Preface

This volume contains the proceedings of the 8th International Joint Conference on Automated Reasoning, IJCAR 2016, held in Coimbra (Portugal) during June 27 – July 2, 2016. IJCAR is the premier international conference covering all topics in automated reasoning, including foundations, implementations, and applications. The 2016 edition of the conference was a merger of three leading events in automated reasoning: International Conference on Automated Deduction (CADE), International Symposium on Frontiers of Combining Systems (FroCoS) and International Conference on Analytic Tableaux and Related Methods (TABLEAUX). Previous IJCAR conferences were held at Siena (Italy) in 2001, Cork (Ireland) in 2004, Seattle (USA) in 2006, Sydney (Australia) in 2008, Edinburgh (UK) in 2010, Manchester (UK) in 2012, and Vienna (Austria) in 2014.

The IJCAR 2016 program consisted of presentations of original research papers and invited talks. Original papers were divided into two categories: regular papers and system desriptions. There were 79 submissions, consisting of 65 regular papers and 14 systems descriptions. Each paper was carefully reviewed by at least three reviewers. All reviewers were either members of the Program Committee (PC) or experts in the area chosen by the PC members. After reviewing and discussing the submissions, the PC accepted 26 regular papers and nine system descriptions.

The program also included four invited talks of the highest scientific value given by Arnon Avron (Tel Aviv University), Gilles Barthe (IMDEA Madrid), Sumit Gulwani, (MSR, Redmond) and André Platzer (CMU, Pittsburgh). The abstracts of the invited talks are included in the present proceedings.

The peer-reviewed research papers are organized in the proceedings in the following sections: Satisfiability of Boolean Formulas, Satisfiability Modulo Theory, Rewriting, Arithmetic Reasoning and Mechanized Mathematics, First-Order Logic and Proof Theory, First-Order Theorem Proving, Higher-Order Theorem Proving, Modal and Temporal Logics, Non-Classical Logics, and Verification. The wide range of sections reflect the variety of topics covered in IJCAR 2016 and witness the maturity of the area of automated reasoning.

During the conference, the International Conference on Automated Deduction (CADE) Herbrand Award for Distinguished Contributions to Automated Reasoning was presented to Zohar Manna and Richard Waldinger. The Best Paper Award was conferred to Jasmin Christian Blanchette (Inria, France), Mathias Fleury (MPI, Germany), and Christoph Weidenbach (MPI, Germany) for their paper titled "A Verified SAT Solver Framework with Learn, Forget, Restart, and Incrementality." Several students received the Woody Bledsoe Travel Awards, named after the late Woody Bledsoe, and funded by CADE Inc. to support student participation.

Several people helped make IJCAR 2016 a success. We want to express our gratitude to the conference chair, Pedro Quaresma, and to the local Organizing Committee who made IJCAR 2016 possible: Sandra Marques Pinto (publicity chair), Reinhard

Kahle (workshop chair), Nuno Baeta, Carlos Caleiro, Nelma Moreira, João Rasga, and Vanda Santos. We thank all the members of the PC for their active participation in the process of evaluating and selecting papers for publication, and during the selection of the invited speakers. We also thank the external reviewers for their precious contribution. The combined expertise of the PC members and the external reviewers ensured that the papers accepted for publication were of the highest scientific quality. We whole-heartedly thank all the authors for submitting their work to IJCAR 2016. On behalf of the PC, we thank the invited speakers for their contribution. We also acknowledge the contributions of the workshop and competition organizers. We extend our thanks to Andrei Voronkov and the EasyChair development team for providing their conference management platform.

We finally thank the University of Coimbra, the hosting institution, and all sponsors for their contribution to the success of the event.

April 2016   Nicola Olivetti
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