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Preface

This book and its companion volumes, LNCS vols. 5551, 5552 and 5553, constitute the proceedings of the 6th International Symposium on Neural Networks (ISNN 2009), held during May 26–29, 2009 in Wuhan, China. Over the past few years, ISNN has matured into a well-established premier international symposium on neural networks and related fields, with a successful sequence of ISNN symposia held in Dalian (2004), Chongqing (2005), Chengdu (2006), Nanjing (2007), and Beijing (2008). Following the tradition of the ISNN series, ISNN 2009 provided a high-level international forum for scientists, engineers, and educators to present state-of-the-art research in neural networks and related fields, and also to discuss with international colleagues on the major opportunities and challenges for future neural network research.

Over the past decades, the neural network community has witnessed tremendous efforts and developments in all aspects of neural network research, including theoretical foundations, architectures and network organizations, modeling and simulation, empirical study, as well as a wide range of applications across different domains. The recent developments of science and technology, including neuroscience, computer science, cognitive science, nano-technologies and engineering design, among others, have provided significant new understandings and technological solutions to move the neural network research toward the development of complex, large-scale, and networked brain-like intelligent systems. This long-term goal can only be achieved with the continuous efforts of the community to seriously investigate different issues of the neural networks and related fields. To this end, ISNN 2009 provided a great platform for the community to share their latest research results, discuss critical future research directions, stimulate innovative research ideas, as well as facilitate international multidisciplinary collaborations.

ISNN 2009 received 1235 submissions from about 2459 authors in 29 countries and regions (Australia, Brazil, Canada, China, Democratic People's Republic of Korea, Finland, Germany, Hong Kong, Hungary, India, Islamic Republic of Iran, Japan, Jordan, Macao, Malaysia, Mexico, Norway, Qatar, Republic of Korea, Singapore, Spain, Taiwan, Thailand, Tunisia, UK, USA, Venezuela, Vietnam, and Yemen) across six continents (Asia, Europe, North America, South America, Africa, and Oceania). Based on the rigorous peer reviews by the Program Committee members and the reviewers, 409 high-quality papers were selected for publication in the LNCS proceedings, with an acceptance rate of 33.1%. These papers cover major topics of the theoretical research, empirical study, and applications of neural networks. In addition to the contributed papers, the ISNN 2009 technical program included five plenary speeches by Anthony Kuh (University of Hawaii at Manoa, USA), Jose C. Principe (University of Florida, USA), Leszek Rutkowski (Technical University of Czestochowa, Poland), Fei-Yue Wang (Institute of Automation, Chinese Academy of Sciences, China) and Cheng Wu (Tsinghua University, China). Furthermore, ISNN 2009 also featured five special sessions focusing on emerging topics in neural network research.

As organizers of ISNN 2009, we would like to express our sincere thanks to the Huazhong University of Science and Technology, The Chinese University of Hong Kong, and the National Natural Science Foundation of China for their sponsorship, to the IEEE Wuhan Section, the IEEE Computational Intelligence Society, the International Neural Network Society, the Asia Pacific Neural Network Assembly, and the European Neural Network Society for their technical co-sponsorship, and to the Systems Engineering Society of Hubei Province and the IEEE Hong Kong Joint Chapter on Robotics and Automation and Control Systems for their logistic support.

We would also like to sincerely thank the General Chair and General Co-chairs for their overall organization of the symposium, members of the Advisory Committee and Steering Committee for their guidance in every aspect of the entire conference, and the members of the Organizing Committee, Special Sessions Committee, Publication Committee, Publicity Committee, Finance Committee, Registration Committee, and Local Arrangements Committee for all their great effort and time in organizing such an event. We would also like to take this opportunity to express our deepest gratitude to the members of the International Program Committee and all reviewers for their professional review of the papers; their expertise guaranteed the high qualify of technical program of ISNN 2009!

Furthermore, we would also like to thank Springer for publishing the proceedings in the prestigious series of *Lecture Notes in Computer Science*. Moreover, we would like to express our heartfelt appreciations 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 ISNN 2009 a great success.

May 2009

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