

# Preface

In the era of big data and deep learning, the IDEAL conference has been playing an important role as an established forum for active, new, or leading researchers in the world to exchange the latest results and report new findings. The IDEAL conference has continued to devotedly serve the community over the last 19 years and has witnessed the ever fast-changing world of data science and machine learning. It has become one of the leading platforms for data-driven technology and learning algorithms with an emphasis on real-world problems and turning data into information, knowledge, and solutions. The IDEAL conference attracts international experts, new researchers, leading academics, practitioners, and industrialists from the communities of machine learning, computational intelligence, novel computing paradigms, data mining, knowledge management, biology, neuroscience, bio-inspired systems and agents, distributed systems, and robotics. It continues to evolve to embrace emerging topics and exciting trends.

This year IDEAL was held in one of most beautiful cities in mainland China, Guilin. The conference received 110 submissions, which were rigorously peer-reviewed by the Program Committee members and other experts. Only the papers judged to be of highest quality were accepted and included in the proceedings. This volume contains 65 papers accepted and presented at the 18th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL 2017), held from October 30 to November 1, 2017, in Guilin, China. These papers provided a valuable and timely sample of the latest research outcomes in data engineering and automated learning, from methodologies, frameworks, and techniques to applications. They cover various topics such as evolutionary algorithms, deep learning neural networks, probabilistic modeling, particle swarm intelligence, big data analytics, and applications in image recognition, regression, classification, clustering, medical and biological modeling and prediction, text processing, and social media analysis. IDEAL 2017 also enjoyed stimulating keynotes from leaders in the field – Hojjat Adeli, Xiaoyang (Sean) Wang, and Xizhao Wang.

We would like to thank all the people who devoted so much time and effort to the successful running of the conference, in particular the members of the Program Committee and reviewers, as well as the authors who contributed to the conference. We are also very grateful for the hard work of the local organizing team at Guilin University of Electronic Technology, especially Prof. Yimin Wen, in local arrangements, as well as the help from Miss Yao Peng at the University of Manchester in

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Hujun Yin  
Yang Gao  
Songcan Chen  
Yimin Wen  
Guoyong Cai  
Tianlong Gu  
Junping Du  
Antonio J. Tallón-Ballesteros  
Minling Zhang

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