

Preface

This volume constitutes the proceedings of the Eighth European Conference on Object-Oriented Programming, ECOOP, held in Bologna, Italy, on July 4 to 8, 1994. Previous ECOOP conferences were held in Paris (France), Oslo (Norway), Nottingham (England), Ottawa (Canada, jointly with OOPSLA), Geneva (Switzerland), Utrecht (the Netherlands), and Kaiserslautern (Germany).

The past ten years have seen object-oriented technology making a major impact on the software industry; it is not going too far to say that nowadays the notion of object orientation is revolutionizing all aspects of the software lifecycle. Success on the practical side has gone in parallel with continuous scientific growth, so that the field, far from having settled into quiescence, is still characterized by a tumultuous vitality of novel directions and developments.

The technical programme of ECOOP'94 testifies this well. We selected 25 papers from 161 which were submitted. The papers were selected based only on their quality. The selection was a very hard task, and many good papers had to be rejected because of space limitations. As a result, the selected papers cover a wide range of topics such as programming language issues, databases, analysis, design, and reuse, in the form both of research contributions and of experience reports. We would like to express our sincere thanks to the authors of submitted papers, the programme committee members, and the other reviewers of papers.

We organized two invited talks (whose papers are included in this volume) and two panels. The invited talks and panels provide further insight into the state of the art of object-oriented technology by pointing the way to future evolution and by allowing cross-fertilization of ideas with related disciplines.

Apart from the technical program, ECOOP'94 also offers tutorials, workshops, exhibition, and demonstrations. Thus, we trust researchers and practitioners of object-oriented technology will find a great many opportunities in the ECOOP'94 conference.

Finally, we would like to thank the Dipartimento di Elettronica, Informatica e Sistemistica (DEIS) of the University of Bologna, and AITO (Association Internationale pour les Technologies Objets) for their organization, ACM/SIGPLAN and AICA (Associazione Italiana per il Calcolo Automatico) for their cooperation, many sponsors for their support, and the executive committee members for their untiring devotion. Many thanks go to the participants at the conference who really make this conference enthusiastic. Lastly, we would like to thank Ichiro Satoh for his help in editing this volume.

April 1994

Mario Tokoro and Remo Pareschi
ECOOP'94 Programme Committee Co-Chairs

Organization

ECOOP'94 is organized by the Dipartimento di Elettronica, Informatica e Sistemistica (DEIS) of the Università di Bologna and AITO (Association Internationale pour les Technologies Objets) in cooperation with ACM/SIGPLAN and AICA (Associazione Italiana per il Calcolo Automatico).

Sponsoring Institutions

A.I.S. (Artificial Intelligence Software)
 CIOC C.N.R. (Centro Interazione Operatore Calcolatore)
 C.N.R.
 C.N.R. Direzione Progetto Finalizzato Sistemi Informatici e Calcolo Parallelo
 Hewlett-Packard Italia
 IBM Semea
 MESARTEAM
 SUN Italia

Executive Committee

Conference chair:	Maurelio Boari (Università di Bologna, Italy)
Programme co-chairs:	Mario Tokoro (Keio University / Sony CSL , Japan) Remo Pareschi (Rank Xerox, France)
Organizing chair:	Paola Mello (Università di Bologna, Italy)
Tutorials:	Antonio Natali (Università di Bologna, Italy)
Workshops:	Antonio Corradi (Università di Bologna, Italy) Letizia Leonardi (Università di Modena, Italy)
Panels:	Jean-Marc Andreoli (Rank Xerox, France) Satoshi Matsnoka (University of Tokyo, Japan)
Exhibition:	Giuseppe Bellavia (Università di Bologna, Italy) Roberto Zicari (Goethe-Universität, Germany)
Demonstrations:	Anna Ciampolini (Università di Bologna, Italy)

Programme Committee

Hassan Ait.-Kaci	Simon Fraser University, Canada
Mehmet Aksit	University of Twente, Netherlands
Pierre America	Philips, Netherlands
Elisa Bértino	Università di Genova, Italy
Jean Bezivin	Université de Nantes, France
Maurelio Boari	Università di Bologna, Italy
Pierre Cointe	Ecoles des Mines de Nantes, France
Jacques Ferber	LAFORIA-IBP, France
Björn Freeman-Benson	University of Victoria, Canada
Simon Gibbs	Université de Genève, Switzerland
Gerti Kappel	University of Vienna, Austria
Gregor Kiczales	Xerox PARC, USA
Ole Lehrmann Madsen	Aarhus University, Denmark
Boris Magnusson	Lund University, Sweden
Tom Maibaum	Imperial College, UK
José Meseguer	SRI International, USA
Eliot Moss	University of Massachusetts, USA
Max Mithlhauser	University of Karlsruhe, Germany
Oscar Nierstrasz	Université de Genève, Switzerland
Atsushi Ohori	Kyoto University, Japan
Walter Olthoff	DFKI, Germany
Jens Palsberg	Aarhus University, Denmark
Remo Pareschi	Rank Xerox, France
Antonio Porto	Universidade Nova de Lisboa, Portugal
Markku Sakkinen	University of Jyväskylä, Finland
Luc Steels	Vrije University Brussels, Belgium
Dave Thomas	Object Technology International, Canada
Mario Tokoro	Keio University / Sony CSL, Japan
Akinori Yonezawa	University of Tokyo, Japan
Roberto Zicari	Goethe-Universität, Germany

Referees

- | | | |
|-------------------|-------------------|--------------------|
| Achauer, B. | Hedin, G. | Pareschi, R. |
| Ait-Kaci, H. | Hitz, M. | Porto, A. |
| Aksit, M. | Honda, Y. | Prueckler, T. |
| Alferes, J. | Kappel, G. | Rausch-Schott, S. |
| America, P. | Kiczales, G. | Retschitzegger, W. |
| Andreoli, J. | Knudsen, J.L. | Richartz, M. |
| Andries, M. | Kobayashi, N. | Rivard, F. |
| Bergamaschi, S. | Koehorst, H. | Roeck, B. |
| Bergmans, L. | Lamma, E. | Sakkinen, M. |
| Bertino, E. | Lautemann, S. | Samarati, P. |
| Be/ivin, J. | Leonardi, L. | Schrefl, M. |
| Bichler, P. | Lincoln, P. | Skerrett, I. |
| Boari, M. | Liu, L. | Skublics, S. |
| Bosch, J. | Loehr-Richter, P. | Steels, L. |
| Breche, P. | Madsen, O.L. | Taivalsaari, A. |
| Budd, T. | Magnusson, B. | Takeuchi, A. |
| Caires, L. | Maibaum, T. | Thomas, D. |
| Ciancarini, P. | Marti-Oliet, N. | Tiberio, P. |
| Cointe, P. | Matsuoka, S. | Tokoro, M. |
| Corradi, A. | McFarland, C. | Tuceryan, M. |
| Dami, L. | Mello, P. | Vasconcelos, V. |
| De Paoli, F. | Meseguer, J. | Vieweg, S. |
| Dias, A.M. | Miguel Dias, A. | Vihavainen, J. |
| Eder, J. | Minör, S. | Wakita, K. |
| Engels, G. | Moss, E. | Watari, S. |
| Even, S. | Mueck, T. | Yokota, K. |
| Ferber, J. | Miihlhauser, M. | Yonezawa, A. |
| Freeman-Beson, B. | Mulet, P. | Zamperoni, A. |
| Frick, O. | Natali, A. | Zicari, R. |
| Fujinami, N. | Nierstrasz, O. | Zondag, E. |
| Gautron, P. | Ohno, Y. | des Rivières, J. |
| Gerteis, W. | Ohori, A. | van Dijk, B. |
| Gibbs, S. | Olthoff, W. | van der Linden, F. |
| Groenewegen, L. | Onodera, T. | |
| Guerrini, G. | Palsberg, J. | |