

'Xiao's book is a must-have for any GIS programmers, from beginners to professionals. Its sample programs in Python provide a rich library for key GIS algorithms.'

Fahui Wang, James J Parsons Professor and Chair, Department of Geography and Anthropology, Louisiana State University

'This is a welcome book, which covers the major geographical algorithms for vector and point-based analyses, along with network travel analysis and optimal solution searches, in practical detail. Its concentration on applied Python examples is timely, and it is sure to be the go-to handbook for anyone wanting to build from-the-ground-up GIS functions into Python software.'

Andrew Evans, Senior Lecturer in Geocomputation and GIS, University of Leeds

Geographic information systems (GIS) have become increasingly important in helping us understand complex social, economic, and natural dynamics where spatial components play a key role. The critical algorithms used in GIS, however, are notoriously difficult to both teach and understand, in part due to the lack of a coherent representation. *GIS Algorithms* attempts to address this problem by combining rigorous formal language with example case studies and student exercises.

Using Python code throughout, Xiao breaks the subject down into three fundamental areas:

- Geometric Algorithms
- Spatial Indexing
- Spatial Analysis and Modeling

With its comprehensive coverage of the many algorithms involved, *GIS Algorithms* is a key new textbook in this complex and critical area of geography.

Ningchuan Xiao is Associate Professor of Geography at the Ohio State University.



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Contents

About the Author	x
Preface	xi
1 Introduction	1
1.1 Computational concerns for algorithms	2
1.2 Coding	6
1.3 How to use this book	7
I GEOMETRIC ALGORITHMS	9
2 Basic Geometric Operations	11
2.1 Point	11
2.2 Distance between two points	13
2.3 Distance from a point to a line	15
2.4 Polygon centroid and area	18
2.5 Determining the position of a point with respect to a line	20
2.6 Intersection of two line segments	22
2.7 Point-in-polygon operation	26
2.7.1 Even-odd algorithm	27
2.7.2 Winding number algorithm	30
2.8 Map projections	33
2.9 Notes	46
2.10 Exercises	47
3 Polygon Overlay	49
3.1 Line segment intersections	49
3.2 Overlay	58
3.3 Notes	66
3.4 Exercises	67
II SPATIAL INDEXING	69
4 Indexing	71
4.1 Exercises	76

5	<i>k</i>-D Trees	77
5.1	Point <i>k</i> -D trees	77
5.1.1	Orthogonal range query	82
5.1.2	Circular range query	84
5.1.3	Nearest neighbor query	85
5.2	Point region <i>k</i> -D trees	87
5.3	Testing <i>k</i> -D trees	93
5.4	Notes	97
5.5	Exercises	98
6	Quadrees	99
6.1	Region quadrees	99
6.2	Point quadrees	105
6.3	Notes	110
6.4	Exercises	111
7	Indexing Lines and Polygons	112
7.1	Polygonal map quadrees	112
7.1.1	PM1 quadrees	116
7.1.2	PM2 quadrees	122
7.1.3	PM3 quadrees	125
7.2	R-trees	126
7.3	Notes	136
7.4	Exercises	136
III	SPATIAL ANALYSIS AND MODELING	137
8	Interpolation	139
8.1	Inverse distance weighted interpolation	141
8.2	Kriging	146
8.2.1	Semivariance	147
8.2.2	Modeling semivariance	150
8.2.3	Ordinary kriging	156
8.2.4	Simple kriging	162
8.3	Using interpolation methods	165
8.4	Midpoint displacement	170
8.5	Notes	174
8.6	Exercises	176
9	Spatial Pattern and Analysis	177
9.1	Point pattern analysis	178
9.1.1	Nearest neighbor analysis	178
9.1.2	Ripley's <i>K</i> -function	185
9.2	Spatial autocorrelation	191
9.3	Clustering	199
9.4	Landscape ecology metrics	202
9.5	Notes	208
9.6	Exercises	209

10 Network Analysis	211
10.1 Network traversals	214
10.1.1 Breadth-first traversal	214
10.1.2 Depth-first traversal	216
10.2 Single source shortest path	217
10.3 All pair shortest paths	222
10.4 Notes	225
10.5 Exercises	226
11 Spatial Optimization	228
11.1 1-center location problem	230
11.2 Location problems	244
11.3 Notes	248
11.4 Exercises	249
12 Heuristic Search Algorithms	251
12.1 Greedy algorithms	251
12.2 Vertex exchange algorithm	253
12.3 Simulated annealing	261
12.4 Notes	273
12.5 Exercises	274
Postscript	275
Appendix	
A Python: A Primer	277
A.1 List comprehension	280
A.2 Functions, modules, and recursive functions	282
A.3 Lambda functions and sorting	283
A.4 NumPy and Matplotlib	284
A.5 Classes	288
B GDAL/OGR and PySAL	291
B.1 OGR	292
B.1.1 Attributes	293
B.1.2 Geometry and coordinates	293
B.1.3 Projecting points	294
B.1.4 Projecting and writing geospatial data	295
B.1.5 Adjacency matrix	298
B.2 GDAL	300
B.3 PySAL	301
C Code List	303
References	307
Index	314