## Contents

1 Overview: Big Data Support for Urban Planning and Management in China................................................................. 1  
Zhenjiang Shen

### Part I  Social Big Data for Exploring Human Behaviors and Urban Structure

2 Early Warning of Human Crowds Based on Query Data from Baidu Maps: Analysis Based on Shanghai Stampede .......... 19  
Jingbo Zhou, Hongbin Pei, and Haishan Wu

3 Spatial Distribution Characteristics of Residents’ Emotions Based on Sina Weibo Big Data: A Case Study of Nanjing ........... 43  
Feng Zhen, Jia Tang, and Yingxue Chen

4 Measuring by Movements: Hierarchical Clustering of Cities in China Based on Aggregated Massive Positioning Data........... 63  
Dong Li, Menghe Wu, Bingruo Duan, and Yuheng Cai

5 Assessment of Regional Economic Integration Based on Relational Data: The Case of the Yangtze River Delta............... 79  
Tao Li, Jiaju Miao, and Yina Zhang

6 The Recognition of CAZ in Shanghai Based on Evaluated POI ....... 99  
Liu Liu and Zhuqing Liu

7 The Fear of Ebola: A Tale of Two Cities in China...................... 113  
Xinyue Ye, Shengwen Li, Xining Yang, Jay Lee, and Ling Wu

### Part II  POI for Exploring Urban Space Recognition

8 Identifying and Evaluating Urban Centers for the Whole China Using Open Data ................................................... 135  
Yaotian Ma and Ying Long
9 Geographic Big Data’s Applications in Retailing Business Market ................................. 157
Xin Chen, Fangcao Xu, Weili Wang, Yikang Du, and Miaoyi Li

10 Redefinition of the Social Space Based on Social Atlas Analysis: A Case Study of Dongguan, China ................................. 177
Yungang Liu and Haiyu Su

11 The Spatial and Temporal Evolution of Innovative Function of Science and Technology of Beijing Based on the Analysis of Enterprise Data .............................................................................. 193
Juan Li, Miaoyi Li, Anrong Dang, and Zhongwei Song

Part III Mobile Device Data for Integrating Land Use and Transportation Planning

12 Spatial Development Analysis of the Southern Area of Beijing Based on Multisource Data ........................................... 221
Wenqi Lin, Liang Ma, Qiao Chu, and Yong Gao

13 Spatio-temporal Dynamics of Population in Shanghai: A Case Study Based on Cell Phone Signaling Data ......................... 239
De Wang, Weijing Zhong, Zhenxuan Yin, Dongcan Xie, and Xiao Luo

14 Application of Big Data in the Study of Urban Spatial Structures ................................................................. 255
Yi Shi and Junyan Yang

15 Application of Cellular Data in Traffic Planning ......................... 273
Jianhui Lai, Yanyan Chen, Zijun Wu, Guang Yuan, and Miaoyi Li

16 Extract the Spatiotemporal Distribution of Transit Trips from Smart Card Transaction Data: A Comparison Between Shanghai and Singapore .............................................................. 297
Yi Zhu

Part IV Cyber Infrastructure for Urban Management

17 Towards Mobility Turn in Urban Planning: Smart Travel Planning Based on Space-Time Behavior in Beijing, China .......... 319
Yanwei Chai and Zifeng Chen

18 Traffic Big Data and Its Application in Road Traffic Performance Evaluation: Illustrated by the Case of Shenzhen .......... 339
Jiandong Qiu and Wei Chen

19 Understanding Job-Housing Relationship from Cell Phone Data Based on Hadoop ......................................................... 359
Miaoyi Li, Nawei Wu, Xiaoyong Tang, and Jia Lu
20 Quantifying Vitality of Dashilanr: An Experiment Conducting Automated Human-Centered Observation ........................................... 389
Boshu Cui and Mingrui Mao

21 Urban Wind Path Planning Based on Meteorological and Remote Sensing Data and GIS-Based Ventilation Analysis ........ 415
Qingming Zhan, Yuli Fan, Yinghui Xiao, Wanlu Ouyang, Yafei Yue, and Yuliang Lan

22 A Synthesized Urban Science in the Context of Big Data and Cyberinfrastructure ............................................................ 435
Xinyue Ye, Wenwen Li, and Qunying Huang

Index ......................................................................................................................... 449
Big Data Support of Urban Planning and Management
The Experience in China
Shen, Z.; Li, M. (Eds.)
2018, XXX, 456 p. 254 illus., 232 illus. in color.,
Hardcover
ISBN: 978-3-319-51928-9