# Proceedings of the 12<sup>th</sup> Biannual Conference of the Italian SIGCHI Chapter

CHItaly '17, 18-20 September 2017, Cagliari, Italy





General Chairs: Fabio Paternò and Lucio Davide Spano Program Chairs: Carmelo Ardito and Carmen Santoro Proceedings Chair: Fabio Sorrentino

In cooperation with:



# Foreword

Carmelo Ardito, Carmen Santoro, Fabio Paternò, Lucio Davide Spano, Fabio Sorrentino

User Interfaces have become pervasive in many scenarios: from learning to entertainment, from mobile and personal interaction to the smart environments shared among different people. This wide spectrum of applications requires different interaction techniques and design solutions, involving various types of devices and approaches: common desktop or mobile interfaces, augmented and virtual reality, gestures, tangibles, physical objects etc. The user's experience depends not only on the usability of a single application or device, but also on the integration of ecosystems composed of people, interfaces, systems and devices dynamically connected in the environment.

The twelfth Edition of CHItaly addresses such themes, bringing together various innovative research contributions that will stimulate the growth of the Human-Computer Interaction field. CHItaly is the biannual conference organised by the Italian Chapter of the ACM SIGCHI. The theme of this edition was "Towards the Mediterranean", because we wanted to encourage participation from countries in this geographical area. It took place in a wonderful Mediterranean island, Sardinia.

The proceedings include 15 full papers and 11 short papers. We received 77 submissions, 49 long and 28 short papers. Their authors come from 17 countries: Austria, Bangladesh, Chile, Denmark, Finland, France, Germany, Greece, India, Italy, South Korea, Norway, Portugal, Spain, Switzerland, United States of America, United Kingdom. This demonstrates how this event has become recognised by the international HCI community.

The program was structured into a number of sessions that addressed important HCI topics such as recognition of activities and emotions, personalisation, contextual interaction, smart environments, assistive interfaces, augmented and virtual reality, innovative interactive experiences, games, learning, making and information visualisation. Two invited speakers provided interesting talks: Michel Beaudouin-Lafon, from the Université Paris-Sud, France, spoke about "*Towards Unified Principles of Interaction*"; while Marianna Obrist, from the University of Sussex, United Kingdom, presented "*Mastering the Senses in HCI: Towards Multisensory Interfaces*".

The Conference program also featured a Poster and Demo session (co-chairs Paolo Bottoni and Samuel Iacolina) with 12 presented works, the Doctoral Consortium (co-chairs Andrea Giachetti and Cristina Gena). In addition, it hosted three co-located workshops (co-chairs Giuseppe Ghiani and Sebastiano Bagnara) with different topics: games ("*GHItaly '17: First Workshop on Game-Human Interaction*," organised by Maria De Marsico, Laura Anna Ripamonti, Davide Gadia, Dario Maggiorini and Ilaria Marian), mid-air gestures and speech-based interaction ("*Designing, Implementing and Evaluating Mid-Air Gestures and Speech-Based Interaction*", organised by Michela Ferron, Nadia Mana, Ornella Mich, Leonardo Badino and Ryad Benosman) and HCI education ("*HCI and education in a changing world: from school to public engagement*", organised by Fabio Pittarello, Gualtiero Volpe and Massimo Zancanaro). The editorials describing the workshop aims and contributions are included in these proceedings.

We thank the 81 members of the Program Committee that helped with the reviews of the high number of submissions, the companies that supported the event (Abinsula, Inpeco, Money Farm, ShopFully), the Interaction Design Foundation that offered prizes for the best papers and all the participants in the conference that contributed to creating such an interesting program.

# **Table of Contents**

#### **SESSION: Keynotes**

- 1. Towards Unified Principles of Interaction Michel Beaudouin-Lafon
- 2. Mastering the Senses in HCI: Towards Multisensory Interfaces Marianna Obrist

## **SESSION:** Activity & Emotion Recognition

- 3. Toward Naturalistic Self-Monitoring of Medicine Intake Selima Curci, Alessandro Mura and Daniele Riboni
- 4. Exploiting Correlation between Body Gestures and Spoken Sentences for Real-time Emotion Recognition Fabrizio Milazzo, Agnese Augello, Giovanni Pilato, Vito Gentile, Antonio Gentile and Salvatore Sorce

## **SESSION:** Personalisation & User Context

- 5. Writing Postcards from the Museum: Composing Personalised Tangible Souvenirs Elena Not, Massimo Zancanaro, Mark T. Marshall, Daniela Petrelli and Anna Pisetti
- 6. Enabling Elderly Personalisation of Remote Assistant Applications Cristina Chesta, Luca Corcella, Stefan Kroll, Marco Manca, Julia Nuss, Fabio Paternò and Carmen Santoro
- 7. A two-step, user-centered approach to personalized tourist recommendations Valeria Orso, Alessandra Varotto, Stefano Rodaro, Anna Spagnolli, Giulio Jacucci, Salvatore Andolina, Jukka Leino and Luciano Gamberini
- 8. A Link Back to MemoryLane: The Role of Context in Bookmarking and Refinding *Hyeon Kyeong Hwang, Eelco Herder and Marco Ronchetti*

#### **SESSION: Smart Environments**

- 9. Evaluating Natural Interaction with a Shop Window Berardina Nadja De Carolis and Giuseppe Palestra
- **10.** Towards Natural Interaction with Smart Homes Francesco Benzi, Daniela Fogli and Giovanni Guida
- 11. Smart Furniture and Technologies for Supporting Distributed Learning Groups Martina Senis, Giovanni Atzori, Fabio Sorrentino, Lucio Davide Spano and Gianni Fenu

# **SESSION: Assistive Scenarios**

- 12. Testing web-based solutions for improving reading tasks in students with dyslexia *Giulia Venturini and Cristina Gena*
- 13. A formative user-based usability study for an advanced cognitive rehabilitation system *Floriano Zini, Elena Maria Bressan and Mauro Gaspari*
- 14. Questioning User Experience: A Comparison Between Visual, Auditory and Haptic Guidance Feedbacks Among Older Pedestrians Angelique Montuwy, Béatrice Cahour and Aurélie Dommes
- **15.** HoloLens-based Mixed Reality Experiences for Subjects with Alzheimer's Disease Beatrice Aruanno, Franca Garzotto and Mario Covarrubias Rodriguez

## **SESSION: Augmented & Virtual Reality**

- **16.** Experimenting with PlayVR, a virtual reality experience for the world of theatre *Fabio Pittarello*
- 17. Traffic Augmentation as a Means to Increase Trust in Automated Driving Systems Philipp Wintersberger, Tamara von Sawitzky, Anna Katharina Frison and Andreas Riener

#### **SESSION: Interactive Experiences**

- 18. Interacting with augmented paper maps: a user experience study George Margetis, Stavroula Ntoa, Margherita Antona and Constantine Stephanidis
- **19.** Interaction-in-the-large vs interaction-in-the-small in multi-device systems *Augusto Celentano and Emmanuel Dubois*
- 20. Bus Stops as Interactive Touchpoints Improving Engagement and Use of Public Transport *Catia Prandi, Valentina Nisi and Nuno Nunes*
- 21. TouchTap: a gestural technique to edit text on multi-touch capable mobile devices *Vittorio Fuccella and Benoît Martin*

#### **SESSION:** Games

- 22. FUN PLEdGE 2.0: a FUNny Platformers LEvels GEnerator (Rhythm Based) Claudio Mazza, Laura Anna Ripamonti, Dario Maggiorini and Davide Gadia
- 23. Gamification for crowdsourced data collection in mobile usability field studies Silvia Malatini, Cuno Lorenz Klopfenstein and Alessandro Bogliolo
- 24. GHOST: a GHOst STory-writer Andrea Guarneri, Laura Anna Ripamonti, Francesco Tissoni, Marco Trubian, Dario Maggiorini and Davide Gadia

## **SESSION: Learning**

- 25. A multimodal corpus for technology-enhanced learning of violin playing Gualtiero Volpe, Ksenia Kolykhalova, Erica Volta, Simone Ghisio, George Waddell, Paolo Alborno, Stefano Piana, Corrado Canepa and Rafael Ramirez-Melendez
- 26. Design of IoT Tangibles for Primary Schools Rosella Gennari, Alessandra Melonio, Mehdi Rizvi and Andrea Bonani

# **SESSION: Making and Visualising**

- 27. Co-creating Interactive Obstacles and DIY Skateboarding Spaces Oskar Galewicz and Alma Leora Culén
- 28. RAWGraphs: A Visualisation Platform to Create Open Outputs Michele Mauri, Tommaso Elli, Giorgio Caviglia, Giorgio Uboldi and Matteo Azzi

#### WORKSHOP SESSION

- 29. GHItaly '17: First Workshop on Game-Human Interaction Maria De Marsico, Laura Anna Ripamonti, Davide Gadia, Dario Maggiorini and Ilaria Marian
- **30.** Designing, Implementing and Evaluating Mid-Air Gestures and Speech-Based Interaction *Michela Ferron, Nadia Mana, Ornella Mich, Leonardo Badino and Ryad Benosman*
- 31. HCI and education in a changing world: from school to public engagement *Fabio Pittarello, Gualtiero Volpe and Massimo Zancanaro*