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Preface

This book and its sister volume collect the refereed papers presented at the 10th International Symposium on Neural Networks (ISNN 2013), held in Dalian, China, during July 4–6, 2013. Building on the success of the previous events, ISNN has become a well-established series of popular and high-quality conferences on neural network and its applications. The field of neural networks has evolved rapidly in recent years. It has become a fusion of a number of research areas in engineering, computer science, mathematics, artificial intelligence, operations research, systems theory, biology, and neuroscience. Neural networks have been widely applied for control, optimization, pattern recognition, signal/image processing, etc. ISNN aims at providing a high-level international forum for scientists, engineers, educators, as well as students to gather so as to present and discuss the latest progresses in neural network research and applications in diverse areas.

ISNN 2013 received a few hundred submissions from more than 22 countries and regions. Based on the rigorous peer reviews by the Program Committee members and the reviewers, 157 papers were selected for publications in the LNCS proceedings. These papers cover major topics of theoretical research, empirical study, and applications of neural networks.

In addition to the contributed papers, three distinguished scholars (Cesare Alippi, Polytechnic University of Milan, Italy; Derong Liu, Institute of Automation, Chinese Academy of Sciences, China; James Lo, University of Maryland - Baltimore County, USA) were invited to give plenary speeches, providing us with the recent hot topics, latest developments, and novel applications of neural networks. Furthermore, ISNN 2013 also featured two special sessions focusing on emerging topics in neural network research.

ISNN 2013 was sponsored by Dalian University of Technology and The Chinese University of Hong Kong, financially co-sponsored by the National Natural Science Foundation of China, and technically co-sponsored by the IEEE Computational Intelligence Society, IEEE Harbin Section, Asia Pacific Neural Network Assembly, European Neural Network Society, and International Neural Network Society.

We would like to express our sincere gratitude to all the Program Committee members and the reviewers of ISNN 2013 for their professional review of the papers and their expertise that guaranteed the high quality of the technical program! We would also like to thank the publisher, Springer, for their cooperation in publishing the proceedings in the prestigious series of *Lecture Notes in Computer Science*. Moreover, we would like to express our heartfelt appreciation to the plenary and panel speakers for their vision and discussion of the latest research developments in the field as well as critical future research directions,

opportunities, and challenges. Finally, we would like to thank all the speakers, authors, and participants for their great contribution and support that made ISSN 2013 a huge success.

July 2013

Chengan Guo
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ISNN 2013 Organization

ISNN 2013 was organized and sponsored by Dalian University of Technology and The Chinese University of Hong Kong, financially co-sponsored by the National Natural Science Foundation of China, and technically co-sponsored by the IEEE Computational Intelligence Society, IEEE Harbin Section, Asia Pacific Neural Network Assembly, European Neural Network Society, and International Neural Network Society.

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