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Dylan D. Schmorrow · Cali M. Fidopiastis (Eds.)

Augmented Cognition

Enhancing Cognition and Behavior in Complex Human Environments

11th International Conference, AC 2017
Held as Part of HCI International 2017
Vancouver, BC, Canada, July 9–14, 2017
Proceedings, Part II

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Foreword

The 19th International Conference on Human–Computer Interaction, HCI International 2017, was held in Vancouver, Canada, during July 9–14, 2017. The event incorporated the 15 conferences/thematic areas listed on the following page.

A total of 4,340 individuals from academia, research institutes, industry, and governmental agencies from 70 countries submitted contributions, and 1,228 papers 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 set of the 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 to the highest scientific quality and the overall success of the HCI International 2017 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.

April 2017

Constantine Stephanidis

HCI International 2017 Thematic Areas and Affiliated Conferences

Thematic areas:

- Human–Computer Interaction (HCI 2017)
- Human Interface and the Management of Information (HIMI 2017)

Affiliated conferences:

- 17th International Conference on Engineering Psychology and Cognitive Ergonomics (EPCE 2017)
- 11th International Conference on Universal Access in Human–Computer Interaction (UAHCI 2017)
- 9th International Conference on Virtual, Augmented and Mixed Reality (VAMR 2017)
- 9th International Conference on Cross-Cultural Design (CCD 2017)
- 9th International Conference on Social Computing and Social Media (SCSM 2017)
- 11th International Conference on Augmented Cognition (AC 2017)
- 8th International Conference on Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management (DHM 2017)
- 6th International Conference on Design, User Experience and Usability (DUXU 2017)
- 5th International Conference on Distributed, Ambient and Pervasive Interactions (DAPI 2017)
- 5th International Conference on Human Aspects of Information Security, Privacy and Trust (HAS 2017)
- 4th International Conference on HCI in Business, Government and Organizations (HCIBGO 2017)
- 4th International Conference on Learning and Collaboration Technologies (LCT 2017)
- Third International Conference on Human Aspects of IT for the Aged Population (ITAP 2017)

Conference Proceedings Volumes Full List

1. LNCS 10271, Human–Computer Interaction: User Interface Design, Development and Multimodality (Part I), edited by Masaaki Kurosu
2. LNCS 10272 Human–Computer Interaction: Interaction Contexts (Part II), edited by Masaaki Kurosu
3. LNCS 10273, Human Interface and the Management of Information: Information, Knowledge and Interaction Design (Part I), edited by Sakae Yamamoto
4. LNCS 10274, Human Interface and the Management of Information: Supporting Learning, Decision-Making and Collaboration (Part II), edited by Sakae Yamamoto
5. LNAI 10275, Engineering Psychology and Cognitive Ergonomics: Performance, Emotion and Situation Awareness (Part I), edited by Don Harris
6. LNAI 10276, Engineering Psychology and Cognitive Ergonomics: Cognition and Design (Part II), edited by Don Harris
7. LNCS 10277, Universal Access in Human–Computer Interaction: Design and Development Approaches and Methods (Part I), edited by Margherita Antona and Constantine Stephanidis
8. LNCS 10278, Universal Access in Human–Computer Interaction: Designing Novel Interactions (Part II), edited by Margherita Antona and Constantine Stephanidis
9. LNCS 10279, Universal Access in Human–Computer Interaction: Human and Technological Environments (Part III), edited by Margherita Antona and Constantine Stephanidis
10. LNCS 10280, Virtual, Augmented and Mixed Reality, edited by Stephanie Lackey and Jessie Y.C. Chen
11. LNCS 10281, Cross-Cultural Design, edited by Pei-Luen Patrick Rau
12. LNCS 10282, Social Computing and Social Media: Human Behavior (Part I), edited by Gabriele Meiselwitz
13. LNCS 10283, Social Computing and Social Media: Applications and Analytics (Part II), edited by Gabriele Meiselwitz
14. LNAI 10284, Augmented Cognition: Neurocognition and Machine Learning (Part I), edited by Dylan D. Schmorow and Cali M. Fidopiastis
15. LNAI 10285, Augmented Cognition: Enhancing Cognition and Behavior in Complex Human Environments (Part II), edited by Dylan D. Schmorow and Cali M. Fidopiastis
16. LNCS 10286, Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management: Ergonomics and Design (Part I), edited by Vincent G. Duffy
17. LNCS 10287, Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management: Health and Safety (Part II), edited by Vincent G. Duffy
18. LNCS 10288, Design, User Experience, and Usability: Theory, Methodology and Management (Part I), edited by Aaron Marcus and Wentao Wang

19. LNCS 10289, Design, User Experience, and Usability: Designing Pleasurable Experiences (Part II), edited by Aaron Marcus and Wentao Wang
20. LNCS 10290, Design, User Experience, and Usability: Understanding Users and Contexts (Part III), edited by Aaron Marcus and Wentao Wang
21. LNCS 10291, Distributed, Ambient and Pervasive Interactions, edited by Norbert Streitz and Panos Markopoulos
22. LNCS 10292, Human Aspects of Information Security, Privacy and Trust, edited by Theo Tryfonas
23. LNCS 10293, HCI in Business, Government and Organizations: Interacting with Information Systems (Part I), edited by Fiona Fui-Hoon Nah and Chuan-Hoo Tan
24. LNCS 10294, HCI in Business, Government and Organizations: Supporting Business (Part II), edited by Fiona Fui-Hoon Nah and Chuan-Hoo Tan
25. LNCS 10295, Learning and Collaboration Technologies: Novel Learning Ecosystems (Part I), edited by Panayiotis Zaphiris and Andri Ioannou
26. LNCS 10296, Learning and Collaboration Technologies: Technology in Education (Part II), edited by Panayiotis Zaphiris and Andri Ioannou
27. LNCS 10297, Human Aspects of IT for the Aged Population: Aging, Design and User Experience (Part I), edited by Jia Zhou and Gavriel Salvendy
28. LNCS 10298, Human Aspects of IT for the Aged Population: Applications, Services and Contexts (Part II), edited by Jia Zhou and Gavriel Salvendy
29. CCIS 713, HCI International 2017 Posters Proceedings (Part I), edited by Constantine Stephanidis
30. CCIS 714, HCI International 2017 Posters Proceedings (Part II), edited by Constantine Stephanidis

Augmented Cognition

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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-2017.php>



HCI International 2018

The 20th International Conference on Human–Computer Interaction, HCI International 2018, will be held jointly with the affiliated conferences in Las Vegas, NV, USA, at Caesars Palace, July 15–20, 2018. 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 is available on the conference website: <http://2018.hci.international/>.

General Chair

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