CONTENTS

PREFACE ix
CONTRIBUTORS xi

1. Semantic Computing
   Phillip C.-Y. Sheu 1

PART I  SEMANTIC ANALYSIS 11

2. What Computers Need to Know About Verbs
   Susan Windisch Brown and Martha Palmer 13

3. Content-Based Retrieval of Videos
   Min Chen, Shu-Ching Chen, and Mei-Ling Shyu 33

4. A Semantic and Detection-Based Approach to Speech
   and Language Processing
   Li Deng, Kuansan Wang, and Rodrigo Capobianco Guido 49

5. Link Analysis in Web Mining: Techniques and Applications
   Prasanna Desikan, Colin DeLong, and Jaideep Srivastava 69

6. Conversational Thread Extraction and Topic Detection in
   Text-Based Chat
   Paige Adams and Craig Martel 87

7. Speaker Recognition and Diarization
   Gerald Friedland and David van Leeuwen 115

8. Machine Learning Methods for Ontology Mining
   Nicola Fanizzi, Claudia D’Amato, and Floriana Esposito 131
   Lyndon Kennedy and Shih-Fu Chang

10. Process Mining and Description
    Qi Wang and Phillip C.-Y. Sheu

PART II SEMANTIC LANGUAGES AND INTEGRATION

11. Semantic Integration: The Hawkeye Approach
    Jeff Heflin and Zhengxiang Pan

12. Semantics of Software Modeling
    Fernando Silva Parreiras, Steffen Staab, Jürgen Ebert, Jeff Z. Pan,
    Krzysztof Miksa, Harald Kühn, Srdjan Zivkovic, Stefano Tinella,
    Uwe Assmann, and Jakob Henriksson

13. Semantic-Driven Component-Based Automated Code Synthesis
    Jicheng Fu, Farokh B. Bastani, and I.-Ling Yen

14. Semantic Web Services
    Shu Wang, Qi Wang, Haitao Gong, and Phillip C.-Y. Sheu

PART III SEMANTIC APPLICATIONS

15. Knowledge Work
    Aljoscha Burchardt, Iryna Gurevych, and Max Mühlhäuser

    Eric Zavesky, Zhu Liu, Dave Gibbon, and Behzad Shahzaray

17. Social and Expert Research in Online Communities
    Florian Metze, Christian Bauckhage, and Tansu Alpcan

18. Phase Coherence in Conceptual Spaces for Conversational Agents
    Giorgio Vassallo, Giovanni Pilato, Agnese Augello,
    and Salvatore Gaglio

19. Role of Semantics in Question Answering
    Dan Moldovan, Marta Tatu, and Christine Clark

20. Developing and Using a National Cross-Domain Semantic Web Infrastructure
    Eero Hyvönen
   Fadi Almasalha, Faisal Bashir, Ashfaq Khokhar, Farrukh Khan, Hammad Haseeb, and Arif Ghafoor

PART IV   SEMANTIC INTERFACE

22. Semantic Languages for Software Engineering
   Shu Wang, Fei Xie, and Phillip C.-Y. Sheu

23. From Semantic Objects to Structured Natural Language
   Phillip C.-Y. Sheu, Atsushi Kitazawa, Chihiro Ishii, Kenichi Kaneko, and Fei Xie

INDEX