

Lecture Notes in Artificial Intelligence 4130

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Preface

This volume contains the papers presented at the Third International Joint Conference on Automated Reasoning (IJCAR 2006) held on August 17–20, 2006, in Seattle, Washington as part of the Federated Logic Conference (FLoC 2006). The IJCAR series of conferences is aimed at unifying the different research disciplines within automated reasoning. IJCAR 2006 is the fusion of several major conferences:

- **CADE**: The International Conference on Automated Deduction
- **FroCoS**: Workshop on Frontiers of Combining Systems
- **FTP**: The International Workshop on First-Order Theorem Proving
- **TABLEAUX**: The International Conference on Automated Reasoning with Analytic Tableaux and Related Methods
- **TPHOLS**: The International Conference on Theorem Proving in Higher-Order Logics

Prior versions of IJCAR were held at Cork, Ireland in 2004 and Siena, Italy in 2001.

These proceedings contain 3 contributions by invited speakers including 1 full paper and 2 short abstracts, 41 research papers, and 8 system descriptions. It also includes a short overview of the CASC-J3 competition for automated theorem proving systems that was conducted during IJCAR 2006. In addition to the plenary CAV-IJCAR-ICLP speaker David Dill, the invited speakers included Bruno Buchberger, Adnan Darwich, and Dale Miller. The contributed papers were selected from 133 research paper submissions and 18 system description submissions. Both the number and quality of these submissions were exceptionally high. Each paper was reviewed by at least three referees, and decisions were reached after over two weeks of discussion through an electronic Program Committee meeting. The submissions, reviews, and discussion were coordinated using the EasyChair conference management system. The accepted papers spanned the entire spectrum of research in automated reasoning including formalization of mathematics, proof theory, proof search, description logics, interactive proof checking, higher-order logic, combination methods, satisfiability procedures, and rewriting.

The Herbrand Award for distinguished contributions to automated reasoning was given to Wolfgang Bibel in recognition of his far-sighted vision and leadership for the field, and his seminal technical contributions. The selection committee for the Herbrand Award included previous award winners, the IJCAR 2006 Steering Committee, the CADE Inc. trustees, and the IJCAR 2006 Program Committee. The Herbrand award ceremony and the acceptance speech were part of the conference program.

The workshops at IJCAR 2006 were coordinated by the Workshop Chair Maria Paola Bonacina, and included:

- **ACL2**: The ACL2 Theorem Prover and Its Applications
- **AFM**: Automated Formal Methods with PVS, ICS, and SAL
- **CFV**: Constraints in Formal Verification
- **DISPROVING**: Non-Theorems, Non-Validity, Non-Provability

- **ESCoR**: Empirically Successful Computerized Reasoning
- **FATES/RV**: Formal Aspects of Testing and Runtime Verification
- **LFMTP**: Logical Frameworks and Meta-Languages: Theory and Practice
- **PDPAR**: Pragmatics of Decision Procedures in Automated Reasoning
- **PLPV**: Programming Languages meets Program Verification
- **STRATEGIES**: Strategies in Automated Deduction
- **UITP**: User Interfaces for Theorem Provers
- **VERIFY**: Verification Workshop

In addition to the Program Committee and the reviewers, many people contributed to the success of IJCAR 2006. The Conference Chair John Harrison managed the physical organization of the meeting. Sergey Berezin served as the Publicity Chair. Peter Baumgartner coordinated the Woody Bledsoe student travel awards. The IJCAR 2006 Steering Committee consisted of Franz Baader, Ulrich Furbach, Reiner Hähnle, Natarajan Shankar, Toby Walsh, Peter Baumgartner, John Harrison, Tobias Nipkow, Cesare Tinelli, and Andrei Voronkov. The FLoC 2006 General Chair Moshe Vardi, the Program Co-chairs Thomas Ball and Jakob Rehof, the FLoC Workshop Chair Gopal Gupta, and the IJCAR representative Reiner Hähnle also assisted with many organizational issues and questions. Special thanks go to Andrei Voronkov and his EasyChair system, which makes many tasks of a program chair much more easier.

We would like to thank all the people involved in organizing IJCAR 2006 and FLoC 2006, as well as the sponsors of FLoC 2006, Cadence, IBM, Microsoft Research, NEC, and The John von Neumann Minerva Center for the Development of Reactive Systems.

June 2006

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