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Intelligent Virtual Agents

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Preface

This volume presents the proceedings of the 17th International Conference on Intelligent Virtual Agents (IVA 2017). The annual IVA conference represents the main interdisciplinary scientific forum for presenting research on modeling, developing, and evaluating intelligent virtual agents (IVAs) with a focus on communicative abilities and social behavior. IVAs are intelligent digital interactive characters that can communicate with humans and other agents using natural human modalities such as facial expressions, speech, gestures, and movement. They are capable of real-time perception, cognition, emotion, and action that allow them to participate in dynamic social environments. In addition to exploring theoretical issues, the conference showcases working applications. Constructing and studying IVAs requires knowledge, theories, methods, and tools from a wide range of fields such as computer science, psychology, cognitive science, communication, linguistics, interactive media, human–computer interaction, and artificial intelligence.

The IVA conference was started in 1998 as a Workshop on Intelligent Virtual Environments at the European Conference on Artificial Intelligence in Brighton, UK, and was followed by a similar one in 1999 in Salford, Manchester, UK. Subsequently, dedicated stand-alone IVA conferences took place in Madrid, Spain, in 2001; Irsee, Germany, in 2003; and on Kos, Greece, in 2005. In 2006 IVA became a full-fledged annual international event, first held in Marina del Rey, California, followed by Paris in 2007, Tokyo in 2008, Amsterdam in 2009, Philadelphia in 2010, Reykjavik in 2011, Santa Cruz, California in 2012, Edinburgh in 2013, Boston in 2014, Delft in 2015, and Los Angeles in 2016.

IVA 2017 was held in Stockholm, Sweden, at the Swedish National Museum of Science and Technology (Tekniska Museet) and KTH Royal Institute of Technology (Kungliga Tekniska Högskolan).

IVA 2017's special topic was "Situated Intelligent Agents", that is, agents that have awareness of and/or make use of their environment (physical or virtual). The theme addresses the synergies between agents with different embodiments, from embodied virtual characters to social robots. Advances in both domains require the development of computational capabilities that allow robots and virtual characters to engage in those direct, unstructured, and dynamically evolving social interactions that characterize humans. We particularly welcomed contributions that addressed the cross-fertilization of state-of-the-art insights and methods from the domains of embodied virtual characters, computer games, social robotics, and social sciences in order to support the development of skills necessary to enable the vision of designing better machines capable of achieving better action, better awareness, and better interaction to engage in intuitive, lifelike, sustained encounters with individuals and groups.

The interdisciplinary character of IVA 2017 and its special topic are underlined by the conference's three renowned keynote speakers:

- Bilge Mutlu, University of Wisconsin–Madison, USA
- Petra Wagner, Bielefeld University, Germany
- Iain Matthews, Oculus Research, USA

IVA 2017 received 78 submissions. Out of the 50 long paper submissions, only 13 were accepted for the long papers track. Furthermore, there were 17 short papers selected for the single-track paper session, while 22 poster papers and 9 interactive demos were on display.

This year's IVA also included three workshops that took place before the main conference:

- "Interaction with Agents and Robots: Different Embodiments, Common Challenges", organized by Mathieu Chollet, Ayan Ghosh, Hagen Lehmann, and Yukiko Nakano
- "Workshop on Conversational Interruptions in Human-Agent Interactions (CIHAI)", organized by Angelo Cafaro, Eduardo Coutinho, Patrick Gebhard, and Blaise Portard
- "Persuasive Embodied Agents for Behavior Change", organized by Femke Beute, Robbert Jan Beun, Timothy Bickmore, Tibor Bosse, Willem-Paul Brinkman, Joost Broekens, Franziska Burger, John-Jules Ch. Meyer, Mark Neerincx, Rifca Peters, Albert "Skip" Rizzo, Roelof de Vries, and Khiet Truong

We would like to express thanks to the rest of the conference's Organizing Committee, listed herein. We would also like to thank the Senior Program Committee and the Program Committee for helping shape this excellent conference program and for their time, effort, and constructive feedback to the authors. Additionally, we want to thank our keynote speakers for sharing their outstanding work and insights with the community. Further, we would like to thank our sponsors, including Springer, Disney Research, and Furhat Robotics, and the organizers of IVA 2016 and the IVA Steering Committee.

August 2017

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