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Edited by G. Goos and J. Hartmanis

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ESOP '90

3rd European Symposium on Programming
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Proceedings

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Preface

This volume contains the Proceedings of the Third European Symposium on Programming (ESOP '90), held jointly with the Fifteenth CAAP (Conference on Trees in Algebra and Programming) May 15-18, 1990 in Copenhagen. The CAAP '90 Proceedings are published in another LNCS volume, a twin to this one.

Two previous ESOP symposia have been held, the first in Saarbrücken in 1986 and the second (also jointly with CAAP) in Nancy in 1988. They continue lines begun in France and Germany under the names *Colloque sur la Programmation* and the GI-workshops on *Programmiersprachen und Programmentwicklung*.

ESOP '90 addresses fundamental issues and important developments in the design, specification and implementation of programming languages and systems on topics including those listed below. Especially encouraged were papers that describe practical work based on theory, or computer experiments implementing theoretical concepts and formal models.

- *Program development*
  specification, methodology, tools, environments
- *Programming language concepts*
  types, data abstraction, parallelism, real-time
- *Language implementation techniques*
  compilers, interpreters, abstract machine design, optimization
- *Programs as data objects*
  abstract interpretation, program transformation, partial evaluation
- *Programming styles*
  imperative, functional, predicative, object-oriented

Seventy-five papers were submitted, of which twenty-four were selected by the program committee. The choice was made on the quality of the papers, but it turns out that they are a representative sample of the submitted ones. On the average the submitted papers were rather good and the task of the Program Committee was not always easy. In particular several papers contained new and interesting ideas, but were not worked out well enough.

The two invited lecturers are Henk Barendregt (University of Nijmegen, Holland) and Robert Paige (Courant Institute, New York). I am pleased to thank these two outstanding scholars for accepting the invitation to address the conference.

I thank the ESOP Program Committee members and referees for all the work they did in selecting the contributions; Klaus Grue for help at Copenhagen in organizing the paper selection process; André Arnold, chairman of the CAAP Program Committee; and Max Dauchet and F. Bossut for hosting the program committee meeting at Lille.

I also thank Nils Andersen, the CAAP/ESOP Local Arrangements Chairman, for efficiently and cheerfully handling the arrangements and planning needed to make such a conference a success; Torben Mogensen for designing the logo; Lars Ole Andersen for organizing the system demonstrations; and last but not least, three secretaries at Copenhagen who solved a thousand practical problems: Hjørdis Gundermann, Eileen Møller Nielsen and Lisa Wiese.

The conferences were sponsored by EATCS (the European Association for Theoretical Computer Science), who help in bringing this meeting to the attention of the worldwide community in theoretical computer science. Finally, thanks are due to the Danish Natural Science Research Council (Det Naturvidenskabelige Forskningsråd) for paying the expenses of the four invited speakers.

Neil Jones

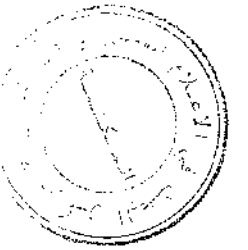
Program Committee

The program of ESOP '90 offered two invited talks which are included in this volume. The Program Committee thanks the invited lecturers:

Henk P. Barendregt (University of Nijmegen, Holland)
Robert Paige (Courant Institute, New York University, USA)

List of Referees for ESOP '90

A. Aasa
S. Abramsky
Ascander
R. Backhouse
K.-J. Backström
S. Blott
S. Bonnier
G.L. Burn
D.R. Busch
K. Clenaghan
M. Cole
T. Coquand
R.J. Cunningham
M. Dawson
P. Dybjer
P. Fritzson
D. Galmiche
I. Gnaedig-Antoine
V.D. Gouge
T. Hallgren
M. Hanus
Hermann
P. Harrison
L. Hascoet
R. Heckmann
C.J. Hogger
K.H. Holm
S. Holmström
C.K. Holst
R.J.M. Hughes
S. Hughes
S. Hunt
J. Jaray
T. Johnsson
S.B. Jones
M. Jourdan
A. Jung
M. Kamkar
P.H.J. Kelly
C. Kirchner
H. Kirchner
J. Kramer
T. Lehmann
G. Lindström
D. Lugiez
P. Lundgren
J. Löwgren
F.G. McCabe
L. Maranget
M. Mauny
Mery
H. Miki
T. Mogensen
F. Müller
A. Nilsson
C. Paulin
K. Petersson
S. Peyton-Jones
R. de Queiroz
Quere
J.L. Remy
B. Richards
F. Rouaix
J. Rouyer
S. Sagib
J.-B. Saint
H. Sander
A. Schmitt
R. Schott
H. Seidl
N. Shahmekri
K. Sieber
A. Sua'rez
S. Todd
S. Vickers
P. Viry
Q. Win



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