

# *Spatial Databases*

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A TOUR

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*Shashi Shekhar • Sanjay Chawla*





















































































































































































































































































































































































































































































































































































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"It is more up-to-date and provides a single reference for the topic, which otherwise gets dispersed in other books and papers. It provides a more detailed coverage of the basic issues in Spatial Database systems."

—Alia I. Abelmoty, University of Glamorgan, Wales, UK

"It covers the entire field, from representation through query to analysis, in a style that is clear, logical, and rigorous. Especially welcome is the chapter on data mining."

—Michael F. Goodchild, NCGIA and Dept. of Geography, University of California, Santa Barbara

"This volume, by surveying GIS and Database topics, allows it to be a stand-alone reference. There is really nothing else on the market, and it is a valuable and important area. It follows a good progression of topics and builds on previous chapters. Good coverage on indexing: good examples for querying."

—Fred Petry, Tulane University

"This book was extremely valuable in understanding the state of the art in spatial databases due to emphasis on industry standard OGIS instead of on individual products."

—Siva Ravada, Manager, Spatial Data Products Division, Oracle Corporation

This inter-disciplinary comprehensive text shows how to manage spatial data in GIS, CAD, and multimedia systems and their application domains. This book helps readers master various stages of traditional spatial database design and implementation, introducing conceptual models (e.g. pictogram-enhanced ERD), explaining query languages (e.g. OGIS, SQL3), and finally describing efficient implementations using query optimization algorithms as well as spatial storage and indexing methods (e.g. R-trees). For students or professionals, this book balances cutting-edge research and practice to provide many firsts.

### OUTSTANDING FEATURES

- Comprehensive yet concise overview of Spatial Databases for students and practitioners.
- Self-contained treatment without assuming pre-requisite knowledge of GIS or Databases.
- Extensive use of industry standards, such as OGIS spatial data types and operations.
- Complete coverage of spatial networks including modeling, querying and storage methods.
- Detailed discussion of issues related to Spatial Data Mining.
- Balance between cutting-edge research and commercial trends.
- Variety of exercises at the end of each chapter.
- Easy-to-understand examples from common knowledge application-domains.

**Shashi Shekhar**, an authority on spatial databases, is a professor and the head of the Spatial Database Research Group in the Department of Computer Science at the University of Minnesota. Shashi has published numerous articles and has advised many organizations on spatial database issues. He holds a Ph.D. degree in Computer Science from the University of California, Berkeley. **Sanjay Chawla** is a Senior Technical Instructor with Vignette Corporation in Waltham, Massachusetts. He holds a Ph.D. degree from the University of Tennessee.

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