

Lecture Notes in Artificial Intelligence

6803

Edited by R. Goebel, J. Siekmann, and W. Wahlster

Subseries of Lecture Notes in Computer Science

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Automated Deduction – CADE-23

23rd International Conference on Automated Deduction
Wrocław, Poland, July 31 - August 5, 2011
Proceedings

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ISSN 0302-9743 e-ISSN 1611-3349
ISBN 978-3-642-22437-9 e-ISBN 978-3-642-22438-6
DOI 10.1007/978-3-642-22438-6
Springer Heidelberg Dordrecht London New York

Library of Congress Control Number: 2011931516

CR Subject Classification (1998): I.2.3, I.2, F.4.1, F.3, F.4, D.2.4

LNCS Sublibrary: SL 7 – Artificial Intelligence

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Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Preface

This volume contains the papers presented at the 23rd International Conference on Automated Deduction (CADE 23), held between July 31 and August 5, 2011 in Wrocław, Poland. CADE is the major forum for the presentation of research in all aspects of automated deduction.

The Program Committee decided to accept 28 regular papers and 7 system descriptions from a total of 80 submissions. Each submission was reviewed by at least three Program Committee members and external reviewers. We would like to thank all the members of the Program Committee for their careful and thoughtful deliberations. Many thanks to Andrei Voronkov for providing the EasyChair system which greatly facilitated the reviewing process, the electronic Program Committee meeting, and the preparation of the proceedings. In addition to the contributed papers, the program included four invited lectures by Koen Claessen, Byron Cook, Xavier Leroy, and Aarne Ranta. We thank the invited speakers not only for their presentations, but also for contributing abstracts, extended abstracts, or full papers to the proceedings.

In addition, on the days preceding CADE a diverse range of affiliated events took place. Six workshops:

- *BOOGIE 2011*: The First International Workshop on Intermediate Verification Languages
- *Thedu 11*: CTP Components for Educational Software
- *PSATTT11*: International Workshop on Proof Search in Axiomatic Theories and Type Theories
- *PxTP*: Workshop on Proof eXchange for Theorem Proving
- *ATE 2011*: The First Workshop on Automated Theory Engineering
- *UNIF*: The International Workshop on Unification

Six tutorials:

- First-Order Theorem Proving and Vampire
- Grammatical Framework: A Hands-On Introduction
- Model Checking Modulo Theories: Theory and Practice
- Practical Computer Formalization of Mathematics Using Mizar
- Practical Reasoning with Quantified Boolean Formulas
- Computational Logic and Human Thinking

The CADE ATP System Competition (CASC) was also held. All this helped to make the conference a success.

During the conference, the Herbrand Award for Distinguished Contributions to Automated Reasoning was presented to Nachum Dershowitz in recognition of his ground-breaking research on the design and use of well-founded orderings in term rewriting and automated deduction. The Selection Committee for

the Herbrand Award consisted of the CADE-23 Program Committee members, the trustees of CADE Inc., and the Herbrand Award winners of the last ten years. The Herbrand Award ceremony and the acceptance speech by Nachum Dershowitz were part of the conference program. In addition, the conference program also contained a lecture dedicated to the memory of William McCune.

Many people helped to make CADE 23 a success. We are very grateful to Hans de Nivelle (CADE General Chair), Katarzyna Wodzyńska and Arkadiusz Janicki (local organization) for the tremendous effort they devoted to the organization of the conference. We thank Aaron Stump (Workshop Chair), Carsten Schürmann (Publicity Chair), Geoff Sutcliffe (CASC Chair), all the individual workshop organizers, and all the tutorial speakers. Last, but not least, we thank all authors who submitted papers to CADE 23, and all participants of the conference.

CADE 23 received support from the Department of Computer Science at the University of Wrocław toward the Woody Bledsoe Awards, the University of Wrocław, and Microsoft Research.

May 2011

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