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Preface

Welcome to the proceedings of BICS 2018 – the 9th International Conference on Brain-Inspired Cognitive Systems. BICS has now become a well-established conference series on brain-inspired cognitive systems around the world, with growing popularity and increasing quality. BICS 2018 followed on from BICS 2004 (Stirling, Scotland, UK), BICS 2006 (Lesvos, Greece), BICS 2008 (Sao Luis, Brazil), BICS 2010 (Madrid, Spain), BICS 2012 (Shenyang, China), BICS 2013 (Beijing, China), BICS 2015 (Hefei, China), and BICS 2016 (Beijing, China).

Geographically located at the heart of China, Xi'an is the largest city of Shaanxi Province. It once served as the capital city of ancient China for 13 dynasties spanning over 1,000 years, with a history of 5,000 years. Xi'an witnessed the most glorious history of China, and now ranks as one of the top ten tourist destinations in China with a distinctive culture. Xi'an is the starting point of the Silk Road and home to the Terracotta Army of Emperor Qin Shi Huang, the first Emperor in Chinese history.

This volume of *Lecture Notes in Artificial Intelligence* constitutes the proceedings of BICS 2018. In this context, BICS 2018 aimed to provide a high-level international forum for scientists, engineers, and educators to present the state of the art in brain-inspired cognitive systems research and applications in diverse fields. The conference featured plenary lectures given by world-renowned scholars, regular sessions with broad coverage, and some special sessions and workshops focusing on popular and timely topics.

The conference received nearly 150 submissions from more than 270 authors in over ten countries and regions across four continents. Based on a rigorous review process carried out by the Program Committee members and reviewers, 84 high-quality papers were selected for publication in the conference proceedings. These papers cover many topics of brain-inspired cognitive systems – related research including biologically inspired systems, cognitive neuroscience, models of consciousness, and neural computation.

Many organizations and volunteers made great contributions toward the success of this event. We are grateful for the great support from the School of Software and Microelectronics, Northwestern Polytechnical University and School of Computer Sciences, Guangdong Polytechnic Normal University (also Guangzhou Key Laboratory of Digital Content Processing and Security Technologies). We also thank the University of Strathclyde and the University of Stirling as well as the IEEE Brain Initiatives for co-organizing the Brain Data Bank Competition with BICS. We would also like to sincerely thank all the committee members for their great effort and time in organizing the event. Special thanks go to the Program Committee members and reviewers, whose insightful reviews and timely feedback ensured the high quality of the accepted papers and the smooth flow of the conference. We would also like to thank the publisher, Springer, for their cooperation in publishing the proceedings in the

prestigious series of *Lecture Notes in Artificial Intelligence*. Finally, we would like to thank all the speakers, authors, and participants for their support.

July 2018

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