

Preface

This volume contains the papers selected for presentation at the 24th International Symposium on Methodologies for Intelligent Systems (ISMIS 2018), which was held in Limassol, Cyprus, October 29–31, 2018. The symposium was organized by the Department of Computer Science at the University of Cyprus. ISMIS is a conference series that started in 1986. Held twice every three years, it provides an international forum for exchanging scientific, research, and technological achievements in building intelligent systems. In particular, major areas selected for ISMIS 2018 include bioinformatics and health informatics, graph mining, image analysis, intelligent systems, mining complex patterns, novelty detection and class imbalance, social data analysis, spatio-temporal analysis, topic modeling and opinion mining. This year, three special sessions were organized: namely, Special Session on Intelligent Methodologies for Traffic Data Analysis and Mining, Special Session on Advanced Methods in Machine Learning for Modeling Complex Data, and Special Session on Granular and Soft Clustering for Data Science. Moreover, this year, the ISMIS conference was co-located with the 21st International Conference on Discovery Science (DS 2018).

We received 59 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, 32 regular papers, eight short papers, and four application papers were accepted for presentation at the conference and publication in the ISMIS 2018 proceedings volume.

It is truly a pleasure to thank all the people who helped this volume come into being and made ISMIS 2018 a successful and exciting event. In particular, we would like to express our appreciation for the work of the ISMIS 2018 Program Committee members and external reviewers who helped assure the high standard of accepted papers. We would like to thank all authors of ISMIS 2018, 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 2018: Pawan Lingras, Georg Peters, Richard Weber, and Hong Yu (Special Session on Granular and Soft Clustering for Data Science), Fabio Liuzzi and Fulvio Rotella (Special Session on Intelligent Methodologies for Traffic Data Analysis and Mining), Yang Liu, Jiming Liu, and Keith C. C. Chan (Special Session on Advanced Methods in Machine Learning for Modeling Complex Data). We also thank the DS program chairs, Larisa Soldatova and Joaquin Vanschoren, for ensuring the smooth coordination with DS and myriad other organizational aspects.

Invited talks were shared between the two meetings (ISMIS and DS). The invited talks for ISMIS 2018 were “Mining Big and Complex Data” by Sašo Džeroski from Jozef Stefan Institute, Slovenia; “Artificial Intelligence and the Industrial Knowledge Graph” by Michael May from Siemens, Germany, and “Bridging the Gap Between Data Diversity and Data Dependencies” by Jean-Marc Petit from INSA Lyon and

Université de Lyon, France. The DS invited talks were “Automating Predictive Modeling and Knowledge Discovery” by Ioannis Tsamardinos from the University of Crete, Greece, and “Emojis, Sentiment, and Stance in Social Media” by Petra Kralj Novak from Jozef Stefan Institute, Slovenia. Abstracts of all five invited talks are included in these proceedings. We wish to express our thanks to all the invited speakers for accepting our invitation to give plenary talks.

We are thankful to Alfred Hofmann of Springer for supporting the ISMIS 2018 Best Paper and Best Student Paper awards and for his continuous support. We also thank Anna Kramer from Springer for her work on the proceedings.

We believe that the proceedings of ISMIS 2018 will become a valuable source of reference for your ongoing and future research activities.

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Michelangelo Ceci
Nathalie Japkowicz
Jiming Liu
George A. Papadopoulos
Zbigniew W. Raś