

## Preface

The HBU workshops gather researchers dealing with the problem of modeling human behavior under its multiple facets (expression of emotions, display of complex social and relational behaviors, performance of individual or joint actions, etc.). This year, the seventh edition of the workshop was organized with challenges of designing solutions with children in mind, with the cross-pollination of different disciplines, bringing together researchers of multimedia, robotics, HCI, artificial intelligence, pattern recognition, interaction design, ambient intelligence, and psychology. The diversity of human behavior, the richness of multi-modal data that arises from its analysis, and the multitude of applications that demand rapid progress in this area ensure that the HBU workshops provide a timely and relevant discussion and dissemination platform.

The HBU workshops were previously organized as satellite events to the ICPR (Istanbul, Turkey, 2010), AMI (Amsterdam, The Netherlands, 2011), IROS (Vilamoura, Portugal, 2012), ACM Multimedia (Barcelona, Spain, 2013), ECCV (Zurich, Switzerland, 2014) and UBICOMP (Osaka, Japan, 2015) conferences, with different focus themes. The focus theme of this year's HBU workshop was "Behavior Analysis and Multimedia for Children."

With each passing year, children begin using computers and related devices at younger and younger ages. The initial age of computer usage is steadily getting lower, yet there are many open issues in children's use of computers and multimedia. In order to tailor multimedia applications to children, we need smarter applications that understand and respond to the users' behavior, distinguishing children and adults if necessary. Collecting data from children and working with children in interactive applications call for additional skills and interdisciplinary collaborations. Subsequently, this year's workshop promoted research on the automatic analysis of children's behavior. Specifically, the call for papers solicited contributions on age estimation, detection of abusive and aggressive behaviors, cyberbullying, inappropriate content detection, privacy and ethics of multimedia access for children, databases collected from children, monitoring children during social interactions, and investigations into children's interaction with multimedia content.

The keynote speakers of the workshop were Dr. Paul Vogt (Tilburg University), with a talk entitled "Modelling Child Language Acquisition in Interaction from Corpora" and Dr. Isabela Granic (Radboud University Nijmegen), with a talk on "Bridging Developmental Science and Game Design to Video Games That Build Emotional Resilience." We thank our keynotes for their contributions.

This proceedings volume contains the papers presented at the workshop. We received 17 submissions, of which 10 were accepted for oral presentation at the workshop (the acceptance rate is 58 %). Each paper was reviewed by at least two members of the Technical Program Committee. The papers submitted by the co-chairs were handled by other chairs both during reviewing and during decisions. The Easy-Chair system was used for processing the papers. The present volume collects the

accepted papers, revised for the proceedings in accordance with reviewer comments, and presented at the workshop. The papers are organized into thematic sections on “Behavior Analysis During Play,” “Daily Behaviors,” “Vision-Based Applications,” and “Gesture and Movement Analysis.” Together with the invited talks, the focus theme was covered in one paper session as well as in a panel session organized by Dr. Rita Cucchiara (University of Modena and Reggio Emilia).

We would like to take the opportunity to thank our Program Committee members and reviewers for their rigorous feedback as well as our authors and our invited speakers for their contributions.

October 2016

Mohamed Chetouani  
Jeffrey Cohn  
Albert Ali Salah



<http://www.springer.com/978-3-319-46842-6>

Human Behavior Understanding  
7th International Workshop, HBU 2016, Amsterdam,  
The Netherlands, October 16, 2016, Proceedings  
Chetouani, M.; Cohn, J.; Salah, A.A. (Eds.)  
2016, X, 159 p. 44 illus., Softcover  
ISBN: 978-3-319-46842-6