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Walter Olthoff (Ed.)

# ECOOP '95 — Object-Oriented Programming

9th European Conference  
Åarhus, Denmark, August 7-11, 1995  
Proceedings



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# Preface

For the ninth time now, the European Conference on Object-Oriented Programming provides a mid-summer gathering place for researchers, practitioners, students and newcomers in the field of object technology. Despite fierce competition from an increasing number of attractive conferences on object-related topics, ECOOP has successfully positioned itself as the premier European object technology conference. One reason is without doubt the composition of the conference week and the nature of its events. Running in parallel on the first two days, a comprehensive tutorial program and a very selective workshop program are offered to attendees. This is followed by a three-day technical program organized in a single track providing a highly communicative atmosphere of scientific exchange and learning. Overlapping with these events are a two-day industrial exhibition and a two-day opportunity for non-industrial system developers to demonstrate their software. Thus, ECOOP is not just a conference on programming but an event touching on the full spectrum of object technology.

This volume constitutes the proceedings of the Ninth European Conference on Object-Oriented Programming, ECOOP, held in Århus, Denmark, August 7-11, 1995. Previous ECOOP conferences were held in Paris (France), Oslo (Norway), Nottingham (England), Ottawa (Canada, jointly with OOPSLA), Geneva (Switzerland), Utrecht (the Netherlands), Kaiserslautern (Germany), and Bologna (Italy).

Object technology continues to increase its impact on the corporate world. Leading companies devote more and more resources to object-oriented development of new software or the gradual adaptation of legacy systems to the object perspective. This results in constant demand for excellent research results, improved development environment concepts and more sophisticated methods for analysis and design. Driven by these forces, ECOOP both benefits and suffers from the fluctuation of economic parameters.

This year, 90 papers were submitted from 19 countries around the world, with significant North American representation. The latter fact probably reflects a kind of load sharing ECOOP has established with the OOPSLA conference series. Jointly they provide a biannual forum for publication of original high-quality object technology research. The selection of papers was carried out during a two-day program committee meeting in Kaiserslautern. Papers were judged according to their originality, relevance and presentation quality, and acceptance was based purely on their own merits, independently of other submissions. The 18 selected papers are of remarkable quality, and range in topic from more theoretical areas like type theory and verification to implementation aspects of programming paradigms, including concurrency, distribution, reflection, specification and interfaces. Although the presentation of the selected papers will constitute the kernel of the technical program, the keynote address and the two invited talks will address essential experiences, visions and research overviews related to the theory and practice of object technology. A paper related to each of the invited talks is included in this volume.

ECOOP95 is the result of considerable effort on the part of a number of people. It has been a pleasure to work together with the members of the program committee and the referees, who each devoted much time in reviewing and discussing the submitted papers. The collaboration with Ole Madsen (Conference Chair) and Jørgen Knudsen (Organizing Chair) was excellent and very effective, despite the hinderances of differing time zones. Thanks must also go to those responsible for the organization of the various ECOOP events: Birger Møller-Pedersen, Eric Jul, Boris Magnusson, Kurt Nørmark, Elmer Sandvad, and to those who helped in the local organization in Åarhus and Kaiserslautern: Susanne Brøndberg, Janne Damgaard, Marianne Iversen and Cornelia Wanders. Finally, ECOOP95 has greatly benefitted from the support of sponsoring organizations whose support and cooperation are gratefully acknowledged. DFKI GmbH graciously provided me with the time and support necessary to serve as Program Chair.

Ultimately, the success of ECOOP95 will be determined by the number of attendees who leave Åarhus with the memory of time well spent. Knowing details of the prepared events I am confident that we will receive a very good rating on this scale. Enjoy the conference and this book!

April 1995

Walter Olthoff  
Program Chair  
ECOOP'95

# Organization

ECOOOP'95 is organized by the Department of Computer Science, University of Århus and AITO (Association Internationale pour les Technologies Objets) in cooperation with ACM/SIGPLAN.

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DEVISE: Centre for Experimental System Development, Univ. of Århus, DK  
Faculty of Science, University of Århus, Denmark

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