

Table of Contents

Invited Papers

Verification of Computer Switching Networks: An Overview	1
<i>Shuyuan Zhang, Sharad Malik, and Rick McGeer</i>	
Dynamic Bayesian Networks: A Factored Model of Probabilistic Dynamics	17
<i>Sucheendra K. Palaniappan and P.S. Thiagarajan</i>	
Interpolant Automata	26
<i>Andreas Podelski</i>	

Automata Theory

Approximating Deterministic Lattice Automata	27
<i>Shulamit Halamish and Orna Kupferman</i>	
Tight Bounds for the Determinisation and Complementation of Generalised Büchi Automata	42
<i>Sven Schewe and Thomas Varghese</i>	
A Succinct Canonical Register Automaton Model for Data Domains with Binary Relations	57
<i>Sofia Cassel, Bengt Jonsson, Falk Howar, and Bernhard Steffen</i>	
Rabinizer: Small Deterministic Automata for LTL(F,G)	72
<i>Andreas Gaiser, Jan Křetínský, and Javier Esparza</i>	

Logics and Proofs

The Unary Fragments of Metric Interval Temporal Logic: Bounded versus Lower Bound Constraints	77
<i>Paritosh K. Pandya and Simoni S. Shah</i>	
On Temporal Logic and Signal Processing	92
<i>Alexandre Donzé, Oded Maler, Ezio Bartocci, Dejan Nickovic, Radu Grosu, and Scott Smolka</i>	
Improved Single Pass Algorithms for Resolution Proof Reduction	107
<i>Ashutosh Gupta</i>	

Model Checking

Model Checking Systems and Specifications with Parameterized Atomic Propositions	122
<i>Orna Grumberg, Orna Kupferman, and Sarai Sheinvald</i>	
Reachability Analysis of Polynomial Systems Using Linear Programming Relaxations	137
<i>Mohamed Amin Ben Sassi, Romain Testylier, Thao Dang, and Antoine Girard</i>	
Linear-Time Model-Checking for Multithreaded Programs under Scope-Bounding	152
<i>Mohamed Faouzi Atig, Ahmed Bouajjani, K. Narayan Kumar, and Prakash Saivasan</i>	

Software Verification

Accurate Invariant Checking for Programs Manipulating Lists and Arrays with Infinite Data	167
<i>Ahmed Bouajjani, Cezara Drăgoi, Constantin Enea, and Mihaela Sighireanu</i>	
A Verifier for Functional Properties of Sequence-Manipulating Programs	183
<i>Carlo A. Furia</i>	
Accelerating Interpolants	187
<i>Hossein Hojjat, Radu Iosif, Filip Konečný, Viktor Kuncak, and Philipp Rümmer</i>	
FunFrog: Bounded Model Checking with Interpolation-Based Function Summarization	203
<i>Ondrej Sery, Grigory Fedyukovich, and Natasha Sharygina</i>	

Synthesis

Synthesis of Succinct Systems	208
<i>John Fearnley, Doron Peled, and Sven Schewe</i>	
Controllers with Minimal Observation Power (Application to Timed Systems)	223
<i>Peter Bulychyev, Franck Cassez, Alexandre David, Kim Guldstrand Larsen, Jean-François Raskin, and Pierre-Alain Reynier</i>	
Counterexample Guided Synthesis of Monitors for Realizability Enforcement	238
<i>Matthias Gädemann, Gwen Salaün, and Meriem Ouederni</i>	

Verification and Parallelism

Parallel Assertions for Architectures with Weak Memory Models	254
<i>Daniel Schwartz-Narbonne, Georg Weissenbacher, and Sharad Malik</i>	
Improved Multi-Core Nested Depth-First Search	269
<i>Sami Evangelista, Alfons Laarman, Laure Petrucci, and Jaco van de Pol</i>	
An Experiment on Parallel Model Checking of a CTL Fragment	284
<i>Rodrigo T. Saad, Silvano Dal Zilio, and Bernard Berthomieu</i>	

Probabilistic Verification

Variable Probabilistic Abstraction Refinement	300
<i>Luis María Ferrer Fioriti, Ernst Moritz Hahn, Holger Hermanns, and Björn Wachter</i>	
Pareto Curves for Probabilistic Model Checking	317
<i>Vojtěch Forejt, Marta Kwiatkowska, and David Parker</i>	
Verification of Partial-Information Probabilistic Systems Using Counterexample-Guided Refinements	333
<i>Sergio Giro and Markus N. Rabe</i>	
The COMICS Tool – <u>C</u> omputing <u>M</u> inimal <u>C</u> ounterexamples for DTMCs	349
<i>Nils Jansen, Erika Ábrahám, Matthias Volk, Ralf Wimmer, Joost-Pieter Katoen, and Bernd Becker</i>	

Constraint Solving and Applications

Computing Minimal Separating DFAs and Regular Invariants Using SAT and SMT Solvers	354
<i>Daniel Neider</i>	
ALLQBF Solving by Computational Learning	370
<i>Bernd Becker, Rüdiger Ehlers, Matthew Lewis, and Paolo Marin</i>	

Probabilistic Systems

Equivalence of Games with Probabilistic Uncertainty and Partial-Observation Games	385
<i>Krishnendu Chatterjee, Martin Chmela, and Rupak Majumdar</i>	

A Probabilistic Kleene Theorem	400
<i>Benedikt Bollig, Paul Gastin, Benjamin Monmege, and Marc Zeitoun</i>	
Higher-Order Approximations for Verification of Stochastic Hybrid Systems	416
<i>Sadegh Esmail Zadeh Soudjani and Alessandro Abate</i>	
Author Index	435