

Contents

Part I Historic Account

ProCoS: How It All Began – as Seen from Denmark	3
Dines Bjørner	

Part II Hybrid Systems

Constraint-Solving Techniques for the Analysis of Stochastic Hybrid Systems	9
Martin Fränzle, Yang Gao and Sebastian Gerwinn	

MARS: A Toolchain for Modelling, Analysis and Verification of Hybrid Systems	39
Mingshuai Chen, Xiao Han, Tao Tang, Shuling Wang, Mengfei Yang, Najjun Zhan, Hengjun Zhao and Liang Zou	

Part III Correctness of Concurrent Algorithms

A Proof Method for Linearizability on TSO Architectures	61
John Derrick, Graeme Smith, Lindsay Groves and Brijesh Dongol	

Part IV Interfaces and Linking

Linking Discrete and Continuous Models, Applied to Traffic Manoeuvres	95
Ernst-Rüdiger Olderog, Anders P. Ravn and Rafael Wisniewski	

Towards Interface-Driven Design of Evolving Component-Based Architectures	121
Xin Chen and Zhiming Liu	

Part V Automatic Verification

Computing Verified Machine Address Bounds During Symbolic Exploration of Code 151
J Strother Moore

Engineering a Formal, Executable x86 ISA Simulator for Software Verification 173
Shilpi Goel, Warren A. Hunt Jr. and Matt Kaufmann

Advances in Connection-Based Automated Theorem Proving..... 211
Jens Otten and Wolfgang Bibel

Part VI Run-Time Assertion Checking

Run-Time Deadlock Detection 245
Frank S. de Boer and Stijn de Gouw

In-Circuit Assertions and Exceptions for Reconfigurable Hardware Design 265
Tim Todman and Wayne Luk

Part VII Formal and Semi-formal Methods

From ProCoS to Space and Mental Models—A Survey of Combining Formal and Semi-formal Methods 285
Bettina Buth

Part VIII Web-Supported Communities in Science

Provably Correct Systems: Community, Connections, and Citations..... 313
Jonathan P. Bowen

Erratum to: ProCoS: How It All Began – as Seen from Denmark E1
Dines Bjørner



<http://www.springer.com/978-3-319-48627-7>

Provably Correct Systems

Hinchey, M.; Bowen, J.P.; Olderog, E.-R. (Eds.)

2017, XV, 328 p. 84 illus., 48 illus. in color., Hardcover

ISBN: 978-3-319-48627-7