## 9th Workshop on Practical Aspects of Automated Reasoning – and – 9th Satisfiability Checking and Symbolic Computation Workshop

PAAR 2024 +  $SC^2$  2024

#### Preface

This volume contains the papers presented at the Ninth Workshop on Practical Aspects of Automated Reasoning (PAAR-2024) and the Ninth Satisfiability Checking and Symbolic Computation Workshop ( $SC^2$  2024). The workshops were held on July 2, 2024 in association with the International Joint Conference on Automated Reasoning (IJCAR 2024) in Nancy, France.

PAAR provides a forum for developers of automated reasoning tools to discuss and compare different implementation techniques, and for users to discuss and communicate their applications and requirements. The workshop brings together different groups to concentrate on practical aspects of the implementation and application of automated reasoning tools. It allows researchers to present their work in progress, and to discuss new implementation techniques and applications. The purpose of PAAR is to help the community understand how to build useful and powerful reasoning systems in practice, and how to apply existing systems to real problems.

PAAR 2024 received eleven submissions. Each submission was reviewed by at least three program committee members. Six papers were accepted for presentation, thereof four as regular papers. The PAAR 2024 organizers would like to thank the two invited speakers André Platzer (Karlsruhe Institute of Technology) and Martina Seidl (Johannes Kepler University Linz).

The aim of the  $SC^2$  workshop is to share knowledge and experience across two communities: symbolic computation and satisfiability checking. Symbolic computation is concerned with the efficient algorithmic determination of exact solutions to complicated mathematical problems. Satisfiability Checking has recently started to tackle similar problems but with different algorithmic and technological solutions.

 $SC^2$  received five submissions in total. Each submission was reviewed by at least three program committee members. Four papers were accepted for presentation, thereof three as regular papers and one as short paper.  $SC^2$  hosted two invited speakers. Manuel Kauers from the Johannes Kepler University Linz, Austria talked about separating variables in polynomial ideals, while Lawrence Paulson from the University of Cambridge, UK discussed computer algebra and the formalisation of new mathematics.

The PAAR and  $SC^2$  workshop organisers would like to thank the authors and participants of both workshops for making two very successful events possible. Our thanks also go to the program committee members and the external reviewers for their considerable effort to provide thorough and constructive reviews. As in all years, we are indebted to the EasyChair team for the unfailing availability of the EasyChair Conference System. We are grateful to the CEUR team for publishing our proceedings.

July 2024

Cláudia Nalon, Alexander Steen, Martin Suda (PAAR 2024 Chairs) Chris Brown, Daniela Kaufmann (SC<sup>2</sup> 2024 Chairs)

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