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Artificial Intelligence and Symbolic Computation

13th International Conference, AISC 2018 Suzhou, China, September 16–19, 2018 Proceedings

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Preface

This volume contains the invited and contributed papers for AISC 2018, the 13th International Conference on Artificial Intelligence and Symbolic Computation, held during September 16–19, 2018, in Suzhou, China.

For the past 26 years or so, AISC has considered artificial intelligence (AI) and symbolic computation as two significant approaches to problem solving, especially in mathematics. As AI has gained renewed interest, especially on the (non-symbolic) machine-learning front, it is particularly timely to re-emphasize how the two fields intersect with each other in a significant number of areas with respect to symbols. Thus, the AISC conference series is an important forum when it comes to ensuring that ideas, theoretical insights, methods, and results from traditional AI can be discussed and showcased while fostering new links with other areas of AI such as probabilistic reasoning and deep learning. The papers in this volume hint at these opportunities, with (a non-exhaustive list of) topics that include: traditional domains such as theorem proving, SAT solving, heuristic (numerical) problem solving and intelligent knowledge management; probabilistic modeling and reasoning for word detection in Chinese texts and proof automation; the understanding of neural models; and the analysis of crowdsourcing. As AI assumes a transformative role in society, aside from its long-standing role in promoting the synergies between the field and symbolic computation, AISC may be in a unique position with regard to the investigation of areas such as explainable AI, which many agree will require novel research in symbolic representation and reasoning. It is our hope that the community will ensure this long-running conference series can not only perdure but gain new momentum.

For this conference, original research contributions were solicited in areas encompassing AI, symbolic computation, and their interactions. Two special tracks on "Intelligent Documents" and "Collective Intelligence" were also announced. The 18 accepted papers, together with two invited ones, make up the proceedings published in this LNAI volume. Each paper received was reviewed by three members of the Program Committee with subreviewers, and the acceptance was based on the evaluation with respect to relevance and significance. The conference program featured three invited talks by Chee K. Yap, Alan Bundy, and Zhi-Hua Zhou for the main track, two invited tutorials by James H. Davenport and Ilias S. Kotsireas, and three invited talks by Xiaoyu Chen, Cezary Kaliszyk, and Guoliang Li for the special tracks.

We thank all the authors of submitted papers, the members of the Program Committee and external reviewers, the invited speakers and the organizers, and we acknowledge the support of the Suzhou Institute of Beihang University, which contributed to the success of the conference.

July 2018

Jacques Fleuriot
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