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Preface

This volume contains the proceedings of the 19th International SPIN Workshop on Model Checking of Software, held at the University of Oxford, during 23–24 July, 2012. The SPIN workshop series is an annual forum for researchers and practitioners interested in verification of software systems. The traditional focus of SPIN has been on explicit-state model checking techniques, as implemented in SPIN and other tools. While such techniques are still of key interest to the workshop, its scope has broadened over recent years to cover techniques for verification and formal testing of software systems in general.

SPIN 2012 features three invited talks, from Tom Ball, Andrey Rybalchenko and Andreas Zeller. Tom Ball (Microsoft Research) is one of the pioneers of practical software verification, especially through his work on the SLAM project. His talk and associated invited paper (co-authored with colleagues at Microsoft Research) provide an overview of recent advances in SMT solving at Microsoft Research related to fixed points, interpolants, automata and polynomials. Andrey Rybalchenko (TU Munich) is an expert in theories, algorithms and tools for improving the quality of software. One of his major interests, and the topic of his SPIN talk, is automatic synthesis of software verification tools. Andreas Zeller (Saarland University) is well known for his work on analysis of large software systems and their development process, particularly through repository mining techniques. His talk at SPIN was on the challenge of modular verification for legacy systems, using mining to discover specifications automatically.

The workshop also featured an invited tutorial from Cristian Cadar (Imperial College London): "How to Crash Your Code Using Dynamic Symbolic Execution." Cristian is an expert on software testing and bug-finding using dynamic symbolic execution and related techniques, and is one of the authors of the widely used KLEE system. In addition to the tutorial, Cristian contributed an invited paper, "High-Coverage Symbolic Patch Testing," co-authored with Paul Marinescu.

SPIN 2012 received 30 submissions, from which the the Program Committee accepted 11 regular papers and 5 tool demonstration papers. All papers received at least three reviews, with the majority receiving at least four. Program Committee members with conflicts of interest were excluded from all discussions of relevant submissions. The reviewers discussed papers with neither overwhelmingly positive or negative reviews until a consensus was reached. In some of these cases, papers were accepted subject to a shepherding process in which the Chairs ensured that authors revised their papers to incorporate particular changes recommended by reviewers. In all such instances, the authors obliged and the papers were accepted. The editors are extremely grateful to the members of the Program Committee and their subreviewers for working under a tight deadline, and to the authors of the accepted papers for the quick turnaround in producing camera-ready copies.

We are indebted to the members of the SPIN Steering Committee, especially Gerard Holzmann and Stefan Leue, and the Chairs of SPIN 2011, Alex Groce and Madanlal Musuvathi, for their advice related to the organization of this workshop. Thanks also to Gerard Holzmann for designing this year's workshop poster. We are also very grateful to Elizabeth Walsh at the University of Oxford for invaluable assistance with local organization. The submission, review and revision processes, as well as the collation of the workshop proceedings, were all supported by the EasyChair conference management system; we are extremely grateful to the authors and maintainers of EasyChair for this free service. Finally, we offer our sincere thanks to ARM, Codeplay, Microsoft Research and Monoidics, who generously provided financial support to SPIN 2012.

July 2012

Alastair Donaldson
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