This volume contains the proceedings of the Sixth Haifa Verification Conference, held October 4–7, 2010 in Haifa, Israel. This international conference is a unique forum that provides a venue for academia, industry, and the research and development community to share their work, exchange ideas, and discuss the challenges and future directions of verification for hardware, software, and hybrid systems.

This year we received 30 submissions, out of which 10 were accepted after a thorough review conducted by the Program Committee and additional reviewers. Each paper was reviewed by at least three reviewers, sometimes more. PC members who submitted papers were not involved in any way in the review, discussion, or decision regarding their paper. The HVC Best Paper award was given to “Reaching Coverage Closure in Post-Silicon Validation,” by Allon Adir, Amir Nahir, Avi Ziv, Charles Meissner, and John Schumann. This work is in the relatively new area of post-silicon verification, which is gaining momentum and offers numerous exciting research challenges.

The research focus this year was hybrid methods and the migration of methods and ideas between hardware and software, static and dynamic analysis, pre- and post-silicon. The conference included invited talks that combined methods from different domains such as dynamic and formal hardware verification or formal analysis with software testing. In addition, we had a special session on debugging. The debugging session took examples from hardware simulation, static analysis, software, pre-silicon and post-silicon debugging, sparking dialogs between specialists from these different domains. Attendance at the conference was exceptionally high, with more than 200 participants from 10 countries (Austria, Canada, Estonia, Germany, India, Israel, Portugal, Switzerland, UK and USA).

HVC 2010 began with a full-day tutorial focusing on software testing and verification. This tutorial included presentations on transactional memory, verification of Microcode, and testing and debugging of concurrent software. The tutorial was hosted by one of our sponsors, the Caesarea Rothschild Institute (CRI) at the University of Haifa.

A special session was dedicated to the memory Amir Pnueli, a pioneer in the specification and verification of computer systems. Pnueli received the 1996 ACM Turing Award, the highest distinction that can be given to a computer scientist, for his seminal work introducing temporal logic into computing science and for outstanding contributions to program and system verification. Not only was Pnueli a great scientist, he was a special person who was admired by all and had many followers. David Harel delivered personal remarks and gave a presentation. The session included three additional tutorial-style overviews in areas where Pnueli was influential.
The HVC award is given to the most influential work in the last five years in the scope of HVC itself. The award was chosen by an independent committee with experts from all fields of verification. The HVC 2010 Award Committee decided to give the award this year to those who played a pivotal and continuous role in building and promoting the Satisfiability Modulo Theories (SMT) community. The committee recognizes the fact that the development (advancement, improvement) of the SMT community, as with any other community, is a joint effort involving many people, but nevertheless decided to limit the award to no more than five people. Accordingly they selected (alphabetically) Clark Barrett, Leonardo De Moura, Silvio Ranise, Aaron Stump, and Cesare Tinelli, for their major role in developing the SMT-LIB standard, the SMT-LIB repository, the SMT-COMP competition, SMT-EXEC, the Web-based server farm for developers of SMT solvers, and more generally for their part in bringing SMT to the place it is in today in industry and in academia.

On the logistical side, we would like to thank Vered Aharon and the IBM communication team for the excellent organization and for their help during the conference. We would like to thank the Organizing Committee, the HVC Award Committee, the Program Committee, and the authors of all submitted papers for their contribution to the high quality of this year’s event. Thank you to the invited speakers in the tutorials and special session speakers for their presentations: Valeria Bertacco, Helmut Veith, Eran Yahav, Yossi Gil, David Harel, Orna Grumberg, Lenore Tuck, Roderick Bloem, Yoav Holander, Alan Hu, João Lourenço, Eli Singerman, Shmuel Ur, and Cesare Tinelli. We would like to thank our generous sponsors, IBM, Cadence Israel, and CRI, for all their help.

November 2010

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