Contents

Part I  Introduction to Agents and Data Mining Interaction

1  Introduction to Agent Mining Interaction and Integration ............. 3
   Longbing Cao

2  Towards the Integration of Multiagent Applications and Data Mining ................................................. 37
   Célia Ghedini Ralha

3  Agent-Based Distributed Data Mining: A Survey ....................... 47
   Chayapol Moemeng, Vladimir Gorodetsky, Ziye Zuo, Yong Yang and Chengqi Zhang

Part II  Data Mining Driven Agents

4  Exploiting Swarm Behaviour of Simple Agents for Clustering Web Users’ Session Data ............................. 61
   Shafiq Alam, Gillian Dobbie, and Patricia Riddle

5  Mining Temporal Patterns to Improve Agents Behavior: Two Case Studies .................................................. 77
   Philippe Fournier-Viger, Roger Nkambou, Usef Fahihi, Engelbert Mephu Nguifo

6  A Multi-Agent System for Extracting and Analysing Users’ Interaction in a Collaborative Knowledge Management System .... 93
   Doina Alexandra Dumitrescu, Ruth Cobos and Jaime Moreno-Llorena

7  Towards Information Enrichment through Recommendation Sharing ......................................................... 103
   Li-Tung Weng, Yue Xu, Yuefeng Li and Richi Nayak
8  A Multiagent-based Intrusion Detection System with the Support of Multi-Class Supervised Classification .......................................................... 127
Mei-Ling Shyu and Varsha Sainani

9  Automatic Web Data Extraction Based on Genetic Algorithms and Regular Expressions ................................................................. 143
David F. Barrero, David Camacho, and María D. R-Moreno

10 Establishment and Maintenance of a Knowledge Network by Means of Agents and Implicit Data .............................................................. 155
Jaime Moreno–Llorena, Xavier Alamán and Ruth Cobos

11 Equipping Intelligent Agents with Commonsense Knowledge acquired from Search Query Logs: Results from an Exploratory Story ................................................................. 167
Markus Strohmaier, Mark Kröll, and Peter Prettenhofer

12 A Multi-Agent Learning Paradigm for Medical Data Mining Diagnostic Workbench ................................................................. 177
Sam Chao and Fai Wong

Part III  Agent Driven Data Mining

13 The EMADS Extendible Multi-Agent Data Mining Framework ...... 189
Kamal Ali Albashiri, and Frans Coenen

14 A Multiagent Approach to Adaptive Continuous Analysis of Streaming Data in Complex Uncertain Environments ............................. 201
Igor Kiselev and Reda Alhajj

15 Multiagent Systems for Large Data Clustering ................................. 219
T.Ravindra Babu, M. Narasimha Murty, and S.V.Subrahmanya

16 A Multiagent, Multiobjective Clustering Algorithm .......................... 239
Daniela S. Santos, Denise de Oliveira, and Ana L. C. Bazzan

17 Integration of Agents and Data Mining in Interactive Web Environment for Psychometric Diagnostics .................................................. 251
Velibor Ilić

18 A Multi-Agent Framework for Anomalies Detection on Distributed Firewalls Using Data Mining Techniques .............................. 267
Kamel Karoui,Fakher Ben Ftima and Henda Ben Ghezala

19 Competitive-Cooperative Automated Reasoning from Distributed and Multiple Source of Data ................................................................. 279
Amin Milani Fard
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Normative Multi-Agent Enriched Data Mining to Support E-Citizens</td>
<td>291</td>
</tr>
<tr>
<td></td>
<td>Stanislaw A. B. Stane and Mariusz Zytniewsk</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>CV-Muzar - The Virtual Community Environment that Uses Multiagent Systems for Formation of Groups</td>
<td>305</td>
</tr>
<tr>
<td></td>
<td>Ana Carolina Bertoletti De Marchi and Márcia Cristina Moraes</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Agent based Video Contents Identification and Data Mining Using Watermark based Filtering</td>
<td>315</td>
</tr>
<tr>
<td></td>
<td>HeungKyu Lee</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Index</td>
<td>325</td>
</tr>
</tbody>
</table>
Data Mining and Multi-agent Integration
(Ed.) L. Cao
2009, XIV, 332 p. 100 illus., Hardcover