

# Contents

<i>Contributors</i>	vii
<i>Acknowledgements</i>	ix
1 GIS and spatial analysis: introduction and overview <i>Peter A. Rogerson and A. Stewart Fotheringham</i>	1
<b>PART I INTEGRATING GIS AND SPATIAL ANALYSIS: AN OVERVIEW OF THE ISSUES</b>	11
2 A review of statistical spatial analysis in geographical information systems <i>Trevor C. Bailey</i>	13
3 Designing spatial data analysis modules for geographical information systems <i>Robert Haining</i>	45
4 Spatial analysis and GIS <i>Morton E. O'Kelly</i>	65
<b>PART II METHODS OF SPATIAL ANALYSIS AND LINKAGES TO GIS</b>	81
5 Two exploratory space-time-attribute pattern analysers relevant to GIS <i>Stan Openshaw</i>	83
6 Spatial dependence and heterogeneity and proximal databases <i>Arthur Getis</i>	105
7 Areal interpolation and types of data <i>Robin Flowerdew and Mick Green</i>	121
8 Spatial point process modelling in a GIS environment <i>Anthony Gatrell and Barry Rowlingson</i>	147
9 Object oriented spatial analysis <i>Bruce A. Ralston</i>	165
<b>PART III GIS AND SPATIAL ANALYSIS: APPLICATIONS</b>	187
10 Urban analysis in a GIS environment: population density modelling using ARC/INFO <i>Michael Batty and Yichun Xie</i>	189

- 11 Optimization modelling in a GIS framework:  
the problem of political redistricting 221  
*Bill Macmillan and T. Pierce*
- 12 A surface model approach to the representation of  
population-related social indicators 247  
*Ian Bracken*
- 13 The council tax for Great Britain: a GIS-based  
sensitivity analysis of capital valuations 261  
*Paul Longley, Gary Higgs and David Martin*

*Index*

277