François Bry  Raghu Ramakrishnan
Kotagiri Ramamohanarao (Eds.)

Deductive and
Object-Oriented
Databases

Fifth International Conference, DOOD ’97
Montreux, December 1997
Proceedings
Foreword

DOOD’97 is the fifth conference in a series of international events which aim at promoting communication between researchers involved in two very active areas of DB research: deductive and object-oriented databases. Whereas both areas were considered competing technologies for future database technology by many at the start of the DOOD series, they have been accepted as valuable, complementary branches of research today. Starting in Kyoto, Japan, in 1989, the DOOD conferences moved to Europe in 1991 (Munich, Germany), to America in 1993 (Phoenix, Arizona, USA) and back to Asia in 1995 (Singapore). In 1997, DOOD was hosted in Europe again, this time in Montreux, Switzerland, where DOOD’97 took place from December 8 to 12.

As General Conference Chairperson I would like to express particular thanks to all those individuals who worked hard to prepare and organize DOOD’97. First and foremost, François Bry, Raghu Ramakrishnan, and Kotagiri Ramamohanarao – the Chairmen of the three regional program committees of DOOD’97 – as well as the members of their committees deserve to be mentioned. Burkhard Freitag as Tutorial Chair and Chiaki Sakama as Workshop Chair also contributed to the preparation phase of the scientific program in a valuable way. Once the program had been selected, Stefano Spaccapietra and his team at EPFL Lausanne took over the task of organizing all those many aspects of logistics which are essential for the success of a conference. Thanks to all of them for making DOOD’97 an enjoyable event.

December 1997

Rainer Manthey
Preface

The Fifth International Conference on Deductive and Object-Oriented Databases (DOOD) was held in Montreux, Switzerland, from December 8 to 12, 1997. The proceedings contain 22 full papers and 6 short papers, chosen from a total of 59 submitted papers. We anticipate that extended versions of several papers will subsequently appear in journals; the conference version is intended to facilitate timely dissemination and discussion of research results.

We thank the American, European, and Far East program committee members and the external referees for their hard work in reviewing submissions and putting together a quality program. We also thank the invited and tutorial speakers for their appreciated contributions. Finally, we thank Martin Josko, from the University of Munich, for his technical assistance during the electronic review process and for collecting the articles of this book.

December 1997

François Bry
Raghu Ramakrishnan
Kotagiri Ramamohanarao
Committees

Program Committee

Far East:
Arbee Chen (National Tsing Hua University, Taiwan)
Gill Dobbie (Victoria University, New Zealand)
Guozhu Dong (University of Melbourne, Australia)
Kazuhiko Kato (Tsukuba University, Japan)
David Kemp (University of Melbourne, Australia)
Tok Wang Ling (National University of Singapore)
Hong Jun Lu (National University of Singapore)
Kotagiri Ramamohanarao (University of Melbourne, Australia), Chair
N.L. Sarda (IIT Mumbai, India)
Atsuhiro Takasu (National Center for Science Information Systems, Japan)
Beat Wüthrich (University of Science and Technology, Hong Kong)
Kazumasa Yokota (Kyoto University, Japan)
Masatoshi Yoshikawa (AIST Nara, Japan)

Americas:
Alex Brodsky (George Mason University, USA)
Jan Chomicki (Monmouth College, USA)
Suzanne Dietrich (Arizona State University, USA)
Richard Hull (Lucent Bell Laboratories, USA)
Laks Lakshmanan (Concordia University, Canada)
Alberto Mendelzon (University of Toronto, Canada)
Raghu Ramakrishnan (University of Wisconsin-Madison), Chair
Peter Revesz (University of Nebraska-Lincoln, USA)
Kenneth Ross (Columbia University, USA)
Divesh Srivastava (AT&T Research, USA)
V.S. Subrahmanian (University of Maryland, USA)
Terrance Swift (SUNY Stony Brook, USA)
Carlo Zaniolo (University of California-Los Angeles, USA)
Stan Zdonik (Brown University, USA)

Europe:
Herman Balsters (Universiteit Twente, The Netherlands)
Elena Baralis (Politecnico di Torino, Italy)
Nicole Bidoit (Université Paris Nord, France)
Stefan Brass (Universität Hildesheim, Germany)
François Bry (Ludwig-Maximilians-Universität München, Germany), Chair
Piero Fraternali (Politecnico di Milano, Italy)
Gabriel Kuper (Université Libre de Bruxelles, Belgium)
Alexandre Lefebvre (Next Century Media, Inc., France)
Rainer Manthey (Universität Bonn, Germany)
Boris Novikov (Sankt-Peterburgsky Universitet, Russia)
Norman Paton (University of Manchester, Great Britain)
Christophe Rigotti (Institut National des Sciences Appliquées de Lyon, France)
Heribert Schütz (Ludwig-Maximilians-Universität München, Germany)
Ernest Teniente (Universitat Politècnica de Catalunya, Spain)
Jan Van den Bussche (Limburgs Universitair Centrum, Belgium)

External Referees

Henk Blanken
Jean-François Boulicaut
L. Crnogorac
Maarten Fokkinga
Laurent Fournié
Françoise Gire
Paul Grefen
Ulrike Griefahn
Thomas Lemke
Sofian Maabout
Stefano Paraboschi
Giuseppe Psaila
Rick van Rein
Praveen Seshadri
S. Sudarshan
Letizia Tanca
Christophe Tollu
Mark Vermeer
Laurent Vieille
Tim T. Y. Wai
Annita Wilschut

Chairs

Burkhard Freitag (Universität Passau, Germany), Tutorial Chair
Rainer Manthey (Universität Bonn, Germany), Conference Chair
Chiaki Sakama (Wakayama University, Japan), Workshop Chair
Stefano Spaccapietra (École Polytechnique Fédérale de Lausanne, Switzerland), Organization Committee Chair
Regional Coordinators

Paolo Atzeni *(Università di Roma Tre, Italy)*, Europe
Jorge Lobo *(University of Illinois at Chicago, USA)*, Americas
Shojiro Nishio *(Osaka University, Japan)*, Far East

DOOD Steering committee

The series of DOOD conferences has been coordinated and organized by the members of the DOOD Steering Committee since 1989. Members of this committee are replaced according to fixed rules and schedule.

Stefano Ceri *(Politecnico di Milano, Italy)*
Oris Friesen *(BULL, Phoenix/Arizona, USA)*
Michael Kifer *(SUNY, Stony Brook/New York, USA)*
Tok-Wang Ling *(National University of Singapore)*
Rainer Manthey *(Universität Bonn, Germany)*
Alberto Mendelzon *(University of Toronto, Canada)*
Jack Minker *(University of Maryland, USA)*, Chair (Emeritus)
Jean-Marie Nicolas *(Next Century Media, Inc., France)*, Chair
Shojiro Nishio *(University of Osaka, Japan)*
Kotagiri Ramamohanarao *(University of Melbourne, Australia)*
Shalom Tsur *(Hitachi America, USA)*
Laurent Vieille *(Next Century Media, Inc., France)*