# Advanced Topics in Database Research
## Volume 4
### Table of Contents

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Pages</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td></td>
<td>vi</td>
<td></td>
</tr>
</tbody>
</table>
| I       | Dynamic Workflow Restructuring Framework for Long-Running Business Processes                                               | 1     | Ling Liu, Georgia Institute of Technology, USA  
Calton Pu, Georgia Institute of Technology, USA  
Duncan Dubugras Ruiz, Pontifical Catholic University of RS, Brazil |
| II      | Design and Representation of Multidimensional Models with UML and XML Technologies                                           | 50    | Juan Trujillo, Universidad de Alicante, Spain  
Sergio Luján-Mora, Universidad de Alicante, Spain  
Il-Yeol Song, Drexel University, USA |
| III     | Does Protecting Databases Using Perturbation Techniques Impact Knowledge Discovery?                                         | 96    | Rick L. Wilson, Oklahoma State University, USA  
Peter A. Rosen, University of Evansville, USA |
| IV      | Simultaneous Database Backup Using TCP/IP and a Specialized Network Interface Card                                          | 108   | Scott J. Lloyd, University of Rhode Island, USA  
Joan Peckham, University of Rhode Island, USA  
Jian Li, Cornell University, USA  
Qing (Ken) Yang, University of Rhode Island, USA |
Chapter V
Towards User-Oriented Enterprise Modeling for Interoperability ................................................................. 130
Kai Mertins, Fraunhofer Institute IPK, Berlin
Thomas Knothe, Fraunhofer Institute IPK, Berlin
Martin Zelm, CIMOSA Association, Germany

Chapter VI
Using a Model Quality Framework for Requirements Specification of an Enterprise Modeling Language .................. 142
John Krogstie, SINTEF ICT and IDI, NTNU, Norway
Vibeke Dalberg, DNV, Norway
Siri Moe Jensen, DNV, Norway

Chapter VII
Population of a Method for Developing the Semantic Web Using Ontologies ................................................................ 159
Adolfo Lozano-Tello, Universidad de Extremadura, Spain
Asunción Gómez-Pérez, Universidad Politécnica de Madrid, Spain

Chapter VIII
An Evaluation of UML and OWL Using a Semiotic Quality Framework ........................................................................... 178
Yun Lin, Norwegian University of Science and Technology, Norway
Jennifer Sampson, Norwegian University of Science and Technology, Norway
Sari Hakkarainen, Norwegian University of Science and Technology, Norway
Hao Ding, Norwegian University of Science and Technology, Norway

Chapter IX
Information Modeling Based on Semantic and Pragmatic Meaning .............................................................................. 201
Owen Eriksson, Dalarna University, Sweden
Pål J. Ågerfalk, University of Limerick, Ireland, and Örebro University, Sweden

Chapter X
Higher-Order Types and Information Modeling .............................................. 218
Terry Halpin, Northface University, USA
Chapter XI
Criteria for Comparing Information Modeling Methods:
Informational and Computational Equivalence ........................... 238
   Keng Siau, University of Nebraska-Lincoln, USA

Chapter XII
COGEVAL: Applying Cognitive Theories to Evaluate
Conceptual Models ................................................................. 255
   Stephen Rockwell, University of Tulsa, USA
   Akhilesh Bajaj, University of Tulsa, USA

Chapter XIII
Quality of Analysis Specifications: A Comparison of FOOM
and OPM Methodologies .......................................................... 283
   Judith Kabeli, Ben-Gurion University, Israel
   Peretz Shoval, Ben-Gurion University, Israel

Chapter XIV
Interoperability of B2B Applications: Methods and Tools .......... 297
   Christophe Nicolle, Université de Bourgogne, France
   Kokou Yétongnon, Université de Bourgogne, France
   Jean-Claude Simon, Université de Bourgogne, France

Chapter XV
Possibility Theory in Protecting National Information
Infrastructure ............................................................................. 325
   Richard Baskerville, Georgia State University, USA
   Victor Portougal, University of Auckland, New Zealand

Chapter XVI
Enabling Information Sharing Across Government Agencies ...... 341
   Akhilesh Bajaj, University of Tulsa, USA
   Sudha Ram, University of Arizona, USA

About the Authors ........................................................................ 367

Index ............................................................................................ 377