# Table of Contents

Foreword ........................................................................................................................................ viii  
Preface ........................................................................................................................................... x  

## Section 1  
Knowledge Modeling for the Recommendation Process  

### Chapter 1  
Educational Recommendation in an Informal Intentional Learning System ................................. 1  
*Ifeyinwa Okoye, University of Colorado at Boulder, USA*  
*Keith Maull, University of Colorado at Boulder, USA*  
*James Foster, University of Colorado at Boulder, USA*  
*Tamara Sumner, University of Colorado at Boulder, USA*  

### Chapter 2  
Metis: A Content Map-Based Recommender System for Digital Learning Activities .................. 24  
*Jody S. Underwood, Intelligent Automation, Inc., USA*  

### Chapter 3  
Context-Aware Recommendations using Topic Maps Technology for the Enhancement of the  
Creativity Process ......................................................................................................................... 43  
*George A. Sielis, University of Cyprus, Cyprus*  
*Christos Mettouris, University of Cyprus, Cyprus*  
*Aimilia Tzanavari, University of Cyprus, Cyprus*  
*George A. Papadopoulos, University of Cyprus, Cyprus*  

### Chapter 4  
An Ontology Network for Educational Recommender Systems .................................................. 67  
*Alicia Díaz, Universidad Nacional de La Plata, Argentina*  
*Regina Motz, Universidad de la República, Uruguay*  
*Edelweis Rohrer, Universidad de la República, Uruguay*  
*Libertad Tansini, Universidad de la República, Uruguay*
Section 2
Techniques, Algorithms and Architectures to Support the Recommendation Process

Chapter 5
Reputation in Peer-Based Learning Environments

Thieme Hennis, Delft University of Technology, The Netherlands
Stephan Lukosch, Delft University of Technology, The Netherlands
Wim Veen, Delft University of Technology, The Netherlands

Chapter 6
Factorization Techniques for Predicting Student Performance

Nguyen Thai-Nghe, University of Hildesheim, Germany
Lucas Drumond, University of Hildesheim, Germany
Tomáš Horváth, University of Hildesheim, Germany
Artus Krohn-Grimberghe, University of Hildesheim, Germany
Alexandros Nanopoulos, University of Hildesheim, Germany
Lars Schmidt-Thieme, University of Hildesheim, Germany

Chapter 7
Clustering of the Web Search Results in Educational Recommender Systems

Constanta-Nicoleta Bodea, Academy of Economic Studies, Romania
Maria-Iuliana Dascalu, Academy of Economic Studies, Romania
Adina Lipai, Academy of Economic Studies, Romania

Chapter 8
A Recommender System for Learning Objects Personalized Retrieval

Ana Casali, Universidad Nacional de Rosario, Argentina
Valeria Gerling, Universidad Nacional de Rosario, Argentina
Claudia Deco, Universidad Nacional de Rosario, Argentina
Cristina Bender, Universidad Nacional de Rosario, Argentina

Chapter 9
Meta-Rule Based Recommender Systems for Educational Applications

Vicente Arturo Romero Zaldivar, Atos Origin SAE, Spain
Daniel Burgos, Atos Origin SAE, Spain & International University of La Rioja, Spain
Abelardo Pardo, University Carlos III of Madrid, Spain

Chapter 10
A Systematic Approach for Designing Educational Recommender Systems

Patrick H. S. Brito, Federal University of Alagoas, Brazil
Ig Ibert Bittencourt, Federal University of Alagoas, Brazil
Aydano Pamponet Machado, Federal University of Alagoas, Brazil
Evandro Costa, Federal University of Alagoas, Brazil
Olavo Holanda, Federal University of Alagoas, Brazil
Rafael Ferreira, Federal University of Pernambuco, Brazil
Thiago Ribeiro, Federal University of Alagoas, Brazil
Section 3
Real World E-Learning Scenarios

Chapter 11
Case Study: Material Additions, Ratings, and Comments in a Course Setting

Juha Leino, University of Tampere, Finland

Chapter 12
Challenges to Use Recommender Systems to Enhance Meta-Cognitive Functioning in Online Learners

Mingming Zhou, Nanyang Technological University, Singapore
Yabo Xu, Sun Yet-sen University, P. R. China

Chapter 13
Providing Recommendations for Mobile Learning: Opportunities and Challenges from Context

Chengzhi Liu, Norwegian University of Science and Technology, Norway
Monica Divitini, Norwegian University of Science and Technology, Norway

About the Contributors

Index