

Preface

It is a great pleasure to introduce you all to the proceedings of the 7th International Conference on Pattern Recognition and Machine Intelligence (PReMI 2017), held at the Indian Statistical Institute (ISI), Kolkata, India, during December 5–8, 2017. The objective of the conference is to introduce to the community the most recent advancements in research in the domain of pattern recognition and machine intelligence. Our goal is to encourage academic and industrial collaboration in all related fields in machine learning involving scientists, engineers, professionals, researchers, and students from India and abroad. The conference is held biennially to make it an ideal platform for researcher all over the world to come and share their views and experiences. This was the seventh edition in this series, being held in the year marking the 125th birthday of late Prof. Prasanta Chandra Mahalanobis.

Professor Mahalanobis was the founder of the Indian Statistical Institute and the father of modern statistics in India. As researchers in pattern recognition and machine learning we are immensely indebted to him. He was instrumental in inspiring the design of the first analog computer in India in 1953. He brought to ISI the first digital computer to India in the year 1955. As a mark of our respect to this monumental personality, we organized a Special Session on “Celebration of 125th Birth Anniversary of Professor P.C. Mahalanobis” at PReMI 2017.

The conference comprised several keynote and invited lecturers delivered by eminent and distinguished researchers from around the world. Both the invited and the technical sessions featured interesting lectures in classic and contemporary aspects of machina intelligence. The topics range from deep learning and Internet of Things (IoT) to computer vision and big data analytics. There were two exclusive sessions on “Deep Learning” and “Spatial Data Science and Engineering” Like previous editions, PReMI 2017 had a very good response in terms of paper submissions. Altogether there were 293 submissions from about 15 countries spanning three continents. Each paper was critically reviewed by experts in the field, after which 85 papers (29% acceptance rate) were accepted for inclusion in these proceedings. The accepted papers are divided into ten groups, although there could be some overlap. Articles written by the keynote and invited speakers are also included in the proceedings (mostly abstracts).

We wish to express our appreciation to the Program Committee and Technical Review Committee members, who worked hard to ensure the quality of the contributions of this volume. We are thankful to the editors of the journals *Fundamenta Informaticae* and *Applied Soft Computing* for kindly agreeing to publish the extended versions of some of the selected papers in their esteemed journals. We also take this opportunity to thank Professors Vineet Bafna, Andrzej Skowron, Farzin Deravi, Upinder S. Bhalla, Uday B. Desai, Soumen Chakraborti, Ambarish Ghosh, Partha Pratim Majumder, Probal Chaudhuri, Subhasis Chaudhuri, David Zhang, and Shalabh Bhatnagar for accepting our invitation to deliver keynote, invited, and special lectures during the conference. We gratefully acknowledge Alfred Hofmann of Springer for his

co-operation in the publication of the PReMI 2017 proceedings in the LNCS series, as done for the previous editions. We would like to thank all the organizations who either endorsed or sponsored this conference technically or financially. We are grateful to EasyChair for providing us with a wonderful platform for conducting the entire process of paper review. Last but not the least, we take this opportunity to thank all the contributors for their enthusiastic response, without which no conference can ever be successful.

While preparing the proceedings we mourned the sad demise of Professor Lotfi A. Zadeh, the founder of fuzzy mathematics, an imperative part of contemporary machine learning. He was on the advisory board of PReMI ever since its inception in 2005, including the present edition. Our institute honored him with a doctor honoris causa in 2006 during its annual convocation. We express our deep condolences to his family and all his friends and colleagues. It is a great loss to the pattern recognition and soft computing/computational intelligence community.

Our best wishes to all the participants of PReMI 2017 conference. May this volume, which contains the papers presented at PReMI 2017 prove to be a valuable source of reference for ongoing and future research work.

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