

# Contents

|   |     |
|---|-----|
| Preface   | v   |
| List of Figures   | ix  |
| 1 Advances in Spatial Analysis<br>MANFRED M. FISCHER and ARTHUR GETIS   | 1   |
| <b>Part A Spatial Data Analysis</b>   |     |
| 2 Mixed Estimation and the Expansion Method: An Application<br>to the Spatial Modelling of the Aids Epidemic<br>EMILIO CASETTI  | 15  |
| 3 Exploratory Spatial Data Analysis Linking SpaceStat and ArcView<br>LUC ANSELIN and SHUMING BAO  | 35  |
| 4 Measuring Spatial Variations in Relationships with<br>Geographically Weighted Regression<br>A. STEWART FOTHERINGHAM, MARTIN CHARLTON and<br>CHRIS BRUNSDON  | 60  |
| 5 Regionalisation Tools for the Exploratory Spatial Analysis<br>of Health Data<br>STEVE WISE, ROBERT HAINING, and JINGSHENG MA  | 83  |
| 6 A Structural Time Series Approach to Forecasting the Space-Time<br>Incidence of Infectious Diseases: Post-War Measles Elimination<br>Programmes in the United States and Iceland<br>J.D. LOGAN and A.D. CLIFF | 101 |
| 7 Estimating the Impact of Preventative Action on the Space-Time<br>Incidence of HIV/AIDS<br>RICHARD THOMAS and FIONA SMYTH   | 128 |
| <b>Part B Behavioural Modelling</b>   |     |
| 8 Longitudinal Approaches to Analyzing Migration Behaviour<br>in the Context of Personal Histories<br>JOHN ODLAND   | 149 |

|   |   |            |
|---|---|------------|
| <b>9</b>                                    | <b>Computational Process Modelling of Disaggregate Travel Behaviour</b>                           | <b>171</b> |
|   | MEI-PO KWAN and REGINALD G. GOLLEDGE  |            |
| <b>10</b>                                   | <b>Modelling Non-Work Destination Choices with Choice Sets Defined by Travel-Time Constraints</b> | <b>186</b> |
|   | JEAN-CLAUDE THILL and JOEL L. HOROWITZ  |            |
| <b>11</b>                                   | <b>Space-Time Consumer Modelling, Store Wars and Retail Trading Hour Policy in Australia</b>      | <b>209</b> |
|   | ROBERT G. V. BAKER  |            |
| <b>12</b>                                   | <b>A Multi-Objective Model for Developing Retail Location Strategies in a DSS Environment</b>     | <b>236</b> |
|   | THEO A. ARENTZE, ALOYS W. J. BORGERS, and HARRY J.P. TIMMERMANS                                   |            |
| <b>13</b>                                   | <b>Recent Developments in the Modelling of Strategy Reformulation</b>                             | <b>253</b> |
|   | JAMES O. HUFF and ANNE S. HUFF  |            |
| <b>14</b>                                   | <b>Some Implications of Behaviour in Agricultural Markets</b>                                     | <b>272</b> |
|   | GORDON F. MULLIGAN  |            |
| <br><b>Part C CI-based Spatial Analysis</b> |   |            |
| <b>15</b>                                   | <b>Neurocomputing for Earth Observation - Recent Developments and Future Challenges</b>           | <b>289</b> |
|   | GRAEME G. WILKINSON   |            |
| <b>16</b>                                   | <b>Fuzzy ARTMAP - A Neural Classifier for Multispectral Image Classification</b>                  | <b>306</b> |
|   | SUCHARITA GOPAL and MANFRED M. FISCHER  |            |
| <b>17</b>                                   | <b>Feedforward Neural Network Models for Spatial Data Classification and Rule Learning</b>        | <b>336</b> |
|   | YEE LEUNG   |            |
| <b>18</b>                                   | <b>Bulding Fuzzy Spatial Interaction Models</b>   | <b>360</b> |
|   | STAN OPENSHAW   |            |
| <b>19</b>                                   | <b>Epilogue</b>   | <b>384</b> |
|   | MANFRED M. FISCHER and ARTHUR GETIS   |            |
|   | <b>Bibliography</b>   | <b>387</b> |
|   | <b>Author Index</b>   | <b>417</b> |
|   | <b>Subject Index</b>  | <b>427</b> |
|   | <b>Contributors</b>   | <b>431</b> |