

Contents

Preface

REUSABILITY AND INHERITANCE

- A Compositional Model for Software Reuse 3
Rajendra K. Raj & Henry M. Levy
- Problems in Object-Oriented Software Reuse 25
David Taenzer, Murthy Ganti & Sunil Podar
- Disciplined Inheritance 39
Markku Sakkinen
- A Proposal for Making Eiffel Type-safe 57
William Cook

INVITED PAPER

- The Past, Present and Future of Smalltalk 73
L. Peter Deutsch

OPERATING SYSTEMS

- A Reflective Architecture for an Object-Oriented Distributed
Operating System 89
Yasuhiko Yokote, Fumio Teraoka, & Mario Tokoro

CONCURRENCY

- Actalk: A Testbed for Classifying and Designing Actor
Languages in the Smalltalk-80 Environment 109
Jean-Pierre Briot
- Inheritance in Actor Based Concurrent Object-Oriented
Languages 131
Dennis G. Kafura & Keung Hae Lee
- MELDing Multiple Granularities of Parallelism 147
*Gail E. Kaiser, Steven S. Popovich, Wenwey Hseush &
Shyhtsun Felix Wu*

PERSISTENCE

- The Treatment of Persistent Objects in Arjuna 169
G.N.Dixon, G.D.Parrington, S.K.Shrivastava & S.M.Wheater
- Persistence and Migration for C++ Objects 191
Marc Shapiro, Phillipe Gautron & Laurence Mossieri

INVITED PAPER

- Objects - A Fresh Look 207
Kenneth M. Kahn

DESIGN

- A Design Method for Object-Oriented Programming 225
Winnie W.Y. Pun & Russel L. Winder

METALEVEL PROGRAMMING

- Metalevel Programming in CLOS 243
*Giuseppe Attardi, Cinzia Bonini, Maria Rosaria Boscotrecase,
 Tito Flagella & Mauro Gaspari*
- ObjVProlog: Metaclasses in Logic 257
Jacques Malenfant, Guy Lapalme & Jean Vaucher

APPLICATIONS AND EXPERIENCE

- Four Steps and a Rest in Putting an Object-Oriented
 Programming Environment to Practical Use 271
Gerhard Müller & Anna-Kristin Präfrock
- Integration of a Programming Environment into ET++ - A Case
 Study 283
Erich Gamma, André Weinand & Rudolf Marty
- ObjView: A Task-Oriented, Graphics-Based Tool for Object
 Visualization and Arrangement 299
*Gerhard Freidrich, Wolfgang Höllinger, Christian Stary &
 Markus Stumptner*
- A Class Hierarchy for Building Stream-Oriented File Systems 311
*Peter W. Madany, Roy H. Campbell, Vincent F. Russo &
 Douglas E. Leyens*
- An Object-Oriented Notation for Attribute Grammars 329
Görel Hedin
- SEMANTICS
- First Steps Towards Fully Abstract Semantics for Object-
 Oriented Languages 347
Phillip M. Yelland
- USER INTERFACE
- A Customizable Window-Interface to Object-Oriented Databases 367
E. Laenens, F. Staes & D. Vermeir
- Architecture Models for Interactive Software 383
Joëlle Coutaz