Constantine Stephanidis
Margherita Antona
Stavroula Ntoa
Gavriel Salvendy (Eds.)

Communications in Computer and Information Science 1957

HCI International 2023 – Late Breaking Posters

25th International Conference on Human-Computer Interaction
HCII 2023, Copenhagen, Denmark, July 23–28, 2023
Proceedings, Part I

Part 1

Springer

Communications in Computer and Information Science 1957

Editorial Board Members

Joaquim Filipe, *Polytechnic Institute of Setúbal, Setúbal, Portugal*
Ashish Ghosh, *Indian Statistical Institute, Kolkata, India*
Raquel Oliveira Prates, *Federal University of Minas Gerais (UFMG), Belo Horizonte, Brazil*
Lizhu Zhou, *Tsinghua University, Beijing, China*

Rationale
The CCIS series is devoted to the publication of proceedings of computer science conferences. Its aim is to efficiently disseminate original research results in informatics in printed and electronic form. While the focus is on publication of peer-reviewed full papers presenting mature work, inclusion of reviewed short papers reporting on work in progress is welcome, too. Besides globally relevant meetings with internationally representative program committees guaranteeing a strict peer-reviewing and paper selection process, conferences run by societies or of high regional or national relevance are also considered for publication.

Topics
The topical scope of CCIS spans the entire spectrum of informatics ranging from foundational topics in the theory of computing to information and communications science and technology and a broad variety of interdisciplinary application fields.

Information for Volume Editors and Authors
Publication in CCIS is free of charge. No royalties are paid, however, we offer registered conference participants temporary free access to the online version of the conference proceedings on SpringerLink (http://link.springer.com) by means of an http referrer from the conference website and/or a number of complimentary printed copies, as specified in the official acceptance email of the event.

CCIS proceedings can be published in time for distribution at conferences or as post-proceedings, and delivered in the form of printed books and/or electronically as USBs and/or e-content licenses for accessing proceedings at SpringerLink. Furthermore, CCIS proceedings are included in the CCIS electronic book series hosted in the SpringerLink digital library at http://link.springer.com/bookseries/7899. Conferences publishing in CCIS are allowed to use Online Conference Service (OCS) for managing the whole proceedings lifecycle (from submission and reviewing to preparing for publication) free of charge.

Publication process
The language of publication is exclusively English. Authors publishing in CCIS have to sign the Springer CCIS copyright transfer form, however, they are free to use their material published in CCIS for substantially changed, more elaborate subsequent publications elsewhere. For the preparation of the camera-ready papers/files, authors have to strictly adhere to the Springer CCIS Authors' Instructions and are strongly encouraged to use the CCIS LaTeX style files or templates.

Abstracting/Indexing
CCIS is abstracted/indexed in DBLP, Google Scholar, EI-Compendex, Mathematical Reviews, SCImago, Scopus. CCIS volumes are also submitted for the inclusion in ISI Proceedings.

How to start
To start the evaluation of your proposal for inclusion in the CCIS series, please send an e-mail to ccis@springer.com.

Constantine Stephanidis · Margherita Antona ·
Stavroula Ntoa · Gavriel Salvendy
Editors

HCI International 2023 – Late Breaking Posters

25th International Conference on Human-Computer Interaction
HCII 2023, Copenhagen, Denmark, July 23–28, 2023
Proceedings, Part I

Springer

Editors
Constantine Stephanidis
University of Crete and Foundation for Research and Technology – Hellas (FORTH)
Heraklion, Crete, Greece

Margherita Antona
Foundation for Research and Technology Hellas (FORTH)
Heraklion, Crete, Greece

Stavroula Ntoa
Foundation for Research and Technology Hellas (FORTH)
Heraklion, Crete, Greece

Gavriel Salvendy
University of Central Florida
Orlando, FL, USA

ISSN 1865-0929 ISSN 1865-0937 (electronic)
Communications in Computer and Information Science
ISBN 978-3-031-49211-2 ISBN 978-3-031-49212-9 (eBook)
https://doi.org/10.1007/978-3-031-49212-9

© The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer Nature Switzerland AG 2024

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, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Paper in this product is recyclable.

Foreword

Human-computer interaction (HCI) is acquiring an ever-increasing scientific and industrial importance, as well as having more impact on people's everyday lives, as an ever-growing number of human activities are progressively moving from the physical to the digital world. This process, which has been ongoing for some time now, was further accelerated during the acute period of the COVID-19 pandemic. The HCI International (HCII) conference series, held annually, aims to respond to the compelling need to advance the exchange of knowledge and research and development efforts on the human aspects of design and use of computing systems.

The 25th International Conference on Human-Computer Interaction, HCI International 2023 (HCII 2023), was held in the emerging post-pandemic era as a 'hybrid' event at the AC Bella Sky Hotel and Bella Center, Copenhagen, Denmark, during July 23–28, 2023. It incorporated the 21 thematic areas and affiliated conferences listed below.

A total of 7472 individuals from academia, research institutes, industry, and government agencies from 85 countries submitted contributions, and 1578 papers and 396 posters were included in the volumes of the proceedings that were published just before the start of the conference. Additionally, 267 papers and 133 posters were included in the volumes of the proceedings published after the conference, as "Late Breaking Work". 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. These papers provide academics, researchers, engineers, scientists, practitioners and students with state-of-the-art information on the most recent advances in HCI. The volumes constituting the full set of the HCII 2023 conference proceedings are listed on 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 towards the high scientific quality and overall success of the HCI International 2023 conference. Their manifold support in terms of paper reviewing (single-blind review process, with a minimum of two reviews per submission), session organization and their willingness to act as goodwill ambassadors for the conference is most highly appreciated.

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

July 2023 Constantine Stephanidis

HCI International 2023 Thematic Areas and Affiliated Conferences

Thematic Areas

- HCI: Human-Computer Interaction
- HIMI: Human Interface and the Management of Information

Affiliated Conferences

- EPCE: 20th International Conference on Engineering Psychology and Cognitive Ergonomics
- AC: 17th International Conference on Augmented Cognition
- UAHCI: 17th International Conference on Universal Access in Human-Computer Interaction
- CCD: 15th International Conference on Cross-Cultural Design
- SCSM: 15th International Conference on Social Computing and Social Media
- VAMR: 15th International Conference on Virtual, Augmented and Mixed Reality
- DHM: 14th International Conference on Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management
- DUXU: 12th International Conference on Design, User Experience and Usability
- C&C: 11th International Conference on Culture and Computing
- DAPI: 11th International Conference on Distributed, Ambient and Pervasive Interactions
- HCIBGO: 10th International Conference on HCI in Business, Government and Organizations
- LCT: 10th International Conference on Learning and Collaboration Technologies
- ITAP: 9th International Conference on Human Aspects of IT for the Aged Population
- AIS: 5th International Conference on Adaptive Instructional Systems
- HCI-CPT: 5th International Conference on HCI for Cybersecurity, Privacy and Trust
- HCI-Games: 5th International Conference on HCI in Games
- MobiTAS: 5th International Conference on HCI in Mobility, Transport and Automotive Systems
- AI-HCI: 4th International Conference on Artificial Intelligence in HCI
- MOBILE: 4th International Conference on Design, Operation and Evaluation of Mobile Communications

Conference Proceedings – Full List of Volumes

1. LNCS 14011, Human-Computer Interaction: Part I, edited by Masaaki Kurosu and Ayako Hashizume
2. LNCS 14012, Human-Computer Interaction: Part II, edited by Masaaki Kurosu and Ayako Hashizume
3. LNCS 14013, Human-Computer Interaction: Part III, edited by Masaaki Kurosu and Ayako Hashizume
4. LNCS 14014, Human-Computer Interaction: Part IV, edited by Masaaki Kurosu and Ayako Hashizume
5. LNCS 14015, Human Interface and the Management of Information: Part I, edited by Hirohiko Mori and Yumi Asahi
6. LNCS 14016, Human Interface and the Management of Information: Part II, edited by Hirohiko Mori and Yumi Asahi
7. LNAI 14017, Engineering Psychology and Cognitive Ergonomics: Part I, edited by Don Harris and Wen-Chin Li
8. LNAI 14018, Engineering Psychology and Cognitive Ergonomics: Part II, edited by Don Harris and Wen-Chin Li
9. LNAI 14019, Augmented Cognition, edited by Dylan D. Schmorrow and Cali M. Fidopiastis
10. LNCS 14020, Universal Access in Human-Computer Interaction: Part I, edited by Margherita Antona and Constantine Stephanidis
11. LNCS 14021, Universal Access in Human-Computer Interaction: Part II, edited by Margherita Antona and Constantine Stephanidis
12. LNCS 14022, Cross-Cultural Design: Part I, edited by Pei-Luen Patrick Rau
13. LNCS 14023, Cross-Cultural Design: Part II, edited by Pei-Luen Patrick Rau
14. LNCS 14024, Cross-Cultural Design: Part III, edited by Pei-Luen Patrick Rau
15. LNCS 14025, Social Computing and Social Media: Part I, edited by Adela Coman and Simona Vasilache
16. LNCS 14026, Social Computing and Social Media: Part II, edited by Adela Coman and Simona Vasilache
17. LNCS 14027, Virtual, Augmented and Mixed Reality, edited by Jessie Y.C. Chen and Gino Fragomeni
18. LNCS 14028, Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management: Part I, edited by Vincent G. Duffy
19. LNCS 14029, Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management: Part II, edited by Vincent G. Duffy
20. LNCS 14030, Design, User Experience, and Usability: Part I, edited by Aaron Marcus, Elizabeth Rosenzweig and Marcelo Soares
21. LNCS 14031, Design, User Experience, and Usability: Part II, edited by Aaron Marcus, Elizabeth Rosenzweig and Marcelo Soares
22. LNCS 14032, Design, User Experience, and Usability: Part III, edited by Aaron Marcus, Elizabeth Rosenzweig and Marcelo Soares

23. LNCS 14033, Design, User Experience, and Usability: Part IV, edited by Aaron Marcus, Elizabeth Rosenzweig and Marcelo Soares
24. LNCS 14034, Design, User Experience, and Usability: Part V, edited by Aaron Marcus, Elizabeth Rosenzweig and Marcelo Soares
25. LNCS 14035, Culture and Computing, edited by Matthias Rauterberg
26. LNCS 14036, Distributed, Ambient and Pervasive Interactions: Part I, edited by Norbert Streitz and Shin'ichi Konomi
27. LNCS 14037, Distributed, Ambient and Pervasive Interactions: Part II, edited by Norbert Streitz and Shin'ichi Konomi
28. LNCS 14038, HCI in Business, Government and Organizations: Part I, edited by Fiona Fui-Hoon Nah and Keng Siau
29. LNCS 14039, HCI in Business, Government and Organizations: Part II, edited by Fiona Fui-Hoon Nah and Keng Siau
30. LNCS 14040, Learning and Collaboration Technologies: Part I, edited by Panayiotis Zaphiris and Andri Ioannou
31. LNCS 14041, Learning and Collaboration Technologies: Part II, edited by Panayiotis Zaphiris and Andri Ioannou
32. LNCS 14042, Human Aspects of IT for the Aged Population: Part I, edited by Qin Gao and Jia Zhou
33. LNCS 14043, Human Aspects of IT for the Aged Population: Part II, edited by Qin Gao and Jia Zhou
34. LNCS 14044, Adaptive Instructional Systems, edited by Robert A. Sottilare and Jessica Schwarz
35. LNCS 14045, HCI for Cybersecurity, Privacy and Trust, edited by Abbas Moallem
36. LNCS 14046, HCI in Games: Part I, edited by Xiaowen Fang
37. LNCS 14047, HCI in Games: Part II, edited by Xiaowen Fang
38. LNCS 14048, HCI in Mobility, Transport and Automotive Systems: Part I, edited by Heidi Krömker
39. LNCS 14049, HCI in Mobility, Transport and Automotive Systems: Part II, edited by Heidi Krömker
40. LNAI 14050, Artificial Intelligence in HCI: Part I, edited by Helmut Degen and Stavroula Ntoa
41. LNAI 14051, Artificial Intelligence in HCI: Part II, edited by Helmut Degen and Stavroula Ntoa
42. LNCS 14052, Design, Operation and Evaluation of Mobile Communications, edited by Gavriel Salvendy and June Wei
43. CCIS 1832, HCI International 2023 Posters: Part I, edited by Constantine Stephanidis, Margherita Antona, Stavroula Ntoa and Gavriel Salvendy
44. CCIS 1833, HCI International 2023 Posters: Part II, edited by Constantine Stephanidis, Margherita Antona, Stavroula Ntoa and Gavriel Salvendy
45. CCIS 1834, HCI International 2023 Posters: Part III, edited by Constantine Stephanidis, Margherita Antona, Stavroula Ntoa and Gavriel Salvendy
46. CCIS 1835, HCI International 2023 Posters: Part IV, edited by Constantine Stephanidis, Margherita Antona, Stavroula Ntoa and Gavriel Salvendy
47. CCIS 1836, HCI International 2023 Posters: Part V, edited by Constantine Stephanidis, Margherita Antona, Stavroula Ntoa and Gavriel Salvendy

48. LNCS 14054, HCI International 2023 - Late Breaking Papers: Part I, edited by Masaaki Kurosu, Ayako Hashizume, Aaron Marcus, Elizabeth Rosenzweig, Marcelo Soares, Don Harris, Wen-Chin Li, Dylan D. Schmorrow, Cali M. Fidopiastis, and Pei-Luen Patrick Rau
49. LNCS 14055, HCI International 2023 - Late Breaking Papers: Part II, edited by Qin Gao, Jia Zhou, Vincent G. Duffy, Margherita Antona, and Constantine Stephanidis
50. LNCS 14056, HCI International 2023 - Late Breaking Papers: Part III, edited by Hirohiko Mori, Yumi Asahi, Adela Coman, Simona Vasilache, and Matthias Rauterberg
51. LNCS 14057, HCI International 2023 - Late Breaking Papers: Part IV, edited by Vincent G. Duffy, Heidi Krömker, Norbert A. Streitz, and Shin'ichi Konomi
52. LNCS 14058, HCI International 2023 - Late Breaking Papers: Part V, edited by Jessie Y. C. Chen, Gino Fragomeni, and Xiaowen Fang
53. LNCS 14059, HCI International 2023 - Late Breaking Papers: Part VI, edited by Helmut Degen, Stavroula Ntoa, and Abbas Moallem
54. LNCS 14060, HCI International 2023 - Late Breaking Papers: Part VII, edited by Panayiotis Zaphiris, Andri Ioannou, Robert A. Sottilare, Jessica Schwarz, Fiona Fui-Hoon Nah, Keng Siau, June Wei, and Gavriel Salvendy
55. CCIS 1957, HCI International 2023 - Late Breaking Posters: Part I, edited by Constantine Stephanidis, Margherita Antona, Stavroula Ntoa, and Gavriel Salvendy
56. CCIS 1958, HCI International 2023 - Late Breaking Posters: Part II, edited by Constantine Stephanidis, Margherita Antona, Stavroula Ntoa, and Gavriel Salvendy

https://2023.hci.international/proceedings

25th International Conference on Human-Computer Interaction (HCII 2023)

The full list with the Program Board Chairs and the members of the Program Boards of all thematic areas and affiliated conferences of HCII2023 is available online at:

http://www.hci.international/board-members-2023.php

HCI International 2024 Conference

The 26th International Conference on Human-Computer Interaction, HCI International 2024, will be held jointly with the affiliated conferences at the Washington Hilton Hotel, Washington, DC, USA, June 29 – July 4, 2024. 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 made available on the conference website: http://2024.hci.international/.

General Chair
Prof. Constantine Stephanidis
University of Crete and ICS-FORTH
Heraklion, Crete, Greece
Email: general_chair@2024.hci.international

https://2024.hci.international/

Contents – Part I

HCI Theory and Practice

Components and Events Identification Challenges and Practices in Interactive Prototypes Construction: A Field Study in a Design Course 3
Andrea Alessandrini

How Do NATO Members Define Cyber Operations? 8
Marko Arik

New Trends Based on 4.0 Technologies for the Study of Juvenile Crime: A Bibliometric Study 15
Marlene Ballesta, Sonia Duran, and Alfredo Perez-Caballero

Older Adults Decision-Making During the COVID-19 Infodemic 22
DeeDee Bennett-Gayle and Xiaojun Yuan

Automated Nonverbal Cue Detection in Political-Debate Videos: An Optimized RNN-LSTM Approach 32
Yanru Jiang

Analyzing Smart Cities Governance Publications Using CiteSpace: Integration of Organizational Strategy and Human Resources for Sustainable Urban Development 41
Herman Lawelai and Achmad Nurmandi

Biocompatible Electric Muscle Stimulation Pads with Enhanced Skin Adhesion for Stable Signal Transmission During Varied Physical Movements 49
Chang Kee Lee, Chang Gyu Lee, Jungmin Yun, Ohung Kwon, and Dae Young Lim

A Proposal for Complementary Use of Readiness Potential and NIRS in BMI Development: An Attempt of Assessment Using Hybrid 1DCNN-BiLSTM 55
Puwadej Leelasiri, Fumitaka Aki, Tatsuhiro Kimura, Hiroshi Ohshima, and Kiyoyuki Yamazaki

Different Ways to Deceive: Uncovering the Psychological Effects of the Three Dark Patterns Preselection, Confirmshaming and Disguised Ads 62
Deborah Maria Löschner and Sebastian Pannasch

Design of Decision Tree-Based Face Emotion Interaction in Contextual Game 70
Patcharin Panjaburee, Niwat Srisawasdi, and Sasipim Poompimol

Complex Access Scenarios (CAS) Service Request 78
Rahmira Rufus

Digital Emotion Regulation on Academic Twitter 88
Claudine Tinsman and Laura Csuka

Characteristics of Perceived Time Depends on UI Expression of Waiting Time 96
Toya Yahaba and Namgyu Kang

SciTok - A Web Scraping Tool for Social Science Research 103
Yannick Zelle, Thibault Grison, and Marc Feger

Accessibility, Usability, and UX Design

Onírica: Device with Tangible Interface for the Development of Computational Thinking 113
Juliana Yuri Ando

Why the Wilhelm Scream, One of the Most Well-Known "Easter Egg" Sound Effects in Video Games, is Used, and How to Test Participants' Extent of Assessment by Using a Bayesian Statistical Approach 118
Jakub Binter, Silvia Boschetti, Tomáš Hladký, Daniel Říha, and Hermann Prossinger

User-Centered Design of a Family-Meal Planning Tool 124
Vanja Blažica, Bojan Blažica, and Antonio Solinas

Utilizing Crowdsourced Heuristic Evaluation in the Assessment of User Experience for Online Tools 132
Maha Faisal and Eng.Hadeel AlQouz

Quantifying User Experience Through Self-reporting Questionnaires: A Systematic Analysis of the Sentence Similarity Between the Items of the Measurement Approaches 138
Stefan Graser and Stephan Böhm

Design and Development of a Deep Learning-Based Sign Language Learning Aid for Deaf Teenagers 146
Wenchen Guo, Jingwen Bai, Hongbo Li, Kuo Hsiang Chang, and Jie Xu

FUNgi: An Interactive Toy Designed for Young Children Based on e-Textile Material 151
Xinyi Guo and Qiong Wu

Proposal of a Home Aquarium Using Change Viewpoints 159
Youngjun Lee and Namgyu Kang

Competition or Collaboration? Exploring Interactive Relationships in Live-Streaming Audience Participation Game 167
Yifan Luo, Ke Fang, Xiaojun Wu, Jiahao Li, Zeyan Dao, Yunhan Wang, and Wai Kin (Victor) Chan

Using ProAut Process to Prototype a Social Story Repository for Autistic People 175
Eduardo Feitosa Nunes, Marcela Pessoa, Jr. Jucimar Maia, and Áurea Melo

Voice vs Mouse: The Input Preference of People with Upper-Limb Impairments in a Multi-modal Block-Based Programming Environment 183
Obianuju Okafor

Usability of Reservation Systems of Japanese Airlines 192
Emiri Otsuka and Namgyu Kang

A Design Space for Digital Augmentation of Reading 200
Pedro Ribeiro, Wolfgang Müller, Ido Iurgel, Christian Ressel, and Carrie Ching

Research on Inclusive Design Elements of Urban Innovative Migrants Based on KANO Model 209
Yuwei Wu, Chengwei Wang, and Shuran Li

User Experience of the Portrait Mode of Smartphone: A Comparative Case Study 224
Xu Zhang and Mickey Mengting Zhang

User Experience Centred Design for Chinese Seniors' Community Employment 239
Tianrui Zhu

HCI in Education and Collaborative Learning

AR-Classroom: Investigating User-App-Interactions to Enhance Usability of AR Technology for Learning Two and Three Dimensional Rotations 249
Samantha D. Aguilar, Heather Burte, Philip Yasskin, Jeffrey Liew, Shu-Hao Yeh, Chengyuan Qian, Dezhen Song, Uttamasha Monjoree, Coby Scrudder, and Wei Yan

Personalized Cybersecurity Education: A Mobile App Proof of Concept 257
Yusuf Albayram, David Suess, Yassir Yaghzar Elidrissi, Daniel P. Rollins, and Maciej Beclawski

Enhancing Prototyping Skills of K-12 Students Through Lemon: A Bio-Inspired Robotics Kit 264
İremsu Baş, Demir Alp, Ceren Dolu, Melis Alsan, Andy Emre Koçak, Irmak Atılgan, and Sedat Yalçın

It Takes Sperm and Egg: Improving Social Interdependence by Integrating Asymmetrical Game Design into Collaborative Learning 271
Jiajia He, Ke Fang, Yunxuan Li, Zeyan Dao, and Wai Kin (Victor) Chan

Digital Administration in the Improvement of Information Quality Processes in Teachers. Case, Local Educational Management Unit in Peru 279
Edgar Mitchel Lau-Hoyos, Yessica Erazo-Ordoñez, Juan Máximo Santa Cruz Carhuamaca, Magaly Natalie Uceda-Bazán, Armando José Moreno-Heredia, María Alejandra Castro-Navarro, Blanca Elisa Ramírez-Medina, Flor Elizabeth Obregón-Vara, Claudia Emperatriz Rodríguez-Ortiz, and Jhoselit Lisset Facho-Cornejo

Don't Let Your Remotes Flop! Potential Ways to Incentivize and Increase Study Participants' Use of Edtech 287
Grace C. Lin, Ilana Schoenfeld, Brandon Hanks, and Kathryn Leech

Identification of the Types of Strategies for the Development of Social Competencies in Virtual Environments of Management Students in Colombian Universities 295
Evaristo Navarro, Esperanza Díaz, Enrique Otalora, Alberto Mena, Delia Robles, and Silena Paba

A Study on the Development of Digital Characters for Learning Contents 303
Heehyeon Park

Phone-Based Speech Recognition for Phonetic E-Learning System 311
Chang Ren, Jueting Liu, Dongji Feng, and Cheryl D. Seals

Tell Me What I See: Universal Design and Educational Video for Inclusive Digital Education 318
Andreas Schille and Robin Støckert

A Multi-modal Interactive Picture Book for Chinese Left-Behind Children: A Case Study Based on Dear Ducklings 325
Zhengming Si, Wantong Du, Wenchen Guo, Menghan Shi, and Xiacheng Song

Exploring Mixed Reality Group Activity Visualisations for Teaching Assistants to Support Collaborative Learning 333
Ryota Takahashi, Shizuka Shirai, Hiroyuki Nagataki, Tatsuya Amano, Mehrasa Alizadeh, Mayumi Ueda, Noriko Takemura, Mutlu Cukurova, Hajime Nagahara, and Haruo Takemura

The Role of Media and Advance Organizers in Learning for 5-Year-Old Children 340
Yijia Wang, Lihanjing Wu, and Ting Zhang

Chemist-Computer Interaction: Representation Learning for Chemical Design via Refinement of SELFIES VAE 353
Tom Xu, Nick Velzeboer, and Yoshihiro Maruyama

HCI for Health and Well-Being

Fighting the Increasing Shortage of Qualified Personnel in the Formal and Informal Care Sector with the HEROES App: Co-creation and Design with Older Adults 365
Simone Eicher and Cornelia Ursprung

Study on Sharing Health Guidance Contents Using Health Guidance Visualization System 374
Kaori Fujimura, Taiga Sano, Tae Sato, and Yasuo Ishigure

Early Stage Design of a mHealth Intervention for Managing Gestational Diabetes Mellitus in Bangladeshi Women 380
Ashraful Islam, Eshtiak Ahmed, and Md Rakibul Islam

The Testing of EEG and HRV Parameters to Quantitatively Differentiate between the IGD and Healthy Group 389
Jung-Yong Kim, Sungkyun Im, Dong Joon Kim, Mincheol Whang, and Mi Sook Kim

Dreadphobia: Evaluating the Usability of a Virtual Reality Application in Support of Mental Health 397
Shaimeira Meekins, Elijah Ballou, and Naja A. Mack

Assessing ChatGPT's Performance in Health Fact-Checking: Performance, Biases, and Risks 403
Zhenni Ni, Yuxing Qian, Pascal Vaillant, Marie-Christine Jaulent, and Cédric Bousquet

Digital Animation, Health Education in Post COVID-19 Scenario 409
Jose A. Oleas-Orozco, Carlos Aguayza-Mendieta, Franklin Castillo, and Diego Sanchez

A Study on Improving the Medical Treatment System for Rural Elderly by Using Service Design Thinking – A Case Study of Huangbu Village 417
Bingxuan Shi, Limin Tong, and Haimei Luo

Evaluation of Websites of City and Medical Association Emergency Medical Institutions in Hokkaido 426
Yuki Uenoya and Namgyu Kang

Designing a Strain Textile Sensing System for Shoulder Compensation Monitoring of Stroke Patients 435
Qi Wang, Shiwen Fang, Yuxuan He, and Yucong He

Exploring the Usage, Interpretation, and Implications of Disease Metaphors in Cancer Reports: A Case Analysis of the People's Daily 442
Yuhan Wang and Yuanbing Deng

Product Appearance Design of In Vitro Diagnostic Card Using Colloidal Gold Method Based on Kansei Engineering 450
Yuan Xu and Meiyu Zhou

I-Health - Designing a Smart Massage Product-Service System for the Sub-health Status of Young People Based on Traditional Chinese Tuina Therapy 459
Sixiao Zhao and Mickey Mengting Zhang

Babelt: A Pregnancy Belly Support Belt Connected with an App Designed for Pregnant Women with GDM 470
Na Zhuo and Zhenyu Cheryl Qian

User Experience Design for Cultural Heritage

Reviving Events, Historical Figures and Artefacts in the Context of a Physical Museum Exhibition 481
Antonis Chatziantoniou, Vassiliki Neroutsou, Michalis Sifakis, Emmanouil Zidianakis, Nikolaos Menelaos Stivaktakis, Eirini Kontaki, Andreas Pattakos, Stavroula Ntoa, Nikolaos Partarakis, Margherita Antona, and Constantine Stephanidis

A Mobile Tour Guide with Localization Features and AR Support 489
Michalis Foukarakis, Orestis Faltakas, Giannis Frantzeskakis, Emmanouil Ntafotis, Emmanouil Zidianakis, Eirini Kontaki, Constantina Manoli, Stavroula Ntoa, Nikolaos Partarakis, and Constantine Stephanidis

The Virtual Environment as a Setting for Culture Heritage Mediation 497
Ben Maallem Héla

Research on Construction of Cantonese Cultural Design Resource Library 506
Jiayan Huang and Xumin Wu

Automatic Transcription of Greek Folk Dance Videos to Labanotation Based on Autoencoders 513
Georgios Loupas, Theodora Pistola, Sotiris Diplaris, Christos Stentoumis, Konstantinos Ioannidis, Stefanos Vrochidis, and Ioannis Kompatsiaris

How Do Historians Interact with Digital Cultural Collections? A Study on Search and Selection Behavior 522
Anna Neovesky

ICT and Augmented Reality in Baños de Agua Santa-Ecuador, Tourist Attractions Generation 528
Jose A. Oleas-Orozco, Patricia Jara-Garzón, Franklin Castillo, and Paulina Amaluisa

Factors Influencing the Use of a Mobile Recommender System in Tourism: A Social Cognitive Theory Perspective 537
Panca O. Hadi Putra, Achmad Nizar Hidayanto, Mufti Mahmud, Kongkiti Phusavat, Bricen Sarido Simamora, Dzaky Abdi Al Jabbar, Muhammad Nur Faiz Habibullah, and Prissy Azzahra

Up Start–Creative Industries. Assemblage for Immigrant Integration and Creative Heritage Preservation 548
Paula Reaes Pinto, António Gorgel Pinto, and Paulo Simões Rodrigues

COVID-Free Interaction with Public Displays 556
Antonis Chatziantoniou, Nikolaos Menelaos Stivaktakis, Michalis Sifakis, Emmanouil Zidianakis, George Margetis, George Paparoulis, Nikolaos Partarakis, and Constantine Stephanidis

Interactive Media and Local Art Centered Mobile Modular Museum Design ... 564
Liyuan Zhai

Author Index 571

Contents – Part II

HCI Research in Human-AI Interaction

Features of Persuasive AI in the Workplace 3
Elisavet Averkiadi and Wietske Van Osch

NLP in Healthcare: Developing Interactive Integrated Collaborative Assistants 11
Tamara Babaian and Jennifer Xu

Artificial Intelligence (AI) Facilitated Data-Driven Design Thinking 17
Samir Kumar Dash

Calibrating the Coordination Between Humans and AI by Analyzing the Socio-technical Variety of Task Sharing 25
Thomas Herrmann

Toward HCXAI, Beyond XAI: Along with the Case of Referring Expression Comprehension Under the Personal Context 34
Sangjun Lee

A Systems-Theoretic Approach for the Analysis of AI Ethics 41
Eero Mikael Lumme

Comparative Analysis for Open-Source Large Language Models 48
Amir Schur and Sam Groenjes

Exploration and Evaluation of Prompting Methods for Text Style Transfer 55
Vlad Stefan

Human-Machine Task Allocation in Learning Reciprocally to Solve Problems 65
Dov Te'eni

Conversation N: Visualization Installation Design Based on Voice Interaction 78
Jing Wang and Qiong Wu

Ethical Reflection on Identity of AI Digital Avatars 86
Lanxi Xiao and Qiong Wu

From Auxiliary Design Tools to Intelligent Collaborative Partners: The Transformation of the Relationship Between Design and Computing 94
Lanxi Xiao and Qiong Wu

Exploring AI Music Generation: A Review of Deep Learning Algorithms and Datasets for Undergraduate Researchers 102
Isshin Yunoki, Guy Berreby, Nicholas D'Andrea, Yuhua Lu, and Xiaodong Qu

Preliminary Studies and Prototypes for Machine Learning Based Evaluation of Surfers' Performance on River Waves 117
Michael Zöllner, Stefan Kniesburger, Michael Döllinger, Jan Gemeinhardt, and Moritz Krause

Development of a Camera Motion Estimation Method Utilizing Motion Blur in Images 125
Yuxin Zhao, Hirotake Ishii, and Hiroshi Shimoda

Interaction with Robots and Intelligent Agents

End-To-End Intelligent Automation Loops 135
Joerg Beringer, Alexander-John Karran, Constantinos K. Coursaris, and Pierre-Majorique Leger

Build Belonging and Trust Proactively: A Humanized Intelligent Streamer Assistant with Personality, Emotion and Memory 140
Fengsen Gao, Chengjie Dai, Ke Fang, Yunxuan Li, Ji Li, and Wai Kin (Victor) Chan

Explicit vs. Implicit - Communicating the Navigational Intent of Industrial Autonomous Mobile Robots 148
Nicolas Niessen, Gioele Micheli, and Klaus Bengler

Cognitive Command of Human-Autonomy Systems in EDGE Capabilities 157
Arne Norlander

The Dynamics of Collaborative Decision-Making with Intelligent Systems 167
Burak Öz, Alexander-John Karran, Joerg Beringer, Constantinos K. Coursaris, and Pierre-Majorique Léger

Exploring How Adolescents Collaborate with Robots 173
Mu-Shan Rau, Qiyun Huang, Pin-Hsuan Chen, and Hanjing Huang

Research on Recognition of Facial Expressions and Micro-Expressions for Robot Design 181
Meina Tawaki, Keiko Yamamoto, and Ichi Kanaya

Designing Immersive Experiences in Extended Reality and the Metaverse

iLab-Gloves--Design of AR Experimental Gloves Based on Ergonomics and Force Feedback Technology 191
Qi Ai and Xin He

AR Dance Learning App with a Feedback Feature Through Pose Estimation: DancÆR 198
İremsu Baş, Demir Alp, Lara Ceren Ergenç, Andy Emre Koçak, and Sedat Yalçın

Attention in Virtual Environments: Behavior in Locations Shapes Spatial Connectivity 205
Gi-bbeum Lee, Juhyun Lee, Mi Chang, and Ji-Hyun Lee

Differences in User Experience in Metaverse Model House 213
Dowon Lee, Ji-Hyoun Hwang, Haewon Lim, and Yoojin Han

Hypersphere - XR Design for Metaverse by Synthesizing Neuro Reality and Virtual Reality 221
Jiawen Liu and Mickey Mengting Zhang

Developing a VR Application for an Omnidirectional Treadmill 231
Ethan Perez, Aung Kaung Khant, Christopher Crawford, Veasna Ling, and Daniel Cliburn

HIØF Easy Navigator: An Augmented Reality App Which Guides a User to Reach Their Destination 236
Safayet Anowar Shurid, Mahta Moezzi, Mohaiminul Islam, Pritam Das, and Juan C. Torrado

Core Values for a Mixed Reality Software Development Kit: A Qualitative Study Among Main SDK Tools for XR Development 245
Dayvson Silva, Jordy Pereira, Lucas Almeida, and Marcos Silbermann

A Framework for Accessibility in XR Environments 252
Aikaterini Valakou, George Margetis, Stavroula Ntoa, and Constantine Stephanidis

Understanding a Symphony Orchestra by Reexperience in Virtual Reality 264
Michael Zöllner, Jan Gemeinhardt, and Moritz Krause

Digital Transformation in the Modern Business Landscape

El Boca Electronic Ear in a Company Dedicated to the Sale of Pharmaceutical Products and Toiletry Articles. Peru Case 275
Lady Violeta Dávila Valdera, Madeleine Espino Carrasco, Danicsa Karina Espino Carrasco, Luis Jhonny Dávila Valdera, Anny Katherine Dávila Valdera, Mayury Jackeline Espino Carrasco, Royer Vasquez Cachay, Ricardo Rafael Díaz Calderón, Edson David Valdera Benavides, and Karina Elizabeth Bravo Gonzales

Influence of Social Identity on the Ewom of Restaurants Through a Social Network. Peru Case 285
Luis Jhonny Dávila Valdera, Danicsa Karina Espino Carrasco, Madeleine Espino Carrasco, Lady Violeta Dávila Valdera, Anny Katherine Dávila Valdera, Mayury Jackeline Espino Carrasco, Royer Vasquez Cachay, Ricardo Rafael Díaz Calderón, Ana Maria Alvites Gasco, Enrique Santos Nauca Torres, and Edson David Valdera Benavides

Comparing Samsung and Apple Top-End Mobile Cameras by Using NR-IQA Metrics 294
Anderson V. C. de Oliveira, Sergio C. Tamayo, and Rafael N. Cunha

A Signature Information Generation Method for Judging the Illegality of Cloud-Based Webtoons 300
Seyoung Jang, Injae Yoo, Jaechung Lee, Byeongchan Park, Seok-Yoon Kim, and Youngmo Kim

Sustainable Food Design: A Four-Dimensional Transformation of Theory and Methodology Towards Post Carbon Era 310
Siyang Jing

AmI Garden: An Intelligent Greenhouse for the Implementation of Precision Agriculture Practices 324
George Kapnas, Maria Doxastaki, Manousos Bouloukakis, Christos Stratakis, Nikolaos Menelaos Stivaktakis, Theodoros Evdaimon, Maria Korozi, Asterios Leonidis, George Paparoulis, Margherita Antona, and Constantine Stephanidis

Digital Government Integrating System Combining the Data Complexity 331
Aulia Nur Kasiwi, Dyah Mutiarin, Wahyudi Kumorotomo, Achmad Nurmandi, and Agustiyara

How Wish Created a Compelling Discovery Based Shopping Experience 339
Jonas Kong and Pranav Nair

Technology Acceptance Model for Enhanced Shopping Experience Through Online Recommendation Agent 346
Dária Lališová, Justina Karpavičė, and Torben Tambo

Study on the Cover of WeChat Red Envelope from the Perspective of brand Communication 357
Ouyang Li and Yonglin Zhu

Video Analytics in Business Marketing for Shopping Malls in Ecuador 365
Lizzie Pazmiño-Guevara, Jorge Álvarez-Tello, Mercedes Galarraga-Carvajal, César Pazmiño-Guevara, and Alisson Maldonado-Pazmiño

Designing Scalable Manufacturing Methods for Integrated E-Textile Technologies 372
Sarah A. S. Pichon, Melissa E. van Schaik, Marina Toeters, Eliza Bottenberg, Jolien J. J. T. Hermans, and Javier Ferreira Gonzalez

Identification of Consumer Factors that Influence Purchase Intention in Online C2C Second-Hand Transactions 380
Peihan Wen, Lizhu Tao, and Qian Zhang

Sustainable Hybrid of Agriculture and Urban Ecology Base on Web 3.0 Technology 388
Yuqi Zhang and Yiyuan Huang

HCI in Mobility and Aviation

The Real Sorting Hat – Identifying Driving and Scanning Strategies in Urban Intersections with Cluster Analysis 397
Bianca Biebl and Klaus Bengler

A Follow-Up to an Age-Friendly Protocol to Support Investigations of Autonomous Driving Disengagement on Driver Safety: Results and Recommendations 405
Kirsten Brightman, Kathleen Van Benthem, Chris Herdman, Bruce Wallace, Aidan Lochbihler, Will Sloan, Frank Knoefel, and Shawn Marshall

Designing a Hazard Taxonomy: A Key Step in Studying the Risk Perception of Aviation Maintenance Mechanics 413
Raphaël Chirac, Herimanana Zafiharimalala, Arturo Martinez-Gracida, Franck Cazaurang, and Jean-Marc Andre

HMI Interfaces of Unmanned Automated Taxi Services: What Is Essential Information? 422
Bogyu Choi, Wonjun Seo, and Ji Hyun Yang

Exploring the Driver's Mental Control Model: Concepts and Insights 431
Sara Hong and Ji Hyun Yang

Evaluation of ATCO Situational Awareness in a Flow-Centric Air Traffic Environment Using SAGAT 438
Kiranraj Pushparaj, Ahmad Sufian Bin Jumad, Duy Vu-Tran, Koji Tominaga, and Sameer Alam

Case Studies in HCI

Ergonomic Risk Exposure Groups: An Experience of a Mining Company in Brazil 449
Simony Andrade

How Anonymous Are Your Anonymized Data? The AnyMApp Case Study 456
Ana Ferreira, Francisco Bischoff, Rute Almeida, Luís Nogueira-Silva, Ricardo Cruz-Correia, and Joana Muchagata

Toxic Behavior and Tilt as Predictors of Mental Toughness in League of Legends Players of Argentina 464
Pablo Christian González Caino and Santiago Resett

Furry - Design of Augmented Reality Blind Box 469
Winchy Wenqi Jia and Mickey Mengting Zhang

Evaluation of Emotional Changes Caused by Wearing Gothic Lolita Using Physiological Sensors 478
Linze Jing, Chen Feng, Yanzhi Li, and Midori Sugaya

A Study of the Comparative Evaluation System of the Lower-Limb Exoskeleton 485
Yong-Ku Kong, Sang-Soo Park, Jin-Woo Shim, Dae-Min Kim, Heung-Youl Kim, and Hyun-Ho Shim

A Close Observation of the Dynamic Inspiration for Interactive Jewelry 493
Shoupeng Li, Dihui Chu, Fangzhou Dong, and Qiang Li

AnyMApp for Online Usability Testing: The Use-Case of Inspirers-HTN 503
Joana Muchagata, Francisco Bischoff, Rute Almeida, Luís Nogueira-Silva, Ricardo Cruz-Correia, and Ana Ferreira

Electric Toothbrush Modeling Design Based on Kansei Engineering 511
Yan Wang and Qiuyue Jin

Proposal of Kansei Support System to Choose Menu Based on a Survey at Kaiten-Sushi Restaurant 520
Atsuhiro Watanabe and Namgyu Kang

A Study on GML-Based Encryption Technology for Open-Source Software License and Service Structure Analysis in Cloud-Based Micro Service Architecture Environment 528
SeongCheol Yoon, YongWoon Hwang, Won-Bin Kim, and Im-Yeong Lee

Author Index 533