

Contents

Keynote Speech

Beyond Objects	1
<i>Luc Steels (Vrije Universiteit Brussels)</i>	

Class Design

Should Superclasses be Abstract?	12
<i>Walter L. Hürsch (Northeastern University, Boston)</i>	
Roles and Dynamic Subclasses: A Modal Logic Approach	32
<i>Roel Wieringa, Wiebren de Jonge and Paul Spruit (Vrije Universiteit Amsterdam)</i>	
Methods as Assertions	60
<i>John Lamping (Xerox PARC, Palo Alto) and Martín Abadi (DEC, Palo Alto)</i>	

Concurrency

Abstracting Process-to-Function Relations in Concurrent Object-Oriented Applications	81
<i>Cristina Videira Lopes and Karl J. Lieberherr (Northeastern University, Boston)</i>	
Typed Concurrent Objects	100
<i>Vasco T. Vasconcelos (Keio University, Yokohama)</i>	
Atomic Object Composition	118
<i>Rachid Guerraoui (Ecole Polytechnique Fédérale de Lausanne)</i>	

Patterns

Patterns Generate Architectures	139
<i>Kent Beck (First Class Software, Inc.) and Ralph Johnson (University of Illinois)</i>	
Meta Patterns - A Means for Capturing the Essentials of Reusable Object-Oriented Design	150
<i>Wolfgang Pree (Johannes Kepler University Linz)</i>	
Modeling Object-Oriented Program Execution	163
<i>Wim De Pauw, Doug Kimelman and John Vlissides (IBM, T.J. Watson Research Center, Yorktown Heights)</i>	

Invited Talk

- Putting Objects to Work: Hypermedia as the Subject Matter and
the Medium for Computer-Supported Cooperative Work 183
Norbert A. Streitz (GMD-IPSI, Darmstadt)

Declarative Programming

- Objet-Oriented Computations in Logic Programming 194
Andrea Omicini and Antonio Natali (Università di Bologna)
- Deductive Object Databases 213
*Elisa Bertino (Università di Milano), Giovanna Guerrini
(Università di Genova) and Danilo Montesi (Universidade de Lisboa)*
- Declarative Object-Oriented Programming: Inheritance, Subtyping and
Prototyping 236
S. Alagić, R. Sunderraman and R. Bagai (Wichita State University)
- Constraints and Object Identity 260
*Gus Lopez (University of Washington), Bjørn Freeman-Benson
(Århus University) and Alan Borning (University of Washington)*

Implementation

- Protection in the Guide Object-Oriented Distributed System 280
Daniel Hagimont (Bull-IMAG/Systèmes, Gières)
- Object Location Control Using Meta-level Programming 299
*Hideaki Okamura (Keio University, Yokohama) and Yutaka Ishikawa
(Real World Computing Partnership, Tsukuba)*
- Customising Object Allocation 320
Giuseppe Attardi and Tito Flagella (Università di Pisa)

Specification

- Combining Object-Oriented Analysis and Formal Description Techniques .. 344
Ana M.D. Moreira and Robert G. Clark (University of Stirling)
- A Specification Language for Object-Oriented Analysis and Design 365
*Ted L. Briggs (Intergraph Corporation, Huntsville) and John Werth
(University of Texas at Austin)*
- Real-Time Specification Inheritance Anomalies and Real-Time Filters 386
*Mehmet Aksit, Jan Bosch (University of Twente),
William van der Sterren (Eindhoven University of Technology) and
Lodewijk Bergmans (University of Twente)*

Dispatching

- Efficient Dynamic Look-up Strategy for Multi-Methods 408
*Weimin Chen (GMD-IPSI, Darmstadt), Volker Turau
 (Fachhochschule Giessen-Friedberg) and Wolfgang Klas
 (GMD-IPSI, Darmstadt)*
- Taming Message Passing: Efficient Method Look-up for Dynamically
 Typed Languages 432
*Jan Vitek (Université de Genève) and R. Nigel Horspool
 (University of Victoria)*
- Generalizing Dispatching in a Distributed Object System 450
*Farshad Nayeri, Ben Hurwitz and Frank Manola
 (GTE Laboratories, Waltham)*

Experience

- A Geographic Environmental Modeling System: Towards
 an Object-Oriented Framework 474
Bernd Bruegge and Erik Riedel (Carnegie Mellon University)
- Adding Digital Video to an Object-Oriented User Interface Toolkit 493
*S.M.G. Freeman (Rank Xerox, Grenoble) and M.S. Manasse
 (DEC, Palo Alto)*
- Product Configurations - An Application for Prototype Object Approach.. 513
*Hannu Peltonen, Tomi Männistö, Kari Alho and Reijo Sulonen
 (Helsinki University of Technology)*

- Author Index** 535