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Man-Machine Interactions 6

6th International Conference on
Man-Machine Interactions, ICMMI 2019,
Cracow, Poland, October 2–3, 2019

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The computer is incredibly fast, accurate, and stupid. Man is unbelievably slow, inaccurate, and brilliant. The marriage of the two is a force beyond calculation.

Leo Chernie

Preface

This volume contains the proceedings of the 6th International Conference on Man-Machine Interactions, ICMMI 2019, which was held in Kraków, Poland, 2–3 October 2019. Since 2009, the biennial ICMMI Conference has been organized jointly by the Institute of Informatics at the Silesian University of Technology and the Institute of Theoretical and Applied Informatics of the Polish Academy of Sciences in Gliwice, Poland. The first ICMMI Conference was dedicated to the memory of Adam Mrózek, a distinguished scientist in the area of decision support systems in industrial applications. This year, we are celebrating the tenth anniversary of ICMMI with the sixth conference of the series, which has become a regular event in the calendar of scientific meetings worldwide.

The ICMMI Conference constitutes an international forum bringing together academic and industrial researchers interested in all aspects of theory and practice of man–machine interactions. Over the last ten years, thousands of scientists from all over the world have attended to discuss their latest research, exchange ideas, and learn about new developments in the field. Nowadays, intelligent machines appear to influence nearly every aspect of modern society by improving efficiencies and augmenting our human capabilities. The topic of human–computer interactions has thus become more important and more complex than ever.

Human–computer interaction is a multidisciplinary field of study focusing on the design of computer technology and, in particular, the interaction between humans (the users) and computers. For the last decades, this field expanded from its initial focus on individual and generic user behaviour to the widest possible spectrum of human experiences and activities. In summary, research in this field covers various technological aspects related to understanding and improving the ways in which people communicate with machines.

The ICMMI 2019 Conference attracted authors from 11 different countries across the world who submitted contributed papers presenting a broad range of topics related to man–machine interactions. The review process was carried out by a multidisciplinary team of 84 members of the Programme Committee with the help of the external reviewers. Each paper was subjected to at least two independent reviews. After the peer-review process, 24 high-quality papers were selected for

publication in the ICMMI 2019 proceedings. These papers were divided into the sections ‘human–computer interfaces’, ‘artificial intelligence and knowledge discovery’, ‘pattern recognition’, ‘bio-data and bio-signal analysis’, and ‘algorithms, optimization, and signal processing’. We here express our deepest gratitude to all members of the Programme Committee and the associate reviewers for their time, effort, and invaluable contribution to the success of the conference, ensuring that the excellence of the scientific programme is maintained.

Special thanks to our distinguished keynote speakers who enriched the conference with their inspiring talks presenting the latest advances and developments in the field of man–machine interactions.

We would also like to thank the editor of the series, Janusz Kacprzyk, as well as Thomas Ditzinger and other Springer staff who supported the publication of these proceedings in the AISC series. We further acknowledge all those who contributed to the organization of the conference. We are particularly grateful to the members of the Organizing Committee for their dedication, support, and the time that they devoted to making this event a success.

Finally, we thank all the paper authors for submitting their high-quality work, and we wish to express our appreciation of conference participants for their valuable contribution to the fruitful and inspiring discussions during the conference sessions. We are delighted that participants took full advantage of the opportunity to interact, network, and connect with members of the community. We hope that this proceedings volume captures the spirit and key information of the conference and will thus be useful for researchers working in the field of man–machine interactions, accelerating new scientific achievements and discoveries driving forward further advances in our field.

October 2019

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