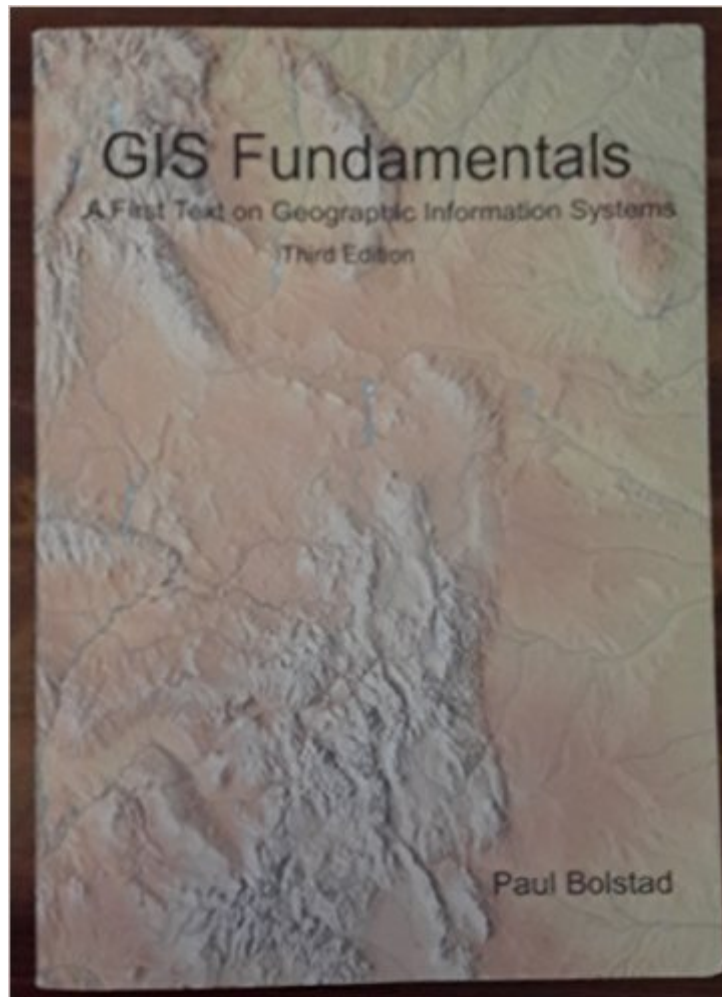# GIS Fundamentals: A First Text On Geographic Information Systems, 3rd Edition

Synopsis

620 pp / Softcover Geographic Information Systems (GIS) are computer-based tools for the entry, maintenance, and analysis of spatially-referenced data. GIS are critical to the effective management of constructed and natural resources, and they have been applied in science, business, education, and government to improve our lives. This book provides a thorough introduction to the theory and application of GIS. The book is written for use as a textbook in an introductory course at the university level. It seeks to balance theoretical and applied material, so that students may apply knowledge of GIS in the solution of real-world problems. Topics include an introduction to GIS, spatial data models, map projections and coordinate systems, data entry, aerial photographs and satellite images, GPS, digital data, relational and other databases, vector and raster spatial analyses, terrain modeling, interpolation, cartographic modeling, metadata, standards, accuracy assessments, and a description of future trends.

Book Information

Paperback: 620 pages

Publisher: Eider Press; Third Edition edition (June 30, 2007)

Language: English

ISBN-10: 0971764727

ISBN-13: 978-0971764729

Product Dimensions: 9.9 x 6.9 x 1.6 inches

Shipping Weight: 2.8 pounds

Average Customer Review: 3.2 out of 5 stars See all reviews (15 customer reviews)

Best Sellers Rank: #114,758 in Books (See Top 100 in Books)   #28 in Books > Science & Math > Earth Sciences > Geography > Information Systems   #217 in Books > Textbooks > Science & Mathematics > Earth Sciences

Customer Reviews

I've been a GIS professional for > 12 years, and I don't think there is a better book if you want to know what you are actually doing in GIS operations, particularly at a cost that appears to approximately half or less than alternative basic books. I use ArcGIS every day, and ArcGIS/ESRI books are fine for learning the software. I've found these kind of books useful, but only for telling me how to do things, rather than what I should do, or to troubleshoot problems or understand data I get from various sources. The Arc books have a short shelf life, because the buttons to push and menus to access change with each version of the software (anyone living through the 3.3 to 8.x to

9.x to 10.x knows what I'm talking about), and ArcGIS focused books aren't too useful for the half the market that uses different softwares (QGIS, MapWindow, Manifold, IDRISI, etc. users out there). More importantly, most of those books don't tell you why you're doing something, or how to choose among the various method you might apply.Bolstad's GIS Fundamentals book is a pretty complete summary of all the important background material you need to use GIS intelligently, e.g., to figure out why your state plane data don't line up, or the difference between an international foot and a survey foot, or when you should use a convex hull vs. a kernel-based influence area. Sure it is a basic book, and you'll have to follow the references to really understand some of the more arcane nuances of GIS, but this book provides a solid foundation. There are chapters on basic data structures, map projections, GPS, images, and digital data which are quite helpful, and a good description of tables and tabular data queries, with great chapters on the basics of vector operations, raster, and terrain analysis.

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