

Table of Contents

Static Analysis of Object-Oriented Languages

Precise Analysis of String Expressions.....	1
<i>Aske Simon Christensen, Anders Møller, and Michael I. Schwartzbach (BRICS, Department of Computer Science, University of Aarhus)</i>	
Modular Class Analysis with DATALOG.....	19
<i>Frédéric Besson and Thomas Jensen (Irisa)</i>	
Class-Level Modular Analysis for Object Oriented Languages	37
<i>Francesco Logozzo (STIX - École Polytechnique)</i>	

Static Analysis of Concurrent Languages

Checking Interference with Fractional Permissions	55
<i>John Boyland (University of Wisconsin-Milwaukee)</i>	
Message Analysis for Concurrent Languages	73
<i>Richard Carlsson, Konstantinos Sagonas, and Jesper Wilhelmsson (Computing Science Department, Uppsala University, Sweden)</i>	
Instantaneous Termination in Pure Esterel	91
<i>Olivier Tardieu and Robert de Simone (INRIA)</i>	
Stack Size Analysis for Interrupt-Driven Programs	109
<i>Krishnendu Chatterjee (University of California, Berkeley), Di Ma (Purdue University), Rupak Majumdar (University of California, Berkeley), Tian Zhao (University of Wisconsin, Milwaukee), Thomas A. Henzinger (University of California, Berkeley), and Jens Palsberg (Purdue University)</i>	

Invited Paper

Program Development Using Abstract Interpretation (And the Ciao System Preprocessor).....	127
<i>Manuel V. Hermenegildo (Technical University of Madrid and University of New Mexico), Germán Puebla, Francisco Bueno, and Pedro López-García (Technical University of Madrid)</i>	

Static Analysis of Functional Languages

- Selective Tail Call Elimination 153
Yasuhiko Minamide (University of Tsukuba and PRESTO, JST)
- Inserting Safe Memory Reuse Commands into ML-Like Programs 171
Oukseh Lee, Hongseok Yang, and Kwangkeun Yi
(Korea Advanced Institute of Science and Technology)

Static Analysis of Procedural Languages

- Weighted Pushdown Systems and Their Application to Interprocedural
 Dataflow Analysis 189
Thomas Reps (University of Wisconsin),
Stefan Schwoon (Universität Stuttgart), and
Somesh Jha (University of Wisconsin)
- Client-Driven Pointer Analysis 214
Samuel Z. Guyer and Calvin Lin (The University of Texas at
Austin)
- Abstract Interpretation of Programs as Markov Decision Processes 237
David Monniaux (CNRS/École normale supérieure)

Static Data Analysis

- A Logic for Analyzing Abstractions of Graph Transformation Systems 255
Paolo Baldan (Dipartimento di Informatica, Università Ca' Foscari
Venezia, Italy),
Barbara König (Institut für Informatik, Technische Universität
München, Germany), and
Bernhard König (Department of Mathematics, University of
California, Irvine, USA)
- Type Systems for Distributed Data Sharing 273
Ben Liblit, Alex Aiken, and Katherine Yelick (UC Berkeley)
- Z-Ranking: Using Statistical Analysis to Counter the Impact of Static
 Analysis Approximations 295
Ted Kremenek and Dawson Engler (Stanford University)
- Computer-Assisted Verification of a Protocol for Certified Email 316
Martín Abadi (University of California, Santa Cruz) and
Bruno Blanchet (École Normale Supérieure, Paris and
Max-Planck-Institut für Informatik, Saarbrücken)

Invited Talk

Craig Interpolation and Reachability Analysis	336
<i>Ken L. McMillan (Cadence Berkeley Laboratories)</i>	

Static Linear Relation Analysis

Precise Widening Operators for Convex Polyhedra	337
<i>Roberto Bagnara (Department of Mathematics, University of Parma, Italy), Patricia M. Hill (School of Computing, University of Leeds, UK), Elisa Ricci, and Enea Zaffanella (Department of Mathematics, University of Parma, Italy)</i>	
Cartesian Factoring of Polyhedra in Linear Relation Analysis	355
<i>Nicolas Halbwachs (Verimag/CNRS), David Merchat (Verimag), and Catherine Parent-Vigouroux (Verimag/UJF)</i>	

Static Analysis Based Program Transformation

Continuation-Based Partial Evaluation without Continuations	366
<i>Peter Thiemann (Universität Freiburg)</i>	
Loop Transformations for Reducing Data Space Requirements of Resource-Constrained Applications	383
<i>Priya Unnikrishnan, Guangyu Chen, Mahmut Kandemir (Penn State Univ), Mustafa Karakoy (Imperial College, London), and Ibrahim Kolcu (UMIST, UK)</i>	
Code Compaction of Matching Single-Entry Multiple-Exit Regions	401
<i>Wen-Ke Chen, Bengu Li, and Rajiv Gupta (University of Arizona)</i>	

Static Heap Analysis

Existential Heap Abstraction Entailment Is Undecidable	418
<i>Viktor Kuncak and Martin Rinard (MIT Laboratory for Computer Science)</i>	
Typestate Verification: Abstraction Techniques and Complexity Results ...	439
<i>John Field, Deepak Goyal, G. Ramalingam (IBM T.J. Watson Research Center), and Eran Yahav (Tel Aviv University)</i>	

XIV Table of Contents

Static Analysis of Accessed Regions in Recursive Data Structures 463
 Stephen Chong and Radu Rugina (Cornell University)

Establishing Local Temporal Heap Safety Properties with Applications to
Compile-Time Memory Management..... 483
 *Ran Shaham (Tel-Aviv University and IBM Haifa Research
 Laboratory),
 Eran Yahav (Tel-Aviv University),
 Elliot Kolodner (IBM Haifa Research Laboratory),, and
 Mooly Sagiv (Tel-Aviv University)*

Author Index505