

Contents

Invited Paper 1

A Trace Model for Pointers and Objects	1
<i>C.A.R Hoare (Oxford University)</i>	
<i>J. He (United Nations University)</i>	

Mixins

Synthesizing Objects.....	18
<i>Krzysztof Czarnecki (DaimlerChrysler AG)</i>	
<i>Ulrich W. Eisenecker (University of Applied Sciences, Heidelberg)</i>	
A Core Calculus of Classes and Mixins.....	43
<i>Viviana Bono (University of Torino)</i>	
<i>Amit Patel and Vitaly Shmatikov (Stanford University)</i>	
Propagating Class and Method Combination.....	67
<i>Erik Ernst (University of Aarhus)</i>	

Debugging and Garbage Collection

A Study of the Allocation Behavior of the SPECjvm98 Java Benchmarks... ..	92
<i>Sylvia Dieckman and Urs Hölzle (University of California, Santa Barbara)</i>	
Visualizing Reference Patterns for Solving Memory Leaks in Java.....	116
<i>Wim De Pauw and Gary Sevitski (IBM T.J. Watson Research Center)</i>	
Dynamic Query-Based Debugging	135
<i>Raimondas Lencevicius, Urs Hölzle, and Ambuj K. Singh</i>	
<i>(University of California, Santa Barbara)</i>	

Type Checking

Foundations for Virtual Types.....	161
<i>Atsushi Igarashi and Benjamin C. Pierce (University of Pennsylvania)</i>	
Unifying Genericity.....	186
<i>Kresten Krab Thorup and Mads Torgersen (University of Aarhus)</i>	
An Object-Oriented Effects System.....	205
<i>Aaron Greenhouse (Carnegie Mellon University)</i>	
<i>John Boyland (University of Wisconsin-Milwaukee)</i>	

Invited Paper 2

Providing Persistent Objects in Distributed Systems	230
<i>Barbara Liskov, Miguel Castro, Liuba Shrira and Atul Adya</i>	
<i>(Massachusetts Institute of Technology)</i>	

Virtual and Multi-methods

Inlining of Virtual Methods	258
<i>David Detlefs and Ole Agesen (Sun Microsystems Laboratories)</i>	
Modular Statically Typed Multimethods	279
<i>Todd Millstein and Craig Chambers (University of Washington)</i>	
Multi-method Dispatch Using Multiple Row Displacement	304
<i>Candy Pang, Wade Holst, Yuri Leontiev and Duane Szafron</i>	
<i>(University of Alberta)</i>	

Adaptive Programming

Internal Iteration Externalized	329
<i>Thomas Kühne (Staffordshire University)</i>	
Type-Safe Delegation for Run-Time Component Adaptation	351
<i>Günter Kniesel (University of Bonn)</i>	
Towards Automatic Specialization of Java Programs	367
<i>Ulrik Pagh Schultz, Julia L. Lawall, Charles Consel and</i>	
<i>Gilles Muller (IRISA, Rennes)</i>	

Classification and Inheritance

Wide Classes	391
<i>Manuel Serrano (University of Nice Sophia-Antipolis)</i>	
An Approach to Classify Semi-structured Objects	416
<i>Elisa Bertino (University of Milan)</i>	
<i>Giovanna Guerrini and Isabella Merlo (University of Genova)</i>	
<i>Marco Mesiti (Bell Communications Research)</i>	

Invited Paper 3

- Object-Oriented Programming on the Network..... 441
Jim Waldo (Sun Microsystems, Inc.)

Distributed Objects

- Providing Fine-Grained Access Control for Java Programs 449
Raju Pandey and Brant Hashii (University of California, Davis)
- Formal Specification and Prototyping of CORBA Systems 474
*Rémi Bastide, Ousmane Sy and Philippe Palanque (University of
Toulouse)*
- A Process Algebraic Specification of the New Asynchronous CORBA
Messaging Service 495
Mauro Gaspari and Gianluigi Zavattaro (University of Bologna)

Invited Paper 4

- Object-Oriented Programming: Regaining the Excitement..... 519
*Andrew P. Black (Oregon Graduate Institute of Science &
Technology)*
- Author Index** 529