# Lecture Notes in Artificial Intelligence 9883

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Christo Dichev · Gennady Agre (Eds.)

# Artificial Intelligence: Methodology, Systems, and Applications

17th International Conference, AIMSA 2016 Varna, Bulgaria, September 7–10, 2016 Proceedings



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#### Preface

This volume contains the papers presented at the 17th International Conference on Artificial Intelligence: Methodology, Systems and Applications (AIMSA 2016). The conference was held in Varna, Bulgaria, during September 7–10, 2016 under the auspices of the Bulgarian Artificial Intelligence Association (BAIA). This long-established biannual international conference is a forum both for the presentation of research advances in artificial intelligence and for scientific interchange among researchers and practitioners in the field of artificial intelligence.

With the rapid growth of the Internet, social media, mobile devices, and low-cost sensors, the volume of data is increasing dramatically. The availability of such data sources has allowed artificial intelligence (AI) to take the next evolutionary step. AI has evolved to embrace Web-scale content and data and has demonstrated to be a fruitful research area whose results have found numerous real-life applications. The recent technological and scientific developments defining AI in a new light explain the theme of the  $17^{th}$  edition of AIMSA: "AI in the Data-Driven World."

We received 86 papers in total, and accepted 32 papers for oral and six for poster presentation. Every submitted paper went through a rigorous review process. Each paper received at least three reviews from the Program Committee. The papers included in this volume cover a wide range of topics in AI: from machine learning to natural language systems, from information extraction to text mining, from knowledge representation to soft computing, from theoretical issues to real-world applications. The conference theme is reflected in several of the accepted papers. There was also a workshop run as part of AIMSA 2016: Workshop on Deep Language Processing for Quality Machine Translation (DeepLP4QMT). The conference program featured three keynote presentations: one by Josef van Genabith, Scientific Director at DFKI, the German Research Centre for Artificial Intelligence, the second one from Benedict Du Boulay, University of Sussex, United Kingdom, and the third one by Barry O'Sullivan Director of the Insight Centre for Data Analytics in the Department of Computer Science at University College Cork.

As with all conferences, the success of AIMSA 2016 depended on its authors, reviewers, and organizers. We are very grateful to all the authors for their paper submissions, and to all the reviewers for their outstanding work in refereeing the papers within a very tight schedule. We would also like to thank the local organizers for their excellent work that made the conference run smoothly. AIMSA 2016 was organized by the Institute of Information and Communication Technologies Bulgarian Academy of Sciences, Sofia, Bulgaria, which provided generous financial and organizational support. A special thank you is extended to the providers of the EasyChair conference management system; the use of EasyChair for managing the reviewing process and for creating these proceedings eased our work tremendously.

July 2016

Christo Dichev Gennady Agre

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