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Preface

This volume contains the papers presented at the 9th International Conference on Theory and Applications of Satisfiability Testing (SAT 2006).

The International Conference on Theory and Applications of Satisfiability Testing is the primary annual meeting for researchers studying the propositional satisfiability problem (SAT). SAT 2006 was part of FLoC 2006, the fourth Federated Logic Conference, which hosted, in addition to SAT, LICS, RTA, CAV, ICLP and IJCAR. SAT 2005 was held in St. Andrews, Scotland, and SAT 2004 in Vancouver, BC, Canada. This time SAT featured the SAT Race in spirit of the SAT Competitions, the first competitive QBF Evaluation, an Evaluation of Pseudo-Boolean Solvers and the Workshop on Satisfiability Solvers and Program Verification (SSPV).

Many hard combinatorial problems can be formulated as Boolean Satisfiability (SAT) problems. In fact, given the tremendous advances in the state of the art of SAT solvers in the last decade, many real-world applications are now being encoded as SAT problems. For example, many practical verification problems can be rephrased as SAT problems. This applies to verification problems in hardware and software. SAT is therefore becoming one of the most important core technologies to verify secure and dependable systems: Improvements in the theoretical and practical aspects of SAT will consequently apply to a range of real-world problems.

The topics of the conference spanned practical and theoretical research on SAT and its applications and included but were not limited to proof systems, proof complexity, search algorithms, heuristics, analysis of algorithms, hard instances, randomized formulae, problem encodings, industrial applications, solvers, simplifiers, tools, case studies and empirical results. SAT is interpreted in a rather broad sense: besides propositional satisfiability, it includes the domain of Quantified Boolean Formulae (QBF), Constraint Programming Techniques (CP) for word-level problems and their propositional encoding and particularly Satisfiability Modulo Theories (SMT).

There were 80 submissions including 75 regular papers with a page limit of 14 pages and 15 short papers with a page limit of 6 pages. Each submission was reviewed by at least three Programme Committee members. The committee decided to accept 26 regular papers and 11 short papers. Out of the 15 papers submitted as short papers, two papers were accepted. The other nine papers accepted as short papers had been submitted as regular paper.

The program also includes invited talks by Fahiem Bacchus and Karem Sakallah, the presentations of the results of the SAT Race, and the Evaluations of QBF, Pseudo-Boolean and MAX-SAT Solvers.

We would like to thank the organizers of FLoC for coordinating the different conferences. We thank Andrei Voronkov for his excellent EasyChair system.

It helped us streamline the reviewing progress tremendously and meet our decision deadlines. Last but not least we thank the Programme Committee and the additional external reviewers for their careful and thorough work, without which it would not have been possible for us to put together such an outstanding conference programme.

We would also like to acknowledge the support of our sponsors: Cadence, IBM, Microsoft Research, NEC, John von Neumann Minerva Center for the Development of Reactive Systems, and the Intelligent Information Systems Institute at Cornell University.

August 2006 Armin Biere and Carla P. Gomes

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