4th Edition
Cartography Visualization of Geospatial Data, Fourth Edition By Menno-Jan Kraak; Ferjan Ormeling
ISBN 9781138613959
Published July 29, 2020 by CRC Press
261 Pages 220 Color Illustrations

Book Description

This Fourth Edition of Cartography: Visualization of Geospatial Data serves as an excellent introduction to general cartographic principles. It is an examination of the best ways to optimize the visualization and use of spatiotemporal data. Fully revised, it incorporates all the changes and new developments in the world of maps, such as OpenStreetMap and GPS (Global Positioning System) based crowdsourcing, and the use of new web mapping technology and adds new case studies and examples. Now printed in colour throughout, this edition provides students with the knowledge and skills needed to read and understand maps and mapping changes and offers professional cartographers an updated reference with the latest developments in cartography.

Written by the leading scholars in cartography, this work is a comprehensive resource, perfect for senior undergraduate and graduate students taking courses in GIS (geographic information system) and cartography.
New in This Edition:

- Provides an excellent introduction to general cartographic visualization principles through full-colour figures and images
- Addresses significant changes in data sources, technologies and methodologies, including the movement towards more open data sources and systems for mapping
- Includes new case studies and new examples for illustrating current trends in mapping
- Provides a societal and institutional framework in which future mapmakers are likely to operate, based on UN global development sustainability goals

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9. Maps at Work: Presenting and Using Geospatial Data in Maps and Atlases
10. Maps at Work: Analysis and Geovisualization
11. Cartography at Work: Maps as Decision Tools
Book Description

Over the past few decades the world has been organized through the growth and integration of geographic information systems (GIS) across public and private sector industries, agencies, and organizations. This has happened in a technological context that includes the widespread deployment of multiple digital mobile technologies, digital wireless communication networks, positioning, navigation and mapping services, and cloud-based computing, spawning new ways of imagining, creating, and consuming geospatial information and analytics.

GIS: An Introduction to Mapping Technologies is written with the detached voices of practitioner scholars who draw on a diverse set of experiences and education, with a shared view of GIS that is grounded in the analysis of scale-diverse contexts emphasizing cities and their social and environmental geographies. GIS is presented as a critical toolset that allows analysts to focus on urban social and environmental sustainability.
The book opens with chapters that explore foundational techniques of mapping, data acquisition and field data collection using GNSS, georeferencing, spatial analysis, thematic mapping, and data models. It explores web GIS and open source GIS making geospatial technology available to many who would not be able to access it otherwise. Also, the book covers in depth the integration of remote sensing into GIS, Health GIS, Digital Humanities GIS, and the increased use of GIS in diverse types of organizations. Active learning is emphasized with ArcGIS Desktop lab activities integrated into most of the chapters.

Written by experienced authors from the Department of Geography at DePaul University in Chicago, this textbook is a great introduction to GIS for a diverse range of undergraduates and graduate students, and professionals who are concerned with urbanization, economic justice, and environmental sustainability.

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The Routledge Handbook of Mapping and Cartography By; Alexander Kent; Peter Vujakovic
ISBN 9780367581046
Published June 29, 2020 by Routledge
594 Pages

Book Description

This new Handbook unites cartographic theory and praxis with the principles of cartographic design and their application. It offers a critical appraisal of the current state of the art, science, and technology of map-making in a convenient and well-illustrated guide that will appeal to an international and multi-disciplinary audience. No single-volume work in the field is comparable in terms of its accessibility, currency, and scope.

The Routledge Handbook of Mapping and Cartography draws on the wealth of new scholarship and practice in this emerging field, from the latest conceptual developments in mapping and advances in map-making technology to reflections on the role of maps in society. It brings together 43 engaging chapters on a diverse range of topics, including the history of cartography, map use and user issues, cartographic design, remote sensing, volunteered geographic information (VGI), and map art.
The title's expert contributions are drawn from an international base of influential academics and leading practitioners, with a view to informing theoretical development and best practice. This new volume will provide the reader with an exceptionally wide-ranging introduction to mapping and cartography and aim to inspire further engagement within this dynamic and exciting field.

*The Routledge Handbook of Mapping and Cartography* offers a unique reference point that will be of great interest and practical use to all map-makers and students of geographic information science, geography, cultural studies, and a range of related disciplines.
Historical Geography, GIScience and Textual Analysis Landscapes of Time and Place
Editors: Travis, Charles, Ludlow, Francis, Gyuris, Ferenc (Eds.)

- Integrates Historical Geography, GIScience, Geosciences and Textual Studies in a unique way
- Utilizes quantitative and qualitative approaches relevant to Science, Technology, Engineering, Maths and Arts & Humanities (STEAM) collaborations
- Contains many case studies in Historical Geography

This book illustrates how literature, history and geographical analysis complement and enrich each other’s disciplinary endeavors. The Hun-Lenox Globe, constructed in 1510, contains the Latin phrase 'Hic sunt dracones' ('Here be dragons'), warning sailors of the dangers of drifting into uncharted waters. Nearly half a millennium earlier, the practice of ‘earth-writing’ (geographia) emerged from the cloisters of the great library of Alexandria, as a discipline blending the twin pursuits of Strabo’s poetic impression of places, and Herodotus’ chronicles of events and cultures. Eratosthenes, a librarian at Alexandria, and the mathematician Ptolemy employed geometry as another language with which to pursue ‘earth-writing’. From this ancient, East Mediterranean fount, the streams of literary perception, historical record and geographical analysis (phenomenological and Euclidean) found confluence. The aim of this collection is to recover such means and seek the fount of such rich waters, by exploring relations between historical geography, geographic information science (GIS) / geoscience, and textual analysis. The book discusses and illustrates current case studies, trends and discourses in European, American and Asian spheres, where historical geography is practiced in concert with human and physical applications of
GIS (and the broader geosciences) and the analysis of text - broadly conceived as archival, literary, historical, cultural, climatic, scientific, digital, cinematic and media.

Time as a multi-scaled concept (again, broadly conceived) is the pivot around which the interdisciplinary contributions to this volume revolve. In The Landscape of Time (2002) the historian John Lewis Gaddis posits: "What if we were to think of history as a kind of mapping?" He links the ancient practice of mapmaking with the three-part conception of time (past, present, and future). Gaddis presents the practices of cartography and historical narrative as attempts to manage infinitely complex subjects by imposing abstract grids to frame the phenomena being examined—longitude and latitude to frame landscapes and, occidental and oriental temporal scales to frame timescapes. Gaddis contends that if the past is a landscape and history is the way we represent it, then it follows that pattern recognition constitutes a primary form of human perception, one that can be parsed empirically, statistically and phenomenologically. In turn, this volume reasons that literary, historical, cartographical, scientific, mathematical, and counterfactual narratives create their own spatio-temporal frames of reference. Confluences between the poetic and the positivistic; the empirical and the impressionistic; the epic and the episodic; and the chronologic and the chorologic, can be identified and studied by integrating practices in historical geography, GIScience / geoscience and textual analysis. As a result, new perceptions and insights, facilitating further avenues of scholarship into uncharted waters emerge. The various ways in which geographical, historical and textual perspectives are hermeneutically woven together in this volume illuminates the different methods with which to explore terrae incognitaes of knowledge beyond the shores of their own separate disciplinary islands.

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High Performance Computing for Geospatial Applications / Editors: Tang, Wenwu, Wang, Shaowen (Eds.)

- Fills the gap between the rapid development of High Performance Computing (HPC) approaches and their geospatial applications
- Presents applications of HPC in geospatial domains, including ecology, land change science, urban studies, spatial epidemiology, earth science, environmental science, transportation studies, and social science
- Uses several real-world examples to demonstrate how HPC can be used to collect, manage, and process geospatial big data

This volume fills a research gap between the rapid development of High Performance Computing (HPC) approaches and their geospatial applications. With a focus on geospatial applications, the book discusses in detail how researchers apply HPC to tackle their geospatial problems. Based on this focus, the book identifies the opportunities and challenges revolving around geospatial applications of HPC. Readers are introduced to the fundamentals of HPC, and will learn how HPC methods are applied in various specific areas of geospatial study.

The book begins by discussing theoretical aspects and methodological uses of HPC within a geospatial context, including parallel algorithms, geospatial data handling, spatial analysis and modeling, and cartography and geovisualization. Then, specific domain applications of HPC are addressed in the contexts of earth science, land use and land cover change, urban studies, transportation studies, and social science. The
book will be of interest to scientists and engineers who are interested in applying cutting-edge HPC technologies in their respective fields, as well as students and faculty engaged in geography, environmental science, social science, and computer science.

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  Armstrong, Marc P.
Discusses reflections on the history of geography from a global perspective
Extends literature on critical approaches to geography from non-Western traditions
Builds an original contribution to literature on internationalism and transnationalism

International scholarship is increasingly aware that the ‘geographical tradition’ is a contentious and contested field: while critical reflections on the imperial past of the discipline are still ongoing, new tendencies including de-colonial studies and geographies of internationalism are focusing on the progressive aspects of plural geographical traditions. This volume contains selected papers presented at two Symposia of the Commission on the History of Geography of the International Geographical Union within the 25th International Congress of History of Science and Technology which took place in Rio de Janeiro in July 2017.

The papers address processes of ‘decolonising’ and ‘internationalising’ science in the 19th and 20th century, with a special emphasis on geography. Internationalization, circulation and dissemination of geographical concepts and ideas are in the focus. The volume includes case studies on Latin America, tropical regions as well as Europe and Japan. There is also an emphasis on the history of international congresses and organizations and on the international circulation of knowledge.
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This book approaches geological, geomorphological and topographical mapping from the point in the workflow at which science-ready datasets are available. Though there have been many individual projects on dynamic maps and online GISs, in which coding and data processing are given precedence over cartographic principles, cartography is more than “just” processing and displaying spatial data. However, there are currently no textbooks on this rapidly changing field, and methods tend to be shared informally.

Addressing this gap in the literature, the respective chapters outline many topics pertaining to cartography and mapping such as the role and definition of planetary cartography and (vs?) Geographic Information Science; theoretical background and practical methodologies in geological mapping; science-ready versus public-ready products; a goal/procedure-focused practical manual of the most commonly used software in planetary mapping, which includes generic (ArcGIS and its extensions, JMARS) and specific tools (HiView, Cratertools etc.); extracting topographic information from images; thematic mapping: climate; geophysics; surface modeling; change detection; landing site selection; shared maps; dynamic maps on the web;
planetary GIS interfaces; crowdsourcing; crater counting techniques; irregular bodies; geological unit symbology; mapping center activities; and web services. All chapters were prepared by authors who have actually produced geological maps or GISs for NASA / the USGS, DLR, ESA or MIIGAIK. Taken together, they offer an excellent resource for all planetary scientists whose research depends on mapping, and for students of astrogeology.

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