

# Preface

This volume contains the papers presented at the 25th Jubilee Edition of the International Conference on Automated Deduction (CADE-25), held August 1–7, 2015, in Berlin, Germany. CADE is the major forum for the presentation of research in all aspects of automated deduction, including foundations, applications, implementations, and practical experience.

The Program Committee (PC) accepted 36 papers (24 full papers and 12 system descriptions) out of a total of 85 submissions. Each submission was reviewed by at least three PC members or external reviewers appointed by the PC members in charge. The program also included invited lectures given by Ulrich Furbach (University of Koblenz, Germany) and Edward Zalta (Stanford University, USA). In addition, Michael Genesereth (Stanford University, USA) gave an invited lecture in conjunction with the co-located event RuleML (9th International Web Rule Symposium).

To celebrate the 25th jubilee edition of the conference, additional invited speakers were featured at several events. A Special Session on the Past, Present, and Future of Automated Deduction included talks by Ursula Martin (University of Oxford, UK), Frank Pfenning (Carnegie Mellon University, USA), David Plaisted (University of North Carolina at Chapel Hill, USA), and Andrei Voronkov (University of Manchester, UK). Also, the conference reception and the banquet dinner featured speakers Wolfgang Bibel and Jörg Siekmann. In addition, the program was enriched by several affiliated events that took place before the main conference. These events included eight workshops, seven tutorials, three competitions, and one poster event.

During the conference, the Herbrand Award for Distinguished Contributions to Automated Reasoning was presented to Andrei Voronkov in recognition of his numerous theoretical and practical contributions to automated deduction and the development of the award-winning Vampire theorem prover. The Selection Committee for the Herbrand Award consisted of the CADE-25 Program Committee members, the trustees of CADE Inc., and the Herbrand Award winners of the last ten years.

The Best Paper Award was conferred to Vijay D'Silva (Google, Inc., USA) and Caterina Urban (École Normale Supérieure, France) for their paper entitled “Abstract Interpretation as Automated Deduction.” In addition, the first Thoralf Skolem Awards were conferred this year to reward CADE papers that have passed the test of time by being most influential papers in the field:

**CADE-20 (2005)** Nominal techniques in Isabelle/HOL by Christian Urban and Christine Tasson: The first paper showing how to use nominal techniques to deal with bound variables in higher-order theorem provers.

**CADE-14 (1997)** SATO: An Efficient Propositional Prover by Hantao Zhang: For its seminal contribution to the design and implementation of novel techniques, including lazy data structures and clever Boolean constraint propagation that caused a step change in the area and deeply influenced later systems.

**CADE-8 (1986)** Commutation, Transformation, and Termination by Leo Bachmair and Nachum Dershowitz: For laying the foundations of today's termination theorem-proving techniques.

**CADE-0-1 (1968 and 1975)** The mathematical language AUTOMATH, its usage, and some of its extensions by N.G. de Bruijn: For his landmark and remarkable contribution to the design and implementation of higher-order theorem provers.

Also, several students received Woody Bledsoe Travel Awards, thus named to remember the late Woody Bledsoe, funded by CADE Inc. to sponsor student participation.

Many people contributed to making CADE-25 a success. We are very grateful to the members of the Program Committee and the external reviewers for carefully reviewing and evaluating papers. CADE-25 would not have been possible without the dedicated work of the Organizing Committee, headed by Conference Chair Christoph Benzmüller. Many thanks also go to Workshop, Tutorial, and Competition Co-chairs Jasmin Blanchette and Andrew Reynolds, and to Publicity and Web Chair Julian Röder. On behalf of the Program Committee, we also thank all the invited speakers for their contribution to the success of this jubilee edition. We also acknowledge the important contributions of the workshop organizers, tutorial speakers, competition organizers, and poster event organizer. Thanks also go to Andrei Voronkov and the development team of the EasyChair system. Last, but not least, we thank all authors who submitted papers to CADE-25 and all participants of the conference.

CADE-25 received support from many organizations. On behalf of all organizers, we thank the German Research Foundation, DFG, for supporting the special session, and the European Coordinating Committee for Artificial Intelligence (ECCAI) for supporting the invited talk given by Ulrich Furbach. We also gratefully acknowledge support from Freie Universität Berlin, the *Artificial Intelligence Journal*, and Microsoft Research.

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