

Lecture Notes in Computer Science

1191

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Constraint Databases and Applications

Second International Workshop
on Constraint Database Systems, CDB '97
Delphi, Greece, January 11-12, 1997
CP '96 Workshop on Constraints and Databases
Cambridge, MA, USA, August 19, 1996
Selected Papers



Springer

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Cataloging-in-Publication data applied for

Die Deutsche Bibliothek - CIP-Einheitsaufnahme

Constraint databases and applications : selected papers / Second International Workshop on Constraint Database Systems, CDB '97, Delphi, Greece, January 1997 ; CP '96 Workshop on Constraints and Databases, Cambridge, MA, USA, August 1996. V. Gaede ... (ed.). - Berlin ; Heidelberg ; New York ; Barcelona ; Budapest ; Hong Kong ; London ; Milan ; Paris ; Santa Clara ; Singapore ; Tokyo : Springer, 1997 (Lecture notes in computer science ; Vol. 1191)
ISBN 3-540-62501-1

NE: Gaede, Volker [Hrsg.]; International Workshop on Constraint Database Systems <2, 1997, Delphi>; GT

CR Subject Classification (1991): H.2, H.3, D.1.3, D.3.2-3, D.1.m

ISSN 0302-9743

ISBN 3-540-62501-1 Springer-Verlag Berlin Heidelberg New York

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Printed in Germany

Typesetting: Camera-ready by author
SPIN 10549860 06/3142 - 5 4 3 2 1 0 Printed on acid-free paper

In memoriam
Paris Kanellakis
1953 – 1995

Preface

These proceedings contain the technical papers selected for presentation at the Workshop on Constraint Databases and Their Applications (CDB'97) held in Delphi, Greece, January 11–12, 1997, and some of the papers presented at the CP'96 Workshop on Constraints and Databases, held in Cambridge, Massachusetts, USA, on August 19, 1996.

Constraint database systems represent a new database paradigm that integrates concepts from the area of constraint-based reasoning, constraint logic programming, and databases.

The recent success of constraint-based programming is based on the direct contribution of constraints to program specification, implementation, and maintenance. Constraints are the normal language of discourse for many high-level applications; built-in constraint solvers and active constraints contribute to efficient implementation; and the clarity and brevity of constraint programs simplifies program maintenance. For large scale applications such as geographic information systems (GIS), the efficient processing and management of large sets of constraints is very important.

The papers included in this volume provide a good overview on recent research results and possible applications of constraint database systems to areas such as spatial and temporal databases, geographic information systems, and scheduling. But this volume also reflects the broad range of different views on constraints, depending on the application background. For example, constraints can be used to capture spatial, temporal, imprecise, complex, indexing, and active information within a single framework. Thus, constraints can yield a much more expressive database paradigm than current models.

The Delphi workshop included two tutorials: one on theoretical aspects of constraint databases by Gabriel Kuper, and one on applications of constraint programming and constraint database systems by Mark Wallace. There was also a panel on applications of constraint databases to stimulate the discussion of emerging issues. The invited talk by Christos H. Papadimitriou reviewed recent work on topological queries and established connections to constraint databases. The Cambridge workshop included an invited talk by Manolis Koubarakis on the recently established CHOROCHRONOS project.

Both workshops would have been impossible without the help and effort of many people. In particular, we want to thank the program committees for reviewing papers, the local organizers for making the arrangements, and our publisher Springer-Verlag.

Financial support from the European Union for the ESPRIT Working Group CONTESSA (8666) and an NSF-ESPRIT cooperative grant on Database Programming Languages and Environments are also gratefully acknowledged.

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