

Table of Contents

Register Allocation

Combined Code Motion and Register Allocation Using the Value State Dependence Graph	1
<i>Neil Johnson, Alan Mycroft</i>	
Early Control of Register Pressure for Software Pipelined Loops	17
<i>Sid-Ahmed-Ali Touati, Christine Eisenbeis</i>	
Register Allocation by Optimal Graph Coloring	33
<i>Christian Andersson</i>	

Language Constructs and Their Implementation

A Compilation and Optimization Model for Aspect-Oriented Programs	46
<i>Hidehiko Masuhara, Gregor Kiczales, Chris Dutchyn</i>	
A Pattern Matching Compiler for Multiple Target Languages	61
<i>Pierre-Etienne Moreau, Christophe Ringeissen, Marian Vittek</i>	
A New One-Pass Transformation into Monadic Normal Form	77
<i>Olivier Danvy</i>	

Type Analysis

Run-Time Type Checking for Binary Programs	90
<i>Michael Burrows, Stephen N. Freund, Janet L. Wiener</i>	
Precision in Practice: A Type-Preserving Java Compiler	106
<i>Christopher League, Zhong Shao, Valery Trifonov</i>	
The MAGICA Type Inference Engine for MATLAB [®]	121
<i>Pramod G. Joisha, Prithviraj Banerjee</i>	

CC Invited Talk

Dimensions of Precision in Reference Analysis of Object-Oriented Programming Languages	126
<i>Barbara G. Ryder</i>	

Java

Polyglot: An Extensible Compiler Framework for Java	138
<i>Nathaniel Nystrom, Michael R. Clarkson, Andrew C. Myers</i>	

Scaling Java Points-to Analysis Using SPARK	153
<i>Ondřej Lhoták, Laurie Hendren</i>	
Effective Inline-Threaded Interpretation of Java Bytecode Using Preparation Sequences	170
<i>Etienne Gagnon, Laurie Hendren</i>	
Integrating Generations with Advanced Reference Counting Garbage Collectors	185
<i>Hezi Azatchi, Erez Petrank</i>	
Pot Pourri	
The Interprocedural Express-Lane Transformation	200
<i>David Melski, Thomas Reps</i>	
Automatic Detection of Uninitialized Variables	217
<i>Thi Viet Nga Nguyen, François Irigoien, Corinne Ancourt, Fabien Coelho</i>	
Generalised Regular Parsers	232
<i>Adrian Johnstone, Elizabeth Scott</i>	
Rapid and Robust Compiler Construction Using Template-Based Metacompilation	247
<i>C. van Reeuwijk</i>	
ETAPS Invited Talk	
The Verifying Compiler: A Grand Challenge for Computing Research	262
<i>Tony Hoare</i>	
Optimization	
Address Register Assignment for Reducing Code Size	273
<i>M. Kandemir, M.J. Irwin, G. Chen, J. Ramanujam</i>	
Offset Assignment Showdown: Evaluation of DSP Address Code Optimization Algorithms	290
<i>Rainer Leupers</i>	
Integrating High-Level Optimizations in a Production Compiler: Design and Implementation Experience	303
<i>Somnath Ghosh, Abhay Kanhere, Rakesh Krishnaiyer, Dattatraya Kulkarni, Wei Li, Chu-Cheow Lim, John Ng</i>	
Improving Data Locality by Chunking	320
<i>Cédric Bastoul, Paul Feautrier</i>	
Author Index	335