Contents

Static Analysis of Non-interference in Expressive Low-Level Languages . . . . . . . . 1
  Peter Aldous and Matthew Might

Static Analysis with Set-Closure in Secrecy . . . . . . . . . . . . . . . . . . . . . . . . . . 18
  Woosuk Lee, Hyunsook Hong, Kwangkeun Yi, and Jung Hee Cheon

A Binary Decision Tree Abstract Domain Functor. . . . . . . . . . . . . . . . . . . . . 36
  Junjie Chen and Patrick Cousot

Precise Data Flow Analysis in the Presence of Correlated Method Calls . . . . 54
  Marianna Rapoport, Ondřej Lhoták, and Frank Tip

May-Happen-in-Parallel Analysis for Asynchronous Programs
  with Inter-Procedural Synchronization . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 72
  Elvira Albert, Samir Genaim, and Pablo Gordillo

Shape Analysis for Unstructured Sharing . . . . . . . . . . . . . . . . . . . . . . . . . . 90
  Huisong Li, Xavier Rival, and Bor-Yuh Evan Chang

Synthesizing Heap Manipulations via Integer Linear Programming . . . . . . . . . . 109
  Anshul Garg and Subhajit Roy

Explaining the Effectiveness of Small Refinement Heuristics
  in Program Verification with CEGAR . . . . . . . . . . . . . . . . . . . . . . . . . . . . 128
  Tachio Terauchi

Safety Verification and Refutation by $k$-Invariants and $k$-Induction . . . . . . 145
  Martin Brain, Saurabh Joshi, Daniel Kroening, and Peter Schrammel

Effective Soundness-Guided Reflection Analysis . . . . . . . . . . . . . . . . . . . . . . 162
  Yue Li, Tian Tan, and Jingling Xue

SJS: A Type System for JavaScript with Fixed Object Layout . . . . . . . . . . . . . 181
  Wontae Choi, Satish Chandra, George Necula, and Koushik Sen

Refinement Type Inference via Horn Constraint Optimization . . . . . . . . . . . . 199
  Kodai Hashimoto and Hiroshi Unno

A Simple Abstracion of Arrays and Maps by Program Translation . . . . . . . . . 217
  David Monniaux and Francesco Alberti
Property-based Polynomial Invariant Generation Using Sums-of-Squares
Assalé Adjé, Pierre-Loïc Garoche, and Victor Magron 235

Modularity in Lattices: A Case Study on the Correspondence Between
Top-Down and Bottom-Up Analysis
Ghila Castelnuovo, Mayur Naik, Noam Rinetzky, Mooly Sagiv,
and Hongseok Yang 252

Parallel Cost Analysis of Distributed Systems
Elvira Albert, Jesús Correas, Einar Broch Johnsen,
and Guillermo Román-Díez 275

A Forward Analysis for Recurrent Sets
Alexey Bakhirkin, Josh Berdine, and Nir Piterman 293

Unbounded-Time Analysis of Guarded LTI Systems with Inputs
by Abstract Acceleration
Dario Cattaruzza, Alessandro Abate, Peter Schrammel,
and Daniel Kroening 312

Author Index 333
Static Analysis
Blazy, S.; Jensen, Th. (Eds.)
2015, XVI, 333 p. 90 illus., Softcover
ISBN: 978-3-662-48287-2