Antoni Olivé  Joan Antoni Pastor (Eds.)

Advanced Information Systems Engineering

9th International Conference, CAiSE’97
Barcelona, Catalonia, Spain, June 16-20, 1997
Proceedings

Springer
Series Editors
Gerhard Goos, Karlsruhe University, Germany
Juris Hartmanis, Cornell University, NY, USA
Jan van Leeuwen, Utrecht University, The Netherlands

Volume Editors
Antoni Olivé
Joan Antoni Pastor
Universitat Politècnica de Catalunya
Pau Gargallo, 5, 08028 Barcelona, Catalonia, Spain
E-mail: (olive/pastor)@lsi.upc.es

Cataloging-in-Publication data applied for

Die Deutsche Bibliothek - CIP-Einheitsaufnahme

Advanced information systems engineering: 9th international conference; proceedings / CAiSE '97, Barcelona, Catalonia, Spain, June 16 - 20, 1997. Antoni Olivé; Joan Antoni Pastor (ed.). - Berlin; Heidelberg; New York; Barcelona; Budapest; Hong Kong; London; Milan; Paris; Santa Clara; Singapore; Tokyo: Springer, 1997
(Lecture notes in computer science; Vol. 1250)
ISBN 3-540-63107-0

ISSN 0302-9743

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer-Verlag. Violations are liable for prosecution under the German Copyright Law.

© Springer-Verlag Berlin Heidelberg 1997
Printed in Germany

Typesetting: Camera-ready by author
SPIN 10549886 06/3142 - 5 4 3 2 1 0 Printed on acid-free paper
Preface

CAiSE.97 was the ninth International Conference on Advanced Information Systems Engineering. It was held in Barcelona, Catalonia, 16-20 June 1997, and continued the tradition of previous years, when CAiSE was held in Stockholm (Sweden), Trondheim (Norway), Manchester (England), Paris (France), Utrecht (The Netherlands), Jyväskylä (Finland), and Crete (Greece).

The CAiSE conferences are a platform for researchers and practitioners, from academia and industry, to discuss and exchange new developments in concepts, methods, techniques, and tools, to improve the way we manage, design, and implement advanced information systems.

The international programme committee, with representatives from 20 countries, received 112 papers. There were 3 reviews for each paper, and 30 papers of high academic quality were selected to be presented and discussed at the conference. The selected papers cover a wide spectrum of topics, including requirements engineering, conceptual modelling, information systems design, methods, environments and tools, and workflow systems.

CAiSE.97 comprised a two-day programme of workshops, before the conference itself. Workshops were organised on topics including requirements engineering, federated database systems, end-user development, and evaluation of modelling methods in systems analysis and design. Also included among the workshops was a doctoral consortium for Ph.D. students in the area of information systems engineering. The conference programme included sessions presenting the papers in these proceedings, two invited speakers, two panels, five tutorials, and poster sessions.

We wish to express our gratitude to all those individuals and institutions who have made this conference and the proceedings possible: to the authors of papers, tutorials, and posters for their contributions; to the members of the programme committee and the additional referees for carefully reviewing the papers; to keynote speakers and panel chairs for accepting our invitation and for their efforts; to the publisher for the pleasant co-operation; to the members of the organising committee for their enthusiastic efforts in the local arrangements; to the participants without whom there would not be the conference; and to the sponsors for their involvement and support.

Antoni Olivé
March 1997
Joan Antoni Pastor
Programme Chair
Antoni Olivé
Universitat Politècnica de Catalunya

Organising Chair
Joan Antoni Pastor
Universitat Politècnica de Catalunya

Programme Committee

R. Andreu, IESE
A. Borgida, Rutgers University
S. Brinkkemper, University of Twente
J. Bubenko, Stockholm University
C. Cauvet, Université de Paris I
S. Ceri, Politecnico di Milano
R. Cicchetti, Université de la Mediterranée
P. Constantopoulos, University of Crete
P. Creasy, University of Queensland
O. Diaz, Universidad del Pais Vasco
D.W. Embley, Brigham Young Univ.
H.D. Ehrich, Tech. Univ. Braunschweig
A. Finkelstein, City University
B. Freitag, Universität Passau
H.-M. Haav, Institute of Cybernetics
J. Hagelstein, S.W.I.F.T. s.c.
J. Iivari, University of Oulu
M. Jarke, RWTH
K.G. Jeffery, Rutherford Appleton Lab.
Y. Kambayashi, Kyoto University
H. Kangassalo, University of Tampere
M. Leonard, Université de Genève
E. Lindecrona, SISU
P. Loucopoulos, UMIST
K. Lyytinen, University of Jyväskylä

J. Mylopoulos, University of Toronto
J. Odell, James Odell Associates
A. L. Opdahl, University of Bergen
C. Parent, EPFL
B. Pernici, Politecnico di Milano
N. Prakash, Delhi Institute of Technology
I. Ramos, Univ. Politécnica de Valencia
C. Rolland, Université de Paris I
M.R. Sancho, Univ. Polit. de Catalunya
T. Sellis, National Tech. Univ. of Athens
A.-H. Seltveit, Telenor AS
A. Sernadas, Instituto Superior Tecnico
A. Sölvberg, University of Trondheim
A. Sutcliffe, City University
B. Thalheim, Cottbus Technical Univ.
C. Thanos, CNR-IEI
B. Theodoulidis, UMIST
Y. Vassiliou, Nat. Tech. Univ. of Athens
Y. Wand, University of British Columbia
B. Wangler, Stockholm University
T. Wasserman, IDE
R. J. Wieringa, Vrije Universiteit
G. M. Wijers, ID Research B.V.
S. Wrycza, University of Gdansk
R. Zicari, Johann Wolfgang Goethe Univ.