# Table of Contents

Foreword .............................................................................................................................................. xx

Preface ................................................................................................................................................ xx

Acknowledgment ............................................................................................................................... xxv

## Section 1

**Keyword Search in XML and XML Stream Processing Techniques**

**Chapter 1**
Foundation of Keyword Search in XML ....................................................................................... 1  
*Weidong Yang, Fudan University, China*  
*Hao Zhu, Fudan University, China*

**Chapter 2**
An Efficient and Flexible Approach of Keyword Search in XML .................................................. 17  
*Weidong Yang, Fudan University, China*  
*Hao Zhu, Fudan University, China*

**Chapter 3**
Ontology-Driven Keyword Search for Heterogeneous XML Data Sources ................................. 31  
*Weidong Yang, Fudan University, China*  
*Hao Zhu, Fudan University, China*

**Chapter 4**
Foundation of XML Stream Processing Techniques ..................................................................... 48  
*Weidong Yang, Fudan University, China*  
*Hao Zhu, Fudan University, China*

**Chapter 5**
Matching of Twig Pattern with AND/OR Predicates over XML Streams .................................... 60  
*Weidong Yang, Fudan University, China*  
*Hao Zhu, Fudan University, China*
Section 2
Retrieving Information from Compressed XML Documents According to Vague Queries

Chapter 7
Introduction .................................................................................................................. 91
Badya Al-Hamadani, University of Huddersfield, UK
Joan Lu, University of Huddersfield, UK

Chapter 8
Research Background .................................................................................................. 96
Badya Al-Hamadani, University of Huddersfield, UK
Joan Lu, University of Huddersfield, UK

Chapter 9
State of the Art Technology in Compressing and Querying XML Documents ............... 107
Badya Al-Hamadani, University of Huddersfield, UK
Joan Lu, University of Huddersfield, UK

Chapter 10
Compressing and Vague Querying (XCVQ) Design .................................................... 117
Badya Al-Hamadani, University of Huddersfield, UK
Joan Lu, University of Huddersfield, UK

Chapter 11
XCVQ Testing, Evaluation and Discussion ................................................................ 140
Badya Al-Hamadani, University of Huddersfield, UK
Joan Lu, University of Huddersfield, UK

Chapter 12
Conclusions and Future Work .................................................................................. 154
Badya Al-Hamadani, University of Huddersfield, UK
Joan Lu, University of Huddersfield, UK
Section 3
Automatic Mapping of XML Documents into Relational Database

Chapter 13
Automatic Mapping of XML Documents into Relational Database: Introduction

Ibrahim Dweib, Sultan Qaboos University, Oman
Joan Lu, University of Huddersfield, UK

Chapter 14
Research Background

Ibrahim Dweib, Sultan Qaboos University, Oman
Joan Lu, University of Huddersfield, UK

Chapter 15
State of the Art Technology

Ibrahim Dweib, Sultan Qaboos University, Oman
Joan Lu, University of Huddersfield, UK

Chapter 16
MAXDOR Model

Ibrahim Dweib, Sultan Qaboos University, Oman
Joan Lu, University of Huddersfield, UK

Chapter 17
System Architecture and Implementation

Ibrahim Dweib, Sultan Qaboos University, Oman
Joan Lu, University of Huddersfield, UK

Chapter 18
Experiments and their Assessment

Ibrahim Dweib, Sultan Qaboos University, Oman
Joan Lu, University of Huddersfield, UK

Chapter 19
Conclusions and Further Research

Ibrahim Dweib, Sultan Qaboos University, Oman
Joan Lu, University of Huddersfield, UK
Section 4
An Investigation in Multi-Feature Query Language Based Classification in Image Retrieval

Chapter 20
An Investigation in Multi-Feature Query Language Based Classification in Image Retrieval:
Introduction.......................................................................................................................... 271
Raoul Pascal Pein, University of Huddersfield, UK
Joan Lu, University of Huddersfield, UK
Wolfgang Renz, Hamburg University of Applied Sciences, Germany

Chapter 21
An Investigation in Multi-Feature Query Language Based Classification in Image Retrieval:
Background Research ...................................................................................................... 276
Raoul Pascal Pein, University of Huddersfield, UK
Joan Lu, University of Huddersfield, UK
Wolfgang Renz, Hamburg University of Applied Sciences, Germany

Chapter 22
Methods Employed ........................................................................................................... 301
Raoul Pascal Pein, University of Huddersfield, UK
Joan Lu, University of Huddersfield, UK
Wolfgang Renz, Hamburg University of Applied Sciences, Germany

Chapter 23
Design .................................................................................................................................. 321
Raoul Pascal Pein, University of Huddersfield, UK
Joan Lu, University of Huddersfield, UK
Wolfgang Renz, Hamburg University of Applied Sciences, Germany

Chapter 24
Case Studies ....................................................................................................................... 329
Raoul Pascal Pein, University of Huddersfield, UK
Joan Lu, University of Huddersfield, UK
Wolfgang Renz, Hamburg University of Applied Sciences, Germany

Chapter 25
Conclusion ............................................................................................................................. 370
Raoul Pascal Pein, University of Huddersfield, UK
Joan Lu, University of Huddersfield, UK
Wolfgang Renz, Hamburg University of Applied Sciences, Germany
Section 5
Business Process in Information Retrieval

Chapter 26
An Overview of Business Process Management ..........................................................373
Wei Zhou, Yunnan University, China
Yixuan Zhou, Yunnan University, China
Jinwu Yang, Yunnan University, China
Shaowen Yao, Yunnan University, China

Chapter 27
Business Process Modeling: Analysis and Evaluation ..................................................382
Gang He, Yunnan University, China
Gang Xue, Yunnan University, China
Kui Yu, Yunnan University, China
Shaowen Yao, Yunnan University, China

Chapter 28
Advanced Branching and Synchronization Patterns Description Using Pi-Calculus .............394
Kui Yu, Yunnan University, China
Nan Zhang, Yunnan University, China
Gang Xue, Yunnan University, China
Shaowen Yao, Yunnan University, China

Chapter 29
Modeling Process Exception Handling .........................................................................406
Gang Xue, Yunnan University, China
Kun Zhang, Yunnan University, China
Yurong Hu, Yunnan University, China
Shaowen Yao, Yunnan University, China

Chapter 30
A Rule-Based Approach to Model Business Process ....................................................424
Gang Xue, Yunnan University, China
Zhongwei Wu, Yunnan University, China
Kun Zhang, Chuxiong Normal University, China
Shaowen Yao, Yunnan University, China

Chapter 31
The Description and Relation of WS-CDL and BPEL ..................................................442
Yanjun Qian, Yunnan University, China
Wei Zhou, Yunnan University, China
Zhongwei Wu, Yunnan University, China
Shaowen Yao, Yunnan University, China