

Preface

This volume contains the papers selected for presentation at the 23rd International Symposium on Methodologies for Intelligent Systems (ISMIS 2017), which was held at Warsaw University of Technology, Warsaw, Poland, June 26–29, 2017. The symposium was organized by the Institute of Computer Science at Warsaw University of Technology, in cooperation with University of Warsaw, Poland, and University of Bari Aldo Moro, Italy.

ISMIS is a conference series that started in 1986. Held twice every three years, ISMIS provides an international forum for exchanging scientific, research, and technological achievements in building intelligent systems. In particular, major areas selected for ISMIS 2017 include both theoretical and practical aspects of machine learning, data mining methods, deep learning, bioinformatics and health informatics, intelligent information systems, knowledge-based systems, mining temporal, spatial and spatio-temporal data, text and Web mining. In addition, four special sessions were organized: namely, Special Session on Big Data Analytics and Stream Data Mining, Special Session on Granular and Soft Clustering for Data Science, Special Session on Knowledge Discovery with Formal Concept Analysis and Related Formalisms, and Special Session devoted to ISMIS 2017 Data Mining Competition on Trading Based on Recommendations, which was launched as a part of the conference. The ISMIS conference was accompanied by the Industrial Session on Data Science in Industry: Algorithms, Tools, and Applications.

ISMIS 2017 received 118 submissions that were carefully reviewed by three or more Program Committee members or external reviewers. Papers submitted to special sessions were subject to the same reviewing procedure as those submitted to regular sessions. After a rigorous reviewing process, 56 regular papers and 15 short papers were accepted for presentation at the conference and publication in the ISMIS 2017 proceedings volume. This volume also contains one invited paper and three abstracts by the plenary keynote speakers.

It is truly a pleasure to thank all people who helped this volume come into being and made ISMIS 2017 a successful and exciting event. In particular, we would like to express our appreciation for the work of the ISMIS 2017 Program Committee members and external reviewers who helped assure the high standard of accepted papers. We would like to thank all authors of ISMIS 2017, without whose high-quality contributions it would not have been possible to organize the conference. We are grateful to the organizers of special sessions of ISMIS 2017: Martin Atzmueller and Jerzy Stefanowski (Special Session on Big Data Analytics and Stream Data Mining), Pawan Lingras, Georg Peters, and Richard Weber (Special Session on Granular and Soft Clustering for Data Science), Davide Ciucci, Sergei Kuznetsov, and Amedeo Napoli (Special Session on Knowledge Discovery with Formal Concept Analysis and Related Formalisms), Andrzej Janusz and Kamil Żbikowski (Special Session devoted to ISMIS 2017 Data Mining Competition on Trading Based on Recommendations). We would

also like to express our appreciation to the organizers of the accompanying events: Andrzej Janusz and Kamil Żbikowski, who successfully launched the competition; Robert Bembenik, Grzegorz Protaziuk, and Łukasz Skonieczny for organizing the Industrial Session and for their involvement in all organizational matters related to ISMIS 2017 as well as the creation and maintenance of the conference website. We are grateful to Bożenna Skalska, Joanna Konczak, and Anna Filipowska-Chlebek for their administrative work.

We also wish to express our thanks to Perfecto Herrera Boyer, Paola Mello, Marek Rusinkiewicz, and Osmar R. Zaiane for accepting our invitation to give plenary talks at ISMIS 2017. We would like to thank mBank S.A. for sponsoring the ISMIS 2017 Data Mining Competition, and Tipranks for providing data for this competition. Also, we are thankful to Alfred Hofmann of Springer for supporting the ISMIS 2017 Best Paper Award.

Moreover, our thanks are due to Alfred Hofmann for his continuous support and to Anna Kramer for her work on the proceedings.

We believe that the proceedings of ISMIS 2017 will become a valuable source of reference for your ongoing and future research activities.

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