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Stefan Kopp
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Gesture in Embodied Communication and Human-Computer Interaction

8th International Gesture Workshop, GW 2009
Bielefeld, Germany, February 25-27, 2009
Revised Selected Papers

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Preface

The International Gesture Workshops (GW) are interdisciplinary events for those researching gesture-based communication across the disciplines. The focus of these events is a shared interest in understanding gestures and sign language in their many facets, and using them for advancing human-machine interaction. Since 1996, International Gesture Workshops have been held roughly every second year, with fully reviewed proceedings published by Springer.

The International Gesture Workshop GW 2009 was hosted by Bielefeld University's Center for Interdisciplinary Research (ZiF – Zentrum für interdisziplinäre Forschung) during February 25–27, 2009. Like its predecessors, GW 2009 aimed to provide a platform for participants to share, discuss, and criticize recent and novel research with a multidisciplinary audience. More than 70 computer scientists, linguistics, psychologists, neuroscientists as well as dance and music scientists from 16 countries met to present and exchange their newest results under the umbrella theme “Gesture in Embodied Communication and Human-Computer Interaction.”

Consistent with the steady growth of research activity in this area, a large number of high-quality submissions were received, which made GW 2009 an exciting and important event for anyone interested in gesture-related technological research relevant to human-computer interaction. In line with the practice of previous gesture workshops, presenters were invited to submit their papers for publication in a subsequent peer-reviewed publication of high quality. The present book is the outcome of this effort. Representing the research work from eight countries, it contains a selection of 28 thoroughly reviewed articles.

An invited contribution by keynote speaker Asli Özyürek (Radboud University Nijmegen and Max Planck Institute for Psycholinguistics) addressed behavioral and brain research on the mechanisms that underlie processing of high-level multimodal semantic information conveyed through speech and hand gestures during production and comprehension of utterances. The invited contribution by keynote speaker Antonio Camurri and colleagues (InfoMus Lab, DIST – University of Genova) presented a survey of their research on analysis of expressive gesture and how it is evolving toward the analysis of expressive social interaction in groups of users. Further included is the extended abstract of keynote speaker Alex Waibel's contribution on multimodal interfaces in support of human-human interaction.

The papers in this book are ordered in eight sections pertaining to the following themes:

- Brain and Behavioral Analysis of Gesture
- Concepts of Gesture
- Gesture Recognition
- Gesture Processing
- Gesture Simulation
- Gesture-Based Interfaces
- Sign Language

The work presented in these papers encompasses a multitude of research areas from among: cognitive and psychological mechanisms of gesture; gestures in context and multi-modality; theoretical conceptions of gesture; automatic recognition, interpretation, and synthesis of gestures and sign language; specification and computational representation of gestures; real-time and continuous gesture and human-movement tracking; automatic processing and analysis of gestural behaviors; gesture and musical performances; user issues and interface paradigms; application in interactive systems.

We are grateful to the authors of the articles in this volume as well as to the international reviewers who provided very helpful input. We hope that the results of their hard work will be perceived as a timely and inspiring reference for an interdisciplinary audience of researchers and practitioners interested in gesture in embodied communication and human–computer interaction. Thanks also to the local committee, Kirsten Bergmann, Hendrik Buschmeier and Petra Udelhoven, as well as Marina Hoffmann and the whole ZiF team for hosting the event and contributing to a well-attended and lively meeting. Last but not least, financial support by the ZiF, as well as by the Center of Excellence “Cognitive Interaction Technology (CITEC)” and the Collaborative Research Center “Alignment in Communication,” is gratefully acknowledged.

January 2010

Stefan Kopp
Ipke Wachsmuth

Notes

Webpages for GW 2009 can be accessed under <http://www.gw2009.de/>.

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