Preface

This volume contains the papers presented at the 19th International Conference on Automated Deduction (CADE-19) held 28 July–2 August 2003 in Miami Beach, Florida, USA. They are divided into the following categories:

 – 4 contributions by invited speakers: one full paper and three short abstracts;
 – 29 accepted technical papers;
 – 7 descriptions of automated reasoning systems.

These proceedings also contain a short description of the automated theorem-proving system competition (CASC-19) organized by Geoff Sutcliffe and Christian Suttner.

Despite many competing smaller conferences and workshops covering different aspects of automated deduction, CADE is still the major forum for discussing new results on all aspects of automated deduction as well as presenting new systems and improvements of established systems. In contrast to the previous year, when CADE was one of the conferences participating in the Third Federated Logic Conference (FLoC 2002), and next year, when CADE will be part of the Second International Joint Conference on Automated Reasoning (IJCAR 2004), CADE-19 was organized as a stand-alone event.

CADE-19 attracted 5 workshop proposals, 2 tutorial proposals, and 83 paper submissions, 13 of which were system descriptions. The paper submissions were each reviewed by at least three expert reviewers, and an electronic PC meeting was held on the Internet. The reviews were written by the 27 PC members and 83 additional reviewers, who are listed in these proceedings. After intense discussions to resolve conflicts among the reviewers, and two voting phases, the program committee decided to accept 29 technical papers and 7 system descriptions. These papers cover a wide range of topics in automated deduction, ranging from foundational papers to descriptions of novel implementation techniques and applications in areas such as mathematics, education, knowledge representation, and program verification.

Not covered in these proceedings are several events that nevertheless made important contributions to the success of the conference, among them:

 – five workshops: *QPQ Deductive Software Components*, organized by Natarajan Shankar; *Pragmatics of Decision Procedures in Automated Reasoning*, organized by Silvio Ranise and Cesare Tinelli; *Grand Challenges for Automated Reasoning*, organized by Toby Wash; *Model Computation – Principles, Algorithms, Applications*, organized by Peter Baumgartner and Chris Fermüller; and *Novel Applications of Deduction Systems*, organized by Simon Colton, Jeremy Gow, and Volker Sorge;
 – the tutorial *SAT – Beyond Propositional Satisfiability* taught by Roberto Sebastiani;

– the presentation of the Herbrand award to Peter Andrews, in recognition of his many distinguished contributions to automated deduction and in particular for his influential contributions to type theory and its mechanization in higher-order theorem proving.

CADE-19 was hosted by the Department of Computer Science of the University of Miami, and sponsored by CoLogNET, the European Network of Excellence for Computational Logic, the Department of Computing Science of the University of Alberta, the Florida Artificial Intelligence Research Society, Lawrence Henschen (Northwestern University), Donald Loveland (Duke University), David Plaisted (University of North Carolina at Chapel Hill), and CADE, Inc. In addition to this financial support, a large number of people helped to make this conference a success. My thanks go to the conference chairs Geoff Sutcliffe and Jeff Pelletier, the publicity chair Chris Lynch, the workshop and tutorial chair Cesare Tinelli, my fellow CADE trustees, and all the people involved in the local organization of the conference.

As for the technical program, first and foremost I thank all the authors for submitting their papers to CADE-19. Second, I thank our distinguished invited speakers Tony Cohn, Edmund Clarke, Hélène Kirchner, and Greg Nelson for kindly accepting our invitation to give talks at the conference, Geoff Sutcliffe and Christian Suttner for organizing CASC-19, Roberto Sebastiani for giving a tutorial, and all the workshop organizers for deciding to make their workshops a part of CADE-19. Third, I thank the members of the PC and the additional reviewers who did a great job in writing high-quality reviews and participating in the electronic PC meeting. Their effort made it possible to select the best papers from a large number of submissions in a relatively short period of time. Finally, I would like to thank Carsten Lutz and Jan Hladik for installing and managing the electronic system (ConfMan) that allowed us to get all submissions via the Internet and to have a virtual PC meeting, and Sebastian Brandt for devising a spreadsheet to support my greedy strategy of assigning papers to PC members, which sped up the assignment process considerably. Anni-Yasmin Turhan collected the final versions of the accepted papers (some of them several times) and helped to produce the camera-ready copy of these proceedings.

May 2003   Franz Baader

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