

# Table of Contents

## Invited Papers

Data Warehouse Scenarios for Model Management . . . . .	1
<i>Philip A. Bernstein and Erhard Rahm</i> ( <i>Microsoft Corporation, USA</i> )	
Reflections on Computer Science and Information Systems Research . . . . .	16
<i>Salvatore T. March (Vanderbilt University, USA)</i>	
From Entities and Relationships to Social Actors and Dependencies . . . . .	27
<i>John Mylopoulos, Ariel Fuxman (University of Toronto, Canada),</i> <i>and Paolo Giorgini (University of Trento, Italy)</i>	

## Database Integration

A Pragmatic Method for the Integration of Higher-Order Entity-Relationship Schemata . . . . .	37
<i>Thomas Lehmann (Volkswagen AG, Germany) and</i> <i>Klaus-Dieter Schewe (Massey University, New Zealand)</i>	
Explicit Modeling of the Semantics of Large Multi-layered Object-Oriented Databases . . . . .	52
<i>Christoph Koch, Zolt Kovacs, Jean-Marie Le Goff</i> ( <i>CERN, Switzerland</i> ), <i>Richard McClatchey (Univ. West of England, UK)</i> , <i>and Paolo Petta (Austrian Research Institute for Artificial Intelligence, Austria)</i> <i>and Tony Solomonides (Univ. West of England, UK)</i>	
Declarative Mediation in Distributed Systems . . . . .	66
<i>Sergey Melnik (Stanford University, USA)</i>	

## Temporal and Active Database Modeling

Temporal Constraints for Object Migration and Behavior Modeling Using Colored Petri Nets . . . . .	80
<i>Hideki Sato (Aichi Gakusen University, Japan) and</i> <i>Akifumi Makinouchi (Kyushu University, Japan)</i>	
SQL <sup>ST</sup> : A Spatio-Temporal Data Model and Query Language . . . . .	96
<i>Cindy Xinmin Chen and Carlo Zaniolo (University of California, Los Angeles, USA)</i>	

TBE: Trigger-By-Example . . . . . 112  
*Dongwon Lee, Wenlei Mao, and Wesley W. Chu*  
*(University of California, Los Angeles, USA)*

## Database and Data Warehouse Design Techniques

Decomposition by Pivoting and Path Cardinality Constraints . . . . . 126  
*Sven Hartmann (Universität Rostock, Germany)*

IS=DBS+Interaction: Towards Principles of Information System Design . . 140  
*Dina Goldin (University of Massachusetts, Boston, USA),*  
*Srinath Srinivasa, and Bernhard Thalheim*  
*(Brandenburgische Technische Universität, Germany)*

A Viewpoint-Based Framework for Discussing the Use of Multiple  
Modelling Representations . . . . . 154  
*Nigel Stanger (University of Otago, New Zealand)*

Practical Approach to Selecting Data Warehouse Views Using Data  
Dependencies . . . . . 168  
*Gillian Dobbie and Tok Wang Ling (National University of Singapore,*  
*Singapore)*

## Analysis Patterns and Ontologies

Semantic Analysis Patterns . . . . . 183  
*Eduardo B. Fernandez and Xiaohong Yuan*  
*(Florida Atlantic University, USA)*

Tool Support for Reuse of Analysis Patterns – A Case Study . . . . . 196  
*Petia Wohead (Stockholm University/Royal Institute of Technology,*  
*Sweden)*

Ontological Analysis of Taxonomic Relationships . . . . . 210  
*Nicola Guarino (LADSEB/CNR, Italy) and Christopher Welty*  
*(Vassar College, USA)*

## Web-Based Information Systems

A Conceptual Model for the Web . . . . . 225  
*Mengchi Liu (University of Regina, Canada) and Tok Wang Ling*  
*(National University of Singapore, Singapore)*

Adapting Materialized Views after Redefinition in Distributed  
Environments . . . . . 239  
*Zohra Bellahsene (LIRMM, France)*

On Warehousing Historical Web Information . . . . .	253
<i>Yinyan Cao, Ee-Peng Lim, and Wee-Keong Ng</i> ( <i>Nanyang Technological University, Singapore</i> )	

## Business Process Modeling

On Business Process Model Transformations . . . . .	267
<i>Wasim Sadiq and Maria E. Orlowska</i> ( <i>The University of Queensland, Australia</i> )	
Towards Use Case and Conceptual Models through Business Modeling . . . . .	281
<i>J. García Molina, M. José Ortín, Begoña Moros, Joaquín Nicolás,</i> <i>and Ambrosio Toval (Universidad de Murcia, Spain)</i>	
A Conceptual Modeling Framework for Multi-agent Information Systems . . . . .	295
<i>Ricardo M. Bastos (Pontifícia Universidade Católica do Rio Grande</i> <i>do Sul, Brazil) and José Palazzo M. de Oliveira</i> ( <i>Universidade Federal do Rio Grande do Sul, Brazil</i> )	

## Conceptual Modeling and XML

Object Role Modelling and XML-Schema . . . . .	309
<i>Linda Bird, Andrew Goodchild (The University of Queensland,</i> <i>Australia), and Terry Halpin (Microsoft Corporation, USA)</i>	
Constraints-Preserving Transformation from XML Document Type Definition to Relational Schema . . . . .	323
<i>Dongwon Lee and Wesley W. Chu (University of California,</i> <i>Los Angeles, USA)</i>	
X-Ray – Towards Integrating XML and Relational Database Systems . . . . .	339
<i>Gerti Kappel, Elisabeth Kapsammer, Stefan Rausch-Schott, and</i> <i>Werner Retschitzegger (University of Linz, Austria)</i>	

## Engineering and Multimedia Application Modeling

A Conceptual Model for Remote Data Acquisition Systems . . . . .	354
<i>Txomin Nieva and Alain Wegmann (Swiss Federal Institute of</i> <i>Technology, Switzerland)</i>	
A Modeling Language for Design Processes in Chemical Engineering . . . . .	369
<i>Markus Eggersmann, Claudia Krobb, and Wolfgang Marquardt</i> ( <i>RWTH Aachen, Germany</i> )	
VideoGraph: A Graphical Object-Based Model for Representing and Querying Video Data . . . . .	383
<i>Duc A. Tran, Kien A. Hua, and Khanh Vu</i> ( <i>University of Central Florida, USA</i> )	

## Object-Oriented Modeling

Object-Oriented Modelling in Practice: Class Model Perceptions in the ERM Context ..... 397  
*Steve Hitchman (USA)*

ROVER: A Framework for the Evolution of Relationships ..... 409  
*Kajal T. Claypool, Elke A. Rundensteiner, and George T. Heineman (Worcester Polytechnic Institute, USA)*

Improving the Reuse Possibilities of the Behavioral Aspects of Object-Oriented Domain Models ..... 423  
*Monique Snoeck and Geert Poels (Katholieke Universiteit Leuven, Belgium)*

## Applying Object-Oriented Technology

Algebraic Database Migration to Object Technology ..... 440  
*Andreas Behm, Andreas Geppert, and Klaus R. Dittrich (University of Zurich, Switzerland)*

A Layered Software Specification Architecture ..... 454  
*M. Snoeck, S. Poelmans, and G. Dedene (Katholieke Universiteit Leuven, Belgium)*

A Reuse-Based Object-Oriented Framework Towards Easy Formulation of Complex Queries ..... 470  
*Chabane Oussalah and Abdelhak Seriai (Université de Nantes, France)*

## Quality in Conceptual Modeling

Evaluating the Quality of Reference Models ..... 484  
*Vojislav B. Mišić (The Hong Kong University of Science and Technology, Hong Kong) and J. Leon Zhao (University of Arizona, USA)*

Measures for Assessing Dynamic Complexity Aspects of Object-Oriented Conceptual Schemes ..... 499  
*Geert Poels and Guido Dedene (Katholieke Universiteit Leuven, Belgium)*

Measuring the Quality of Entity Relationship Diagrams ..... 513  
*Marcela Genero, Luis Jiménez, and Mario Piattini (University of Castilla-La Mancha, Spain)*

## Application Design Using UML

Behavior Consistent Inheritance in UML . . . . .	527
<i>Markus Stumptner (Technische Universität Wien, Austria) and Michael Schrefl (University of South Australia, Australia)</i>	
The Viewpoint Abstraction in Object-Oriented Modeling and the UML . . .	543
<i>Renate Motschnig-Pitrik (University of Vienna, Austria)</i>	
XML Conceptual Modeling Using UML . . . . .	558
<i>Rainer Conrad, Dieter Scheffner, and J. Christoph Freytag (Humboldt-Universität zu Berlin, Germany)</i>	

## DAMA International Industrial Abstracts

Metadata Engineering for Corporate Portals Using XML . . . . .	572
<i>Peter Aiken (Virginia Commonwealth University, USA), and Kathi Hogshead Davis (Northern Illinois University, USA)</i>	
The Role of Information Resource Management in Managing a Corporate Portal . . . . .	574
<i>Arvind D. Shah (Performance Development Corporation, USA)</i>	
The Five-Tier Five-Schema Concept . . . . .	575
<i>Michael H. Brackett (President, DAMA International)</i>	
Documenting Meta Data Transformations . . . . .	577
<i>Alex Friedgan (Data Cartography, Inc., USA)</i>	
Advanced Data Model Patterns . . . . .	579
<i>David C. Hay (Essential Strategies, Inc., USA)</i>	
Information Quality at Every Stage of the Information Chain . . . . .	580
<i>Elaine Strickleth (Acton Burnell, Inc., USA)</i>	
A Fact-Oriented Approach to Business Rules . . . . .	582
<i>Terry Halpin (Microsoft Corporation, USA)</i>	
Personalized Digests of Sports Programs Using Intuitive Retrieval and Semantic Analysis . . . . .	584
<i>Takako Hashimoto, Yukari Shirota, Atsushi Iizawa, and Hideko S. Kunii (Information Broadcasting Laboratories, Inc. and Ricoh Company, Ltd., Japan)</i>	
<b>Author Index . . . . .</b>	<b>587</b>



<http://www.springer.com/978-3-540-41072-0>

Conceptual Modeling - ER 2000

19th International Conference on Conceptual Modeling,

Salt Lake City, Utah, USA, October 9-12, 2000

Proceedings

Laender, A.H.F.; Liddle, S.W.; Storey, V. (Eds.)

2000, XIX, 589 p., Softcover

ISBN: 978-3-540-41072-0