Sarah J. Swierenga

Song of Red Pine Woods - Design and Study of Digital Picture Books for Preschool Children on iPad 158
Qi Cao, Jing-Hua Han, Yu-Yi Ding, Shi Huang, and Chao Liu

A Study on Application of AR Three-Dimensional Touch Interaction in Children Education 170
Yu-Yi Ding, Jing-Hua Han, Qi Cao, and Chao Liu

Bridging the Gulfs: Modifying an Educational Augmented Reality App to Account for Target Users' Age Differences 185
Hannah Klautke, John Bell, Daniel Freer, Cui Cheng, and William Cain

How Animation Improve Children's Cognition in User Interface: A Study of the Kids VOD Application 196
Wei Li, Xuan Zhang, and Yi Shen Zhang

An Interactive Digital Storytelling to Identify Emotions and Consequences in the Elementary School Child 218
Erick López-Ornelas and Rocío Abascal-Mena

Lessons Learned in Designing a Digital Therapeutic Game to Support the Treatment and Well-Being of Children with Cancer 231
Kamila R. H. Rodrigues, Daniel B. F. Conrado, and Vânia P. A. Neris

DUXU in Automotive and Transport

Investigating the Effect of Different Autonomy Levels on User Acceptance and User Experience in Self-driving Cars with a VR Driving Simulator 247
Jana Helgath, Philip Braun, Andreas Pritschet, Maximilian Schubert, Patricia Böhm, and Daniel Isemann

Improving Deaf Driver Experience Through Innovative Vehicle Interactive Design 257
Jingpeng Jia, Xueyan Dong, Yanjuan Lu, Yingjie Qian, and Dai Tang

Interactive Car Parking Simulation Based on On-line Trajectory Optimization. 270
Jungsub Lim, Hyejin Kim, and Daseong Han

Exploring Potential User Experience Design for Traditional Chinese Service Station: A Case Study in Guangzhou, China 285
Zhen Liu, Yifan Meng, Di Xu, Jun-en He, Xiusheng Gu, Lijun Jiang, Xiaohua Li, Shaoxin Wu, and Zhengquan Li

Extraction of Key Factors and Its Interrelationship Critical to Determining the Satisfaction Degree of User Experience in Taxi Passenger Service Using DEMATEL 299
Chunrong Liu, Yi Jin, and Xu Zhu

What Sensory Desires Make Young Chinese Users Prefer One Instrumental Panel Form of Passenger Car to Another? 314
Chunrong Liu, Yang Xie, and Yi Jin

Young Chinese Consumers' Perception of Passenger Car Form in Rear View 329
Chunrong Liu, Yi Jin, Xiaoguo Ding, and Yang Xie

A Method of Car Styling Evaluation Based on Eye Tracking 342
Zhaolin Lu, Shaobing Xu, and Bo Cheng

The Analysis of Visual Communication Design of Commonweal Information Through Interactive Design Thinking - Public Commonweal Information Design and Communication in Urban Traffic Spatial Environment as an Example 351
Shi Peng, Chao Liu, and Wentao Wang

Interaction Design of Autonomous Vehicle Based on Human Mobility 363
Jingyan Qin, Zeyu Hao, and Shujing Zhang

Design Process of a Mobile Cloud Public Transport Application for Bus Passengers in Lima City 375
Juan José Ramírez, Juan Arenas, and Freddy Paz

Factor Model for Passenger Experience in the Aircraft Cabin Design. 389
Siyu Ren, Xinyi Tao, and Ting Han

Smart Flashlight: Navigation Support for Cyclists 406
Bing Jing Wang, Cheng Hung Yang, and Zhen Yu Gu

Smart Information Service Design Based on Autonomous Vehicles 415
Qiong Wu, Long Qin, Yin Shuai Zhang, and Jie Chen

Acceptance and Effectiveness of Collision Avoidance System in Public Transportation 424
Xiaonan Yang and Jung Hyup Kim

A Design for a Public Transport Information Service in China 435
DanDan Yu, MuRong Ding, and Cong Wang

Research on User Needs of Digital Consumption Services in Communicating Vehicles Context 445
Di Zhu

DUXU, Culture and Art

Study on Display Space Design of Off-line Experience Stores of Traditional Handicraft Derivative Product of ICH Based on Multi-sensory Integration 459
Bingmei Bie, Ye Zhang, and Rongrong Fu

Artelligent: A Framework for Developing Interactive Computer Artwork Using Artificial Intelligent Agents 471
Francisco de Paula Barretto and Suzete Venturelli

Conceptual Framework for Supporting the Creation of Virtual Museums with Focus on Natural User Interfaces 490
Guilherme Corredato Guerino, Breno Augusto Guerra Zancan, Tatiany Xavier de Godoi, Daniela de Freitas Guilhermino Trindade, José Reinaldo Merlin, Ederson Marcos Sgarbi, Carlos Eduardo Ribeiro, and Tércio Weslley Sant'Anna de Paula Lima

Rethink of Urban Arts: AR Technology with Participatory Experience of New Urban Arts 503
Ziyang Li, Hao He, and Xiandong Cheng

Study on Introducing Digitalization in Folk Art: Taking Beautiful! Chinese New Year Paintings as an Example 515
Song Lu

The Integration of New Media Art and Chinese Traditional Culture 524
Yunqiao Su

The "Living State" Research of China Non-material Cultural Heritage on Digital Age: Taking the Nanjing Jinling Sutra Office as an Example. 535
Xiaoxian Wang and Hao Liu

Formation and Influence of New Media Art Form in Public Space 550
Lili Zhang and Yunqiao Su

DUXU Case Studies

Compliance with Static vs. Dynamic Warnings in Workplaces such as Warehouses: A Study Using Virtual Reality 563
Ana Almeida, Francisco Rebelo, and Paulo Noriega

Blue-Collars/Tough Designs: UX Within Fire Service Occupational Safety and Health Programs 573
Timothy R. Amidon and Tiffany Lipsey

Peruvian Public Universities and the Accessibility of Their Websites 589
Fanny Dolores Benites Alfaro and Claudia María Del Pilar Zapata Del Río

Co-design with Raspberry Pi: Developing and Hosting Sustainable Community Application 608
Salomao David and Esperança Muchave

Research on the Adaptability of Underground Soft Guidance and Culture Based on Memorability 620
Yang Du, Chao Liu, and Ye Zhang

A Preliminary Study on Design for Different Social Classes 635
Jiong Fu and Chenhui Shi

Investigation on the Correlation Model Between Display Height and Tilt Angle 648
Huimin Hu, Yahui Bai, Chaoyi Zhao, Yinxia Li, Na Lin, and Zhongting Wang

Short Paper: How Do People Choose a Means for Communication in Disaster Situations? Surveys After the Great East Japan Earthquake and the Kumamoto Earthquake 657
Masayuki Ihara and Hiroshi Watanabe

A Platform to Connect Swiss Consumers of Fair Trade Products with Producers in Developing Countries: Needs and Motivations 664
Julia Klammer and Fred W. G. van den Anker

Little Big Choices: Customization in Online User Experience 682
Marco Neves and Maria Reis

The Influence of Short Text Ad. on Consumer Purchase Intention: An Empirical Study 693
Jia Qu and Can Huang

Expected User Acceptance of an Augmented Reality Service for a Smart City 703
Francisco Rebelo, Paulo Noriega, Tiago Oliveira, Daniela Santos, and Sabrina Oliveira

The Design of the SaiteBooker: An Authoring Tool for E-books for Health Distance Learning Courses in Brazil 715
Carla G. Spinillo, Claudio H. Silva, Ana Emília F. Oliveira, Dilson José L. Rabêlo Jr., and Aldrea M. O. Rabelo

Tourism and Virtual Reality: User Experience Evaluation of a Virtual Environment Prototype 730
Yanick Trindade, Francisco Rebelo, and Paulo Noriega

Evaluating the Benefit of Accordion Web Elements for Low Literacy Populations 743
Shannon Tucker, Kathryn Summers, Tim McGowan, and Chris Klimas

Research on Interface of Large-Scale Equipment Network Management System Based on User Experience 756
Lei Wu, Lijun Mou, and Yao Su

Design of Human-Machine Interface System in Inverter Spot Welding. 768
Yancong Zhu and Wei Zhou

Author Index 779