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Intelligent Computing Theories and Application

17th International Conference, ICIC 2021 Shenzhen, China, August 12–15, 2021 Proceedings, Part I

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Preface

The International Conference on Intelligent Computing (ICIC) was started to provide an annual forum dedicated to the emerging and challenging topics in artificial intelligence, machine learning, pattern recognition, bioinformatics, and computational biology. It aims to bring together researchers and practitioners from both academia and industry to share ideas, problems, and solutions related to the multifaceted aspects of intelligent computing.

ICIC 2021, held in Shenzhen, China, during August 12–15, 2021, constituted the 17th International Conference on Intelligent Computing. It built upon the success of ICIC 2020 (Bari, Italy), ICIC 2019 (Nanchang, China), ICIC 2018 (Wuhan, China), ICIC 2017 (Liverpool, UK), ICIC 2016 (Lanzhou, China), ICIC 2015 (Fuzhou, China), ICIC 2014 (Taiyuan, China), ICIC 2013 (Nanning, China), ICIC 2012 (Huangshan, China), ICIC 2011 (Zhengzhou, China), ICIC 2010 (Changsha, China), ICIC 2009 (Ulsan, South Korea), ICIC 2008 (Shanghai, China), ICIC 2007 (Qingdao, China), ICIC 2006 (Kunming, China), and ICIC 2005 (Hefei, China).

This year, the conference concentrated mainly on the theories and methodologies as well as the emerging applications of intelligent computing. Its aim was to unify the picture of contemporary intelligent computing techniques as an integral concept that highlights the trends in advanced computational intelligence and bridges theoretical research with applications. Therefore, the theme for this conference was "Advanced Intelligent Computing Technology and Applications". Papers that focused on this theme were solicited, addressing theories, methodologies, and applications in science and technology.

ICIC 2021 received 458 submissions from authors in 21 countries and regions. All papers went through a rigorous peer-review procedure and each paper received at least three review reports. Based on the review reports, the Program Committee finally selected 192 high-quality papers for presentation at ICIC 2021, which are included in three volumes of proceedings published by Springer: two volumes of *Lecture Notes in Computer Science* (LNCS) and one volume of *Lecture Notes in Artificial Intelligence* (LNAI).

This volume of LNCS includes 71 papers.

The organizers of ICIC 2021, including Tongji University and Shenzhen University, China, made an enormous effort to ensure the success of the conference. We hereby would like to thank all the ICIC 2021 organizers, the members of the Program Committee, and the referees for their collective effort in reviewing and soliciting the papers. We would like to thank Ronan Nugent, executive editor from Springer, for his frank and helpful advice and guidance throughout as well as his continuous support in publishing the proceedings. In particular, we would like to thank all the authors for contributing their papers. Without the high-quality submissions from the authors, the success of the conference would not have been possible. Finally, we are especially

grateful to the International Neural Network Society and the National Science Foundation of China for their sponsorship.

August 2021

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