# Contents

## Part I Geosimulation and Land Use Plan

1. **A Challenge to Configure Form Scenarios for Urban Growth Simulations Reflecting the Institutional Implications of Land-Use Policy**
   - Ying Long, Zhenjiang Shen, Qizhi Mao, and Liqun Du
   - Page 3

2. **A Planning Tool for Simulating Urban Growth Process and Spatial Strategy of Urban Development in Chuandong, China**
   - Yan Ma, Zhenjiang Shen, Dingyou Zhou, and Ke Wang
   - Page 27

3. **Simulating Spatio-Temporal Allocation of Farmland Conversion Quotas in China Using a Multi-Agent System**
   - Zhang Honghui, Zeng Yongnian, Tan Rong, and Shen Zhenjiang
   - Page 49

4. **Planning in Complex Spatial and Temporal Systems: A Simulation Framework**
   - Shih-Kung Lai and Haoying Han
   - Page 73

5. **Reaching Consensus Among Stakeholders on Planned Urban Form Using Constrained CA**
   - Ying Long and Zhenjiang Shen
   - Page 91

6. **An Agent-Based Approach to Support Decision-Making of Total Amount Control for Household Water Consumption**
   - Yan Ma, Zhenjiang Shen, Mitsuhiko Kawakami, Katsunori Suzuki, and Ying Long
   - Page 107
Part II  GeoVisualization and Urban Design

7 Review of VR Application in Digital Urban Planning and Managing ........................................ 131
   Anrong Dang, Wei Liang, and Wei Chi

8 Virtual Fort San Domingo in Taiwan: A Study on Accurate and High Level of Detail 3D Modelling ............... 155
   Shih-Yuan Lin and Sheng-Chih Chen

9 Web-Based Multimedia and Public Participation for Green Corridor Design of an Urban Ecological Network ................. 185
   Zhenjiang Shen, Mitsuhiko Kawakami, and Kazuko Kishimoto

10 Online Cooperative Design for the Proposal of Layouts of Street Furniture in a Street Park ................................... 205
    Zhenjiang Shen, Dingyou Zhou, Mitsuhiko Kawakami, Kazuko Kishimoto, and Seitaro Imai

11 Online Learning Tool for Repair of Traditional Merchant Houses: Machiya ........................................ 225
    Zhenjiang Shen, Mitsuhiko Kawakami, Masayasu Tsunekawa, and Eiichi Nishimoto

12 Historical Landscape Restoration Using Google Technology in a Traditional Temple Area, Kanazawa, Japan .................. 241
    Zhenjiang Shen, Mitsuhiko Kawakami, Zheyuang Chen, and Linqian Peng

Part III  Geography Information System and Planning Support

13 Automatic Generation of Virtual 3D City Models for Urban Planning ........................................ 265
    Kenichi Sugihara and Zhenjiang Shen

14 An Urban Growth Control Planning Support System for the Beijing Metropolitan Area ........................... 285
    Ying Long, Zhenjiang Shen, and Qizhi Mao

15 A Planning Support System for Retrieving Planning Alternatives of Historical Conservation Areas from Spatial Data Using GIS ................................................................. 307
    Zhenjiang Shen, Mitsuhiko Kawakami, Fangfang Lu, Lanchun Bian, Ying Long, Lin Gao, and Dingyou Zhou

16 Visualization of the District Ecological Network Plan at Urban Partitions for Public Involvement ...................... 323
    Zhenjiang Shen, Mitsuhiko Kawakami, and Satoshi Yamashita
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 Simulating Land-Use Patterns and Building Types after Land Readjustment at the Urban District Level Using the CAUFN Tool</td>
<td>343</td>
</tr>
<tr>
<td>Zhenjiang Shen, Mitsuhiko Kawakami, Takaaki Kushita, and Ippei Kuwamura</td>
<td></td>
</tr>
<tr>
<td>18 Integration of MAS and GIS Using Netlogo</td>
<td>369</td>
</tr>
<tr>
<td>Zhenjiang Shen, Xiaobai A. Yao, Mitsuhiko Kawakami, Ping Chen, and Masahito Koujin</td>
<td></td>
</tr>
<tr>
<td>Index</td>
<td>389</td>
</tr>
</tbody>
</table>
Geospatial Techniques in Urban Planning
Shen, Z.
2012, XIII, 393 p., Hardcover
ISBN: 978-3-642-13558-3