Geographic Information Systems for Disaster Management
By (author) Brian Tomaszewski

Now in its second edition, Geographic Information Systems (GIS) for Disaster Management has been completely updated to take account of new developments in the field.

Using a hands-on approach grounded in relevant GIS and disaster management theory and practice, this textbook continues the tradition of the benchmark first edition, providing coverage of GIS fundamentals applied to disaster management. Real-life case studies demonstrate GIS concepts and their applicability to the full disaster management cycle. The learning-by-example approach help readers see how GIS for disaster management operates at local, state, national, and international scales through government, private sector, non-governmental organizations, and volunteer groups.

New in the Second Edition:

A Chapter on Allied Technologies include Remote Sending, Global Positioning Systems (GPS), Indoor Navigation and Unmanned Aerial Systems (UAS)
Thirteen new technical exercises that supplement theoretical and practical chapter discussions and fully reinforce concepts learned
Enhanced boxed text and other pedagogical features to give readers even more practical advice
Examination of new forms of world-wide disaster faced by society
Discussion of new commercial and open source GIS technology and techniques such as machine learning and internet of things.
New interviews with subject matter and industry experts on GIS for disaster management in the US and abroad
New career advice on getting a first job in the industry.

Learned yet accessible, Geographic Information Systems (GIS) for Disaster Management continues to be a valuable teaching tool for undergraduate and graduate instructors in the disaster management and GIS fields, as well as disaster management and humanitarian professionals.

Please visit http://gisfordisastermanagement.com to view supplemental material such as slides and hands-on exercise video walkthroughs. This companion website offers valuable hands-on experience applying concepts to practice.

- Fecha de publicación 28 Oct 2020
- Editorial Taylor & Francis Ltd
- Sello editorial CRC Press
- ISBN13 9781138489868
Information Fusion and Intelligent Geographic Information Systems: Computational and Algorithmic Advances (IF & IGIS’2019)

Edited by Vasily Popovich, Edited by Jean-Claude Thill, Edited by Manfred Schrenk, Edited by Christophe Claramunt

This book gathers the proceedings of the 9th International Symposium "Information Fusion and Intelligent Geographic Information Systems 2019" (IF&IGIS’2019), which was held in St. Petersburg, Russia from May 22 to 24, 2019. The goal of the symposium was to provide a forum for exchange among leading international scholars in the fields of spatial data, information integration and Intelligent Geographic Information Systems (IGIS). The symposium was an opportunity to discuss sound and effective lines of modeling in the fusion of spatial data and information within the broader scope of intelligent GIS.

The topics of the 2019 Symposium essentially fall into three broad categories of developments aimed at leveraging the power of spatial information, namely: artificial intelligence; algorithmic and computations processes; and data-informed simulation models. All papers collected here present compelling, cutting-edge research on cloud computing, deep learning, visual analytics, and large-scale optimization. They discuss information fusion and intelligent GIS research in the context of surface and sub-surface maritime activities, port asset management, land-based trip and travel planning, smart city and e-government, emergency management, and environmental
monitoring. Given its scope, the book will be of interest to students, researchers and professionals working in GIS, remote sensing, and cloud computing.

- Fecha de publicación 03 Jan 2020
- Editorial Springer
- ISBN13 9783030316075
Community Participation and Geographical Information Systems By William J. Craig, Trevor M. Harris, Daniel Weiner
ISBN 9780367578626
Published June 29, 2020 by CRC Press
410 Pages

Book Description

Have you ever considered how much effect information technology has on society throughout the world? Progress often places lower income and marginalized communities at a distinct disadvantage. Community Participation and Geographic Information Systems, however, offers a detailed look at numerous incidences around the world where communities have actually taken control of the technology and really used it to their advantage. This is presented in the form of case studies and models such as Philadelphia’s neighborhoods, the Atlanta Project, and neighborhood revitalization in Minneapolis, reflect on public participation in GIS concepts, best practices, constraints and opportunities.

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Introduction. PPGIS Case Studies - Inner City. PPGIS Futures.
Bringing producer and consumer debates together, Geographic Information: Value, Pricing, Production, and Consumption provides a coherent perspective on what have become emotional and territorial issues of IPR protection and liberation. This book addresses a range of issues relating to GI, from its definition, purpose, and use to how GI affects individuals, organizations, and governments. It examines business issues including pricing, exploitation, competition, and IPR in private, commercial, and public domain environments. It also introduces a detailed case study that shows how the GI collection and dissemination policies affect regional and global environmental monitoring programs.

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Book Description

State-of-the-art GIS spatial data management and analysis tools are revolutionizing the field of water resource engineering. Familiarity with these technologies is now a prerequisite for success in engineers’ and planners’ efforts to create a reliable infrastructure.

GIS in Water Resource Engineering presents a review of the concepts and applications of GIS in the various sub-fields of water resource engineering. After a summary review of analyses and database functions, the book addresses concepts and applications in the following areas:

- Surface Water Hydrology
- Groundwater Hydrology
- Water Supply and Irrigation systems
- Wastewater and Stormwater Systems
- Floodplain Management
- Water Quality
- Water Resource Monitoring and Forecasting
- River Basin Planning and Management
The book develops a general understanding of the nature of GIS and how it is used to create and analyze geographic data. The author first introduces primary field data collection methods and describes procedures for interpretation and analysis. The second portion of the book focuses on the linkage of GIS data with water resource analysis and management models. Applications are presented with descriptions of GIS database development, analysis background theory, and model integration with GIS.

The profound impact of GIS systems on water resources engineering continues to grow. *GIS in Water Resource Engineering* arms engineers and planners with an arsenal of tools to assist in the creation of a reliable, environmentally sensitive, infrastructure.

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Modelling Urban Development with Geographical Information Systems and Cellular Automata by Yan Liu
ISBN 97803675777438
Published June 30, 2020 by CRC Press

Book Description

Urban development and migration from rural to urban areas are impacting prime agricultural land and natural landscapes, particularly in the less developed countries. These phenomena will persist and require serious study by those monitoring global environmental change. To address this need, various models have been devised to analyze urbanization and the physical, socioeconomic, and institutional factors impacting urban development.

The most promising and rapidly developing of these paradigms take advantage of new Geographical Information System (GIS) technology. Modelling Urban Development with Geographical Information Systems and Cellular Automata presents one such cutting-edge model that is more than just predictive. It describes how the model simulates the urbanization process, and it provides theoretical context to promote understanding. Starting with a practical overview of the modelling techniques used in urban development research, the author focuses on the cellular automata model and its greatest strength – the incorporation of fuzzy set and fuzzy logic approaches through which urban development can be viewed as a spatially and temporally continuous process.
Real-Life Application to Develop Future Planning Methods

The text describes a landmark study underway, in which the fuzzy constrained cellular automata model has been implemented in a GIS environment to simulate urban development in Sydney, Australia. Featuring a survey of associated research and a geographical database for the Sydney simulation, this book answers many general "what if" questions for urban planners and details a new approach that they can adapt to their own testing and evaluation needs. This modeling method will provide researchers and planners with the means to not just predict population trends, but to better prepare for their consequences.

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Urban Development Modelling and Cellular Automata. Simulating Sydney’s Urban Development Using the Cellular Automation and Incorporating Fuzzy Set Approaches in a GIS.
Socio-Economic Applications of Geographic Information Science By David Kidner, Gary Higgs, Sean White
ISBN 9780367578565
Published June 29, 2020 by CRC Press

Book Description

To date, no one volume in the Innovations in GIS series has been given over to solely highlighting the use of up-to-date GIS-based techniques in a range of socio-economic applications. This monograph redresses this gap. The book begins with a short introductory chapter on the fundamental principles of GIS, followed by an examination of recent innovative research in the areas of crime applications, planning, urban and rural policy, and finally the use of GIS to examine various aspects of socio-economic policy.

Socio-Economic Applications of Geographic Information Science is the ninth book in the series, based on contributions at the 2001 GIS Research UK conference, which continues to include innovative papers that are at the cutting edge of GIS research in the UK and beyond, and maintains a valued position in the conference calendar.

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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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Spatial dimensions need to be properly captured if modeling and engineering techniques are to be successfully applied in addressing environmental problems. The links between the geographical information systems (GIS) that capture this data, simulation modeling, and engineering offer tremendous possibilities for building versatile support systems for managing the environment. GIS, Environmental Modeling and Engineering focuses on using GIS and external models to solve real environmental problems, promoting the critical thinking needed for the effective applications of these systems and their analytical outputs.

Divided into three major sections, this textbook first concentrates on defining GIS, identifying how data is structured, and explaining common functionality. The text examines GIS from a technological perspective, exploring the evolution of its scientific basis and its synergies with other technologies within a geocomputational paradigm. The next section explores modeling from a neutral scientific perspective in its role of simulating phenomena, as well as from a more specific perspective in its role within environmental science and engineering. The third and largest section looks at how GIS and simulation modeling are joined. It provides case studies and covers issues such as interoperability, data quality, model validity, space-time dynamics, and decision-support systems.
This volume provides seniors and postgraduate students with a structured, coherent text that goes beyond introductory subject matter by enabling readers to think critically about the data acquisition process and the results they get from the technology.

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5th Edition
The Geography of Transport Systems By Jean-Paul Rodrigue
Copyright Year 2020
ISBN 9780367364632
Published May 28, 2020 by Routledge

Book Description

This expanded and revised fifth edition of The Geography of Transport Systems provides a comprehensive and accessible introduction to the field with a broad overview of its concepts, methods and areas of application. Aimed mainly at an undergraduate audience, it provides an overview of the spatial aspects of transportation and focuses on how the mobility of passengers and freight is linked with geography.

The book is divided into ten chapters, each covering a specific conceptual dimension, including networks, modes, terminals, freight transportation, urban transportation and environmental impacts, and updated with the latest information available. The fifth edition offer new and updated material on information technologies and mobility, e-commerce, transport and the economy, mobility and society, supply chains, security, pandemics, energy and the environment and climate change. With over 140 updated figures and maps, The Geography of Transport Systems presents transportation systems at different scales ranging from global to local.
This volume is an essential resource for undergraduates studying transport geography, as well as those interested in economic and urban geography, transport planning and engineering. A companion web site, which contains additional material such as photographs, maps, figures and PowerPoint presentations, has been developed for the book and can be found here: https://transportgeography.org/

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1. Transportation and Geography
2. Transportation and the Spatial Structure
3. Transportation, Economy and Society
4. Transport, Energy and Environment
5. Transportation Modes
6. Transportation Terminals
7. Trade, Logistics and Freight Distribution
8. Urban Transportation
9. Transport Planning and Policy
10. Methods in Transport Geography
11. Conclusion: Challenges for Transport Geography
Innovations In GIS By M. F. Worboys
ISBN 9780367579838
Published June 29, 2020 by CRC Press

**Book Description**

This book aims to offer research at the cutting edge. The individual chapters are fully revised and updated versions of contributions to the first focused scientific symposium on research in geographic information systems GISRUK. The book provides the reader with a comprehensive outline of the full range and diversity of innovative research programmes in the science of GIS. Chapters address key issues such as computational support; spatial analysis and error; and application and implementation.

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Part 1 Computational support for GIS: on the integration of database systems and computational support for high-level modelling of spatio-temporal phenomena, Terence Smith; computer assisted tools for cartographic data capture, Tim Mayo; an automatic generalization system for large-scale topographic maps, Gary Robinson et al. Part 2 Spatial analysis and error: a concepts-rich approach to spatial analysis, theory generation and scientific discovery in GIS using massively parallel computing, Stan Openshaw; visualizing spatial association in area-value data, Jason Dykes; error simulation in vector GIS using neural computing methods, Chris Brunsdon and Stan Openshaw. Part 3 Applications of GIS: information sharing and the implementation of
GIS - some key issues, Ian Masser and Heather Campbell; modelling environmental systems with GIS - theoretical barriers to progress, David Livingstone and Jonathan Raper; coupling of process-based vegetation models to GIS and knowledge-based systems with reference to vegetation change, David Miller.
Spatial Information for Land Use Management

By Michael J. Hill, Richard J. Aspinall
ISBN 9780367578909
Published June 29, 2020 by CRC Press

Book Description

Geographic Information Systems (GIS), Remote Sensing, and environmental modelling are increasingly being used to address land use and land use management issues although much of the development in these applications is based in specific case studies that are not readily accessible to a wide audience. Spatial Information for Land Use Management is designed as a reference that provides a description and discussion of the issues involved in the use of spatial information for land use management. The chapters include detailed examples of the use of spatial information in land use management. The book begins with the technological methods, examines applications in a variety of environments, and describes the ways in which issues of scale, uncertainty, linkage of models and GIS, and problem solution have been addressed.

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