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Armin Biere Amir Nahir Tanja Vos (Eds.)

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8th International
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Revised Selected Papers

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Volume Editors

Armin Biere
Johannes Kepler University, 4040 Linz, Austria
E-mail: biere@jku.at

Amir Nahir
IBM Research Laboratory, 31905 Haifa, Israel
E-mail: nahir@il.ibm.com

Tanja Vos
Universidad Politecnica de Valencia, 46022 Valencia, Spain
E-mail: tvos@dsic.upv.es

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Preface

This volume contains the proceedings of the Haifa Verification Conference (HVC 2012). The conference was hosted by IBM Research Haifa and took place during November 6–8, in 2012. It was the eighth event in this series of annual conferences dedicated to advancing the state of the art and state of practice in verification and testing.

The conference provided a forum for researchers and practitioners from academia and industry to share their work, exchange ideas, and discuss the future directions of testing and verification for hardware, software, and complex hybrid systems. In 2012, HVC extended the traditional focus on hardware and software verification to include verification, validation, and testing (VVT) of complex hybrid systems as a part of the systems-engineering paradigm.

The Intel DTS Symposium and a meeting of the COST Action IC0901 Rich-Model Toolkit were co-located events. The conference itself started with a tutorial day including "Idiom-Based Verification of Highly Concurrent Data Structures Using Temporal Separation Logic" by Noam Rinetzky, "Three-Valued Abstraction-Refinement" by Sharon Shoham Buchbinder, "Simulating Cyber-Physical Systems Using SysML and Numerical Simulation Tools" by Eldad Palachi, and on "Improving Verification Productivity with the Dynamic Load and Reseed Methodology" by Marat Teplitsky.

The Program Committee accepted 18 regular papers out of 36 submissions, whose post-conference versions are published in this volume. The conference chairs further selected three poster presentations out of four poster submissions submitted after the notification for regular papers.

The conference featured a keynote with the title "On Behavioral Programming" by David Harel and another keynote talk on "Verifying Real-Time Software Is Not Reasonable (Today)" by Edward Lee. There were two invited talks on "Reducing Costs While Increasing Quality" by Orna Raz and on "SMT in Verification, Modeling, and Testing at Microsoft" by Nikolaj Bjorner. The last day contained a session on security verification with talks on "A Vulnerability or a Bug? What's the Difference Anyway? Security Software Verification as Part of the Development Lifecycle" by Ofer Maor, another talk on "Formal Analysis of Security Data Paths in RTL Design" by Jamil Mazzawi, and a third presentation on "Simultaneous Information Flow Security and Circuit Redundancy in Boolean Gates" by Ryan Kastner.

The HVC Award, granted since 2007, recognizes the most promising academic and industrial contribution to the fields of testing and software and hardware verification from the last five years. The HVC 2012 Award Committee, chaired by Daniel Kroening, decided to give the 2012 award to Aaron R. Bradley of CU Boulder for the invention of the IC3 algorithm. Aaron Bradley gave the award talk on the last day of the conference.

The Best Paper was selected by the Conference Chairs and awarded to Vasco Pessanha, Ricardo Dias, and João Lourenço for their paper with entitled "Precise Detection of Atomicity Violations."

The Conference Chairs would like to thank the members of the Program Committee for their hard work reading the papers and writing reviews under a very tight schedule during essentially one month in July and August 2012.

We are very grateful to IBM Research – Haifa for hosting and sponsoring HVC 2012.

April 2013

Armin Biere
Amir Nahir
Tanja Vos

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