

Web Gis Principles And Applications

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ArcGIS Web Development - Rene Rubalcava 2014-11-11

Summary **ArcGIS Web Development** is an example-rich tutorial designed to teach developers to use the **ArcGIS JavaScript API** to build custom GIS web applications. About the Technology Now you can unshackle your GIS application from a workstation! Using the **ArcGIS JavaScript API**, developers can build mobile and web-based maps and applications driven by **ArcGIS** data and functionality. Experienced **ArcGIS** developers will find that the familiar development environment provides a smooth transition to the web. Web developers new to GIS will be pleased by how easily they can apply their existing skills to GIS applications. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Book **ArcGIS Web Development** is an example-rich guide that teaches you to use the **ArcGIS JavaScript API** to build custom GIS web applications. The book begins with easy-to-follow examples that introduce readers to the **ArcGIS JavaScript API** and show how you can apply simple customizations. As the book progresses, you'll explore a full-scale, web-mapping application. By the end you will be able to build web apps that have features you'd ordinarily expect to find only in dedicated GIS applications. Written for web developers familiar with JavaScript and basic GIS concepts. Experience with **ArcGIS** is helpful, but not necessary. What's Inside Build web-based GIS applications Customize the **ArcGIS Javascript API** tools Bring **ArcGIS** data to the web Create secure logins for mobile app users About the Author Rene Rubalcava is the cofounder of SmartGeoTech, Inc., a GIS development company specializing in Esri technologies. Table of Contents PART 1 ARCGIS JAVASCRIPT FOUNDATION GIS as a tool Introducing core API concepts Working with the REST API PART 2 SAMPLE USE CASE Building an application Developing a custom data-collection application Building a desktop browser application Advanced techniques APPENDICES Setting up your environment Dojo basics Configuring a proxy

Encyclopedia of GIS - Shashi Shekhar 2007-12-12

The **Encyclopedia of GIS** provides a comprehensive and authoritative guide, contributed by experts and peer-reviewed for accuracy, and alphabetically arranged for convenient access. The entries explain key software and processes used by geographers and computational

scientists. Major overviews are provided for nearly 200 topics:

Geoinformatics, Spatial Cognition, and Location-Based Services and more.

Shorter entries define specific terms and concepts. The reference will be published as a print volume with abundant black and white art, and simultaneously as an XML online reference with hyperlinked citations, cross-references, four-color art, links to web-based maps, and other interactive features.

Spatial Decision Support Systems - Ramanathan Sugumaran 2010-11-15

Although interest in **Spatial Decision Support Systems (SDSS)** continues to grow rapidly in a wide range of disciplines, students, planners, managers, and the research community have lacked a book that covers the fundamentals of **SDSS** along with the advanced design concepts required for building **SDSS**. Filling this need, **Spatial Decision Support Systems: Principles and Practices** provides a comprehensive examination of the various aspects of **SDSS** evolution, components, architecture, and implementation. It integrates research from a variety of disciplines, including the geosciences, to supply a complete overview of **SDSS** technologies and their application from an interdisciplinary perspective. This groundbreaking reference provides thorough coverage of the roots of **SDSS**. It explains the core principles of **SDSS**, how to use them in various decision making contexts, and how to design and develop them using readily available enabling technologies and commercial tools. The book consists of four major parts, each addressing different topic areas in **SDSS**: Presents an introduction to **SDSS** and the evolution of **SDSS** Covers the essential and optional components of **SDSS** Focuses on the design and implementation of **SDSS** Reviews **SDSS** applications from various domains and disciplines—investigating current challenges and future directions The text includes numerous detailed case studies, example applications, and methods for tailoring **SDSS** to your work environment. It also integrates sample code segments throughout. Addressing the technical and organizational challenges that affect the success or failure of **SDSS**, the book concludes by considering future directions of this rapidly emerging field of study.

Thinking about GIS - Roger F. Tomlinson 2007

Targeting those charged with launching or implementing a geographic

information system for their organization, this book details a practical method for planning a GIS proven successful in public and private sector organizations.

Physical Principles of Remote Sensing - W. G. Rees 2013

A quantitative yet accessible introduction to remote sensing techniques, this new edition covers a broad spectrum of Earth science applications.

Geographic Information Systems for Geoscientists - Graeme F. Bonham-Carter 2014-05-18

Geographic Information Systems for Geoscientists: Modelling with GIS provides an introduction to the ideas and practice of GIS to students and professionals from a variety of geoscience backgrounds. The emphasis in the book is to show how spatial data from various sources (principally paper maps, digital images and tabular data from point samples) can be captured in a GIS database, manipulated, and transformed to extract particular features in the data, and combined together to produce new derived maps, that are useful for decision-making and for understanding spatial interrelationship. The book begins by defining the meaning, purpose, and functions of GIS. It then illustrates a typical GIS application. Subsequent chapters discuss methods for organizing spatial data in a GIS; data input and data visualization; transformation of spatial data from one data structure to another; and the combination, analysis, and modeling of maps in both raster and vector formats. This book is intended as both a textbook for a course on GIS, and also for those professional geoscientists who wish to understand something about the subject. Readers with a mathematical bent will get more out of the later chapters, but relatively non-numerate individuals will understand the general purpose and approach, and will be able to apply methods of map modeling to clearly-defined problems.

Basic Concept of Remote Sensing, GPS, and GIS - Shivam Pandey

The study of Remote Sensing, Geographic Information Systems (GIS), and Global Positioning System (GPS) applications is enlightening, challenging, and very interesting. This book is created as a guide to students who are interested to know the basic principles and applications of Remote Sensing and GIS in the geosciences field. GIS applications are now considered an important course in the curriculum of undergraduate geoscience, environmental, and in some fields of engineering programs.

Introduction to GIS Programming and Fundamentals with Python and ArcGIS® - Chaowei Yang 2017-04-25

Combining GIS concepts and fundamental spatial thinking methodology with real programming examples, this book introduces popular Python-based tools and their application to solving real-world problems. It elucidates the programming constructs of Python with its high-level toolkits and demonstrates its integration with ArcGIS Theory. Filled with hands-on computer exercises in a logical learning workflow this book promotes increased interactivity between instructors and students while also benefiting professionals in the field with vital knowledge to sharpen their

programming skills. Readers receive expert guidance on modules, package management, and handling shapefile formats needed to build their own mini-GIS. Comprehensive and engaging commentary, robust contents, accompanying datasets, and classroom-tested exercises are all housed here to permit users to become competitive in the GIS/IT job market and industry.

Essentials of Geographic Information Systems - Michael Edward Shin 2018

Web Cartography - Jan-Menno Kraak 2003-09-02

Maps and atlases are created as soon as information on our geography has been clarified. They are used to find directions or to get insight into spatial relations. They are produced and used both on paper as well as on-screen. The Web is the new medium for spreading and using maps.

This book explains the benefits of this medium from the perspective

Polarimetric Synthetic Aperture Radar - Irena Hajnsek 2021-03-24

This open access book focuses on the practical application of electromagnetic polarimetry principles in Earth remote sensing with an educational purpose. In the last decade, the operations from fully polarimetric synthetic aperture radar such as the Japanese ALOS/PaISAR, the Canadian Radarsat-2 and the German TerraSAR-X and their easy data access for scientific use have developed further the research and data applications at L,C and X band. As a consequence, the wider distribution of polarimetric data sets across the remote sensing community boosted activity and development in polarimetric SAR applications, also in view of future missions. Numerous experiments with real data from spaceborne platforms are shown, with the aim of giving an up-to-date and complete treatment of the unique benefits of fully polarimetric synthetic aperture radar data in five different domains: forest, agriculture, cryosphere, urban and oceans.

Elements of Photogrammetry with Application in GIS, Fourth Edition - Paul Wolf 2013-10-22

The definitive guide to photogrammetry--fully updated Thoroughly revised to cover the latest technological advances in the field, *Elements of Photogrammetry with Applications in GIS, Fourth Edition*, provides complete details on the foundational principles of photogrammetry as well as important advanced concepts. Significant changes in the instruments and procedures used in modern photogrammetry, including laser scanning, are discussed. Example problems clarify computational procedures and extensive photographs and diagrams illustrate the material presented in this comprehensive resource. Coverage includes: Principles of photography and imaging Cameras and other imaging devices Image measurements and refinements Object space coordinate systems Vertical photographs Stereoscopic viewing Stereoscopic parallax Stereoscopic plotting instruments Laser scanning systems Elementary methods of planimetric mapping for GIS Titled and oblique photographs Introduction to analytical photogrammetry Topographic mapping and spatial data

collection Fundamental principles of digital image processing

Photogrammetric applications in GIS Control for aerial photogrammetry

Aerotriangulation Project planning Terrestrial and close-range

photogrammetry

An Introduction to Contemporary Remote Sensing - Qihao Weng

2011-11-18

A PRACTICAL, FULL-COLOR GUIDE TO REMOTE SENSING Written by

an internationally renowned expert in the field, An Introduction to

Contemporary Remote Sensing introduces the latest developments in

remote sensing and imaging science. This book covers basic principles

and discusses essential technologies, such as aerial photography, radar,

Lidar (light detection and ranging), photogrammetry, satellites, thermal

radiation, and much more. Full-color images illustrate the concepts

presented, and review questions at the end of each chapter help reinforce

learning. This detailed resource provides the solid foundation in remote

sensing required for developing diverse geospatial applications. Coverage

includes: Geographic information system (GIS) Global positioning system

(GPS), mobile mapping, and Google Earth Electromagnetic radiation

principles Characteristics of remotely sensed data Spatial, spectral,

radiometric, and temporal resolution Aerial photo interpretation

Photogrammetry Remote sensors Earth observation satellites Digital image

analysis Thermal remote sensing Active remote sensing

Geo-Business - James B. Pick 2008-01-02

Exploit the advantages of Geographic Information Systems in your

business Once the domain of cartographers and other specialists,

Geographic Information Systems (GIS) are increasingly being employed by

the business community. Location-based services, supply chain

management, management of field-distributed equipment, geographical

marketing and promotion, and the spatial web are some of the current

business applications which make use of GIS principles. Written

specifically for the businessperson, *Geo-Business: GIS in the Digital*

Organization is the first book to provide comprehensive coverage of GIS

applications in the business and organizational environment. Going beyond

a strictly geographical focus, this book sets GIS in the context of business

information systems and other business sub-disciplines such as logistics,

marketing, finance, and strategic management. It presents from an

organizational perspective the advantages of spatially enabling existing

enterprise systems and illustrates how GIS is applied in the real world

through rigorous case study analyses of twenty companies, including

Baystate Health, Chico's, Kaiser Permanente, Lamar Advertising

Company, Rand McNally, Southern Company, Sears Roebuck, and Sperry

Van Ness. In this book, you'll find out: What GIS is and how it can be

integrated into your organization's existing information infrastructure. How

GIS is currently making businesses better, and how you can apply the

same techniques to your industry or organization. The expanding roles of

GIS and spatial technologies in the web and mobile environments. The

ethical, legal, and security issues of special technologies How to conduct a

cost/benefit and ROI analyses for GIS. Grounded in the real world of

business and IT, *Geo-Business* will show you how spatially enabling your

IT systems can give you a unique advantage to beat your competitors in

the market, win and retain customers, grow your business, make better

decisions, develop new products and services, and optimize your

workflow.

Getting to Know Web GIS - Pinde Fu 2022-11-15

Get the latest information about online GIS using ArcGIS(R) apps and

functionality with *Getting to Know Web GIS*, fifth edition.

Designing Better Maps - Cynthia A. Brewer 2016

Designing Better Maps: A Guide for GIS Users, second edition, breaks

down the myriad decisions involved in creating maps that communicate

effectively. The second edition includes updated material and a new

chapter on map publishing.

Comprehensive Geographic Information Systems - 2017-07-21

Geographical Information Systems is a computer system used to capture,

store, analyze and display information related to positions on the Earth's

surface. It has the ability to show multiple types of information on multiple

geographical locations in a single map, enabling users to assess patterns

and relationships between different information points, a crucial component

for multiple aspects of modern life and industry. This 3-volumes reference

provides an up-to date account of this growing discipline through in-depth

reviews authored by leading experts in the field. VOLUME EDITORS

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University of Cambridge, Cambridge, United Kingdom Covers a rapidly

expanding discipline, providing readers with a detailed overview of all

aspects of geographic information systems, principles and applications

Emphasizes the practical, socioeconomic applications of GIS Provides

readers with a reliable, one-stop comprehensive guide, saving them time

in searching for the information they need from different sources

Geospatial Analysis - Michael John De Smith 2007

Addresses a range of analytical techniques that are provided within

modern Geographic Information Systems and related geospatial software

products. This guide covers: the principal concepts of geospatial analysis;

core components of geospatial analysis; and, surface analysis, including

surface form analysis, gridding and interpolation methods.

Mapping in the Cloud - Michael P. Peterson 2014-03-19

This engaging text provides a solid introduction to mapmaking in the era of

cloud computing. It takes students through both the concepts and

technology of modern cartography, geographic information systems (GIS),

and Web-based mapping. Conceptual chapters delve into the meaning of maps and how they are developed, covering such topics as map layers, GIS tools, mobile mapping, and map animation. Methods chapters take a learn-by-doing approach to help students master application programming interfaces and build other technical skills for creating maps and making them available on the Internet. The companion website offers invaluable supplementary materials for instructors and students. Pedagogical Features *End-of-chapter summaries, review questions, and exercises.

*Extensive graphics illustrating the concepts and procedures.

*Downloadable PowerPoints for each chapter. *Downloadable code files (where applicable) for the exercises.

Geographic Information Systems for Transportation - Harvey J. Miller 2001
GIS data and tools are revolutionizing transportation research and decision making, allowing transportation analysts and professionals to understand and solve complex transportation problems that were previously impossible. Here, Miller and Shaw present a comprehensive discussion of fundamental geographic science and the applications of these principles using GIS and other software tools. By providing thorough and accessible discussions of transportation analysis within a GIS environment, this volume fills a critical niche in GIS-T and GIS literature.

Advances in Web-based GIS, Mapping Services and Applications - Songnian Li 2011-05-09

Advances in Web-based GIS, Mapping Services and Applications is published as part of ISPRS WG IV/5 effort, and aims at presenting (1) Recent technological advancements, e.g., new developments under Web 2.0, map mashups, neogeography and the like; (2) Balanced theoretical discussions and technical implementations; (3) Commentary on the current stage

[Stuff You Should Know](#) - Josh Clark 2020-11-24

From the duo behind the massively successful and award-winning podcast *Stuff You Should Know* comes an unexpected look at things you thought you knew. Josh Clark and Chuck Bryant started the podcast *Stuff You Should Know* back in 2008 because they were curious—curious about the world around them, curious about what they might have missed in their formal educations, and curious to dig deeper on stuff they thought they understood. As it turns out, they aren't the only curious ones. They've since amassed a rabid fan base, making *Stuff You Should Know* one of the most popular podcasts in the world. Armed with their inquisitive natures and a passion for sharing, they uncover the weird, fascinating, delightful, or unexpected elements of a wide variety of topics. The pair have now taken their near-boundless "whys" and "hows" from your earbuds to the pages of a book for the first time—featuring a completely new array of subjects that they've long wondered about and wanted to explore. Each chapter is further embellished with snappy visual material to allow for rabbit-hole tangents and digressions—including charts, illustrations, sidebars, and footnotes. Follow along as the two dig into the

underlying stories of everything from the origin of Murphy beds, to the history of facial hair, to the psychology of being lost. Have you ever wondered about the world around you, and wished to see the magic in everyday things? Come get curious with *Stuff You Should Know*. With Josh and Chuck as your guide, there's something interesting about everything (...except maybe jackhammers).

GIS Tools for Water, Wastewater, and Stormwater Systems - Uzair M. Shamsi 2002

Uzair Shamsi presents a step-by-step approach covering GIS application case studies, examples, and costs associated with hardware, software, data conversion, and implementation.

Terrain Analysis - John P. Wilson 2000-08-03

The only reference on the use of GIS and related technologies in terrain analysis In this landmark publication, reflecting the collaborative effort of thirteen research groups based in four countries, leading experts detail how GIS and related technologies, such as GPS and remote sensing, are now being used, with the aid of computer modeling, in terrain analysis. Continuing the innovative work of Professor Ian Moore, a visionary who saw terrain analysis as a robust method for modeling the large areas and complex spatial patterns of environmental systems, *Terrain Analysis* puts into action TAPES, or Terrain Analysis Programs for Environmental Sciences, Dr. Moore's innovative tool for terrain analysis. The book's contributors describe how TAPES are applied to specific geomorphologic problems, explain the algorithms used in current terrain analysis software, and examine the interpretation and use of terrain attributes in predictive models. With expert coverage of terrain analysis in the digital age, *Terrain Analysis* will be welcomed by ecologists, environmental engineers, geographers, and hydrologists who increasingly depend on GIS, GPS, and remote sensing.

Getting to Know ArcGIS Pro - Michael Law 2019

The authors teach new and existing GIS users how to get started solving problems by visualizing, querying, creating, editing, analyzing, and presenting geospatial data in both 2D and 3D environments using ArcGIS Pro. This book teaches the basic functions and capabilities of the system through practical project workflows and shows how to be productive with the components of the platform. The second edition has been updated to include information relevant for ArcGIS Pro 2.3.--adapted from publisher's description.

Spatial Databases - Ph Rigaux 2002

The authors explore and explain current techniques for handling the specialised data that describes geographical phenomena in a study that will be of great value to computer scientists and geographers working with spatial databases.

Web GIS - Pinde Fu 2011

This book offers a balance of principles, concepts, and techniques to guide readers toward an understanding of how the World Wide Web can expand

and modernize the way you use GIS technology.-- [book cover]

Concepts and Applications of Web GIS - Anuj Tiwari 2017

Evolution of open-source web GIS technology in integration with contemporary commercial solutions not only provides an immediate solution at every level of small and medium-sized industry but also attracted students/scholars from a diverse background (Computer Science, Information Technology, Electronics, Civil Engineering, Geography, Geomatics, Earth Sciences, Hydrology etc) who are interested in making their carrier in different government (ISRO, DRDO, NIC, State Disaster Mitigation Centers, State Remote Sensing Centers etc) and private organisations (ESRI, Hexagon, Wipro, TCS etc). Proposed publication Concepts and Application of Web GIS emphasises both the basic principles and practical application of Web GIS technology for estimating the developments and advances about the use of both the commercial and open source Web GIS technology. It starts with describing the evolution of Web GIS technology, depicts its important uses/application in integration with Remote Sensing & GIS, discuss the role of Web GIS technology in current Smart City Services and E-Governance solutions and guide new developer to establish a complete Web GIS solution for their desired problem. Overall the book is a comprehensive solution for academia, commercial and planning community, which fills a long felt gap in the field of Geoinformatics and Web GIS community. Chapters written by active researchers presented in a way accessible to a public beyond those who are specialists in the topic dealt. Beside these, it will prove as a valuable reference book for graduation as well as post-graduation students to cover the syllabi related to technologies for GIS and Web GIS.

Remote Sensing - Floyd F. Sabins, Jr. 2020-04-01

Remote sensing has undergone profound changes over the past two decades as GPS, GIS, and sensor advances have significantly expanded the user community and availability of images. New tools, such as automation, cloud-based services, drones, and artificial intelligence, continue to expand and enhance the discipline. Along with comprehensive coverage and clarity, Sabins and Ellis establish a solid foundation for the insightful use of remote sensing with an emphasis on principles and a focus on sensor technology and image acquisition. The Fourth Edition presents a valuable discussion of the growing and permeating use of technologies such as drones and manned aircraft imaging, DEMs, and lidar. The authors explain the scientific and societal impacts of remote sensing, review digital image processing and GIS, provide case histories from areas around the globe, and describe practical applications of remote sensing to the environment, renewable and nonrenewable resources, land use/land cover, natural hazards, and climate change. • Remote Sensing Digital Database includes 27 examples of satellite and airborne imagery that can be used to jumpstart labs and class projects. The database includes descriptions, georeferenced images, DEMs, maps, and metadata. Users can display, process, and interpret images with open-source and

commercial image processing and GIS software. • Flexible, revealing, and instructive, the Digital Image Processing Lab Manual provides 12 step-by-step exercises on the following topics: an introduction to ENVI, Landsat multispectral processing, image processing, band ratios and principal components, georeferencing, DEMs and lidar, IHS and image sharpening, unsupervised classification, supervised classification, hyperspectral, and change detection and radar. • Introductory and instructional videos describe and guide users on ways to access and utilize the Remote Sensing Digital Database and the Digital Image Processing Lab Manual. • Answer Keys are available for instructors for questions in the text as well as the Digital Image Processing Lab Manual.

Geographic Information Science and Technology Body of Knowledge - University Consortium for Geographic Information Science 2006

Introduction to Web Mapping - Michael Dorman 2020-01-28

A web map is an interactive display of geographic information, in the form of a web page, that you can use to tell stories and answer questions. Web maps have numerous advantages over traditional mapping techniques, such as the ability to display up-to-date or even real-time information, easy distribution to end users, and highly customized interactive content.

Introduction to Web Mapping teaches you how to develop online interactive web maps and web mapping applications, using standard web technologies: HTML, CSS and JavaScript. The core technologies are introduced in Chapters 1-5, focusing on the specific aspects which are most relevant to web mapping. Chapters 6-13 then implement the material and demonstrate key concepts for building and publishing interactive web maps.

Tile-Based Geospatial Information Systems - John T. Sample 2010-10-26

Tile-based mapping systems have grown to become the dominant form of mapping system with the rise of Web-based mapping tools. The origin of this book is a desire to collect all our discoveries, techniques, and best practices for creating a til- mapping system into one combined volume. The intent of this text is to provide a comprehensive guide to the theory behind creating a tiled-map system as well as a practical guide to create a concrete implementation. Stennis Space Center, MS John Sample May 2010 Elias loup vii Acknowledgements The authors would like to thank the Naval Research Laboratory's Base Program, program element number 0602435N, for sponsoring this research. Additionally, the following people provided technical assistance without which this book would not have been possible: Perry Beason, Frank McCreedy, Norm Schoenhardt, Brett Hode, Bruce Lin, Annie Holladay, Juliette loup, and Hillary Mesick. ix Contents 1 Introduction 1 1. 1 Background of Web-Based Mapping Applications 1 1. 2 Properties of tile-based mapping systems 2 1. 3 Book Organization 2 2 Logical Tile Schemes

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Advanced Remote Sensing - Shunlin Liang 2012-12-06

Advanced Remote Sensing is an application-based reference that provides a single source of mathematical concepts necessary for remote sensing data gathering and assimilation. It presents state-of-the-art techniques for estimating land surface variables from a variety of data types, including optical sensors such as RADAR and LIDAR. Scientists in a number of different fields including geography, geology, atmospheric science, environmental science, planetary science and ecology will have access to critically-important data extraction techniques and their virtually unlimited applications. While rigorous enough for the most experienced of scientists, the techniques are well designed and integrated, making the book's content intuitive, clearly presented, and practical in its implementation. Comprehensive overview of various practical methods and algorithms Detailed description of the principles and procedures of the state-of-the-art algorithms Real-world case studies open several chapters More than 500 full-color figures and tables Edited by top remote sensing experts with contributions from authors across the geosciences

Mastering Shiny - Hadley Wickham 2021-04-29

Master the Shiny web framework—and take your R skills to a whole new level. By letting you move beyond static reports, Shiny helps you create fully interactive web apps for data analyses. Users will be able to jump between datasets, explore different subsets or facets of the data, run models with parameter values of their choosing, customize visualizations, and much more. Hadley Wickham from RStudio shows data scientists, data analysts, statisticians, and scientific researchers with no knowledge of HTML, CSS, or JavaScript how to create rich web apps from R. This in-depth guide provides a learning path that you can follow with confidence, as you go from a Shiny beginner to an expert developer who can write large, complex apps that are maintainable and performant. Get started: Discover how the major pieces of a Shiny app fit together Put Shiny in action: Explore Shiny functionality with a focus on code samples, example

apps, and useful techniques Master reactivity: Go deep into the theory and practice of reactive programming and examine reactive graph components Apply best practices: Examine useful techniques for making your Shiny apps work well in production

GIS and Environmental Monitoring - Stavros Kolios 2017-06-07

This book constitutes a notable contribution to investigate and present the capabilities of Geographic Information Systems (GIS) and their applicability and usefulness in environmental-related applications and sciences. The focus is on the design, creation, development and operation of integrated Web-based GIS applications for weather, marine and atmospheric environments, and the Earth's magnetic field. More specifically, the aim of this book is to present characteristic applications of GIS to environmental monitoring including GIS solutions for eco-mapping sea and port-related parameters, climate changes, and geomagnetic field. In the first part of the book, the description of every application includes the user requirements, the design and development stages performed and the presentation of the final outcome, its capabilities and services. The Web-based applications are developed through different innovative approaches, such as cloud GIS and Google Apps for GIS, justifying the merit of WebGIS in the world of the environmental applications. The second part of the book provides an overview of geomagnetic field parameters and reveals the potential of using GIS for modeling and analyzing of the Earth's magnetic (geomagnetic) field and its parameters. Here, the authors present the recently introduced phenomenon called “geomagnetic pseudostorm”, which is modeled and further analyzed here with GIS technology and tools. This book appeals to those interested in various areas where spatial information becomes of paramount relevance (e.g. social and economic research and mapping, environmental and climate research, decision support systems, public services, and especially for geomagnetic field variations and for the design of warning systems for natural disasters). It presents modern methods and approaches to visualize and analyze spatial information using innovative techniques, procedures, and tools of WebGIS technology. In this book, the readers find a valuable companion in their efforts to design and develop their own WebGIS applications, as it includes useful examples of developing (Web)GIS applications regarding the monitoring of marine and atmospheric environments, as well as applications that deal with meteorological issues and the Earth's magnetic field along with solar activity (space weather information). This book can also serve as a useful reference source for graduates, researchers and professionals related to the areas indicated above.

Digital Terrain Modeling - Zhilin Li 2004-11-29

Written by experts, Digital Terrain Modeling: Principles and Methodology provides comprehensive coverage of recent developments in the field. The topics include terrain analysis, sampling strategy, acquisition methodology, surface modeling principles, triangulation algorithms, interpolation techniques, on-line and off-line quality control in data a

Internet GIS - Zhong-Ren Peng 2003-03-31

* Provides case studies in each chapter illustrating how principles work in practice. * Compares strengths and weaknesses of off-the-shelf software packages.

GIScience Teaching and Learning Perspectives - Shivanand Balram
2019-01-31

This volume uniquely links educational theories and the practice of GIScience in higher education contexts to guide classroom practice, present effective practical implementations from peers, and provide resources and strategies for effective teaching methods. The book offers a comprehensive exploration of GIScience education, including current trends and future educational needs in GIScience, and will act as a resource to prepare learners for a world that demands more intensive investment in present-day education and technological literacy.

Additionally, the indirect benefit of merging the fragmented literature on GIScience literacy will provide a basis to examine common techniques and enable a new wave of research more rooted in learning theories. In ten chapters, the book is designed to attract an audience from geographic information systems science, geomatics, spatial information science,

cartography, information technology, and educational technology as focus disciplines.

Principles of Geographic Information Systems - Rolf A. de By 2004

Introduction to Remote Sensing, Fifth Edition - James B. Campbell
2011-06-15

A leading text for undergraduate- and graduate-level courses, this book introduces widely used forms of remote sensing imagery and their applications in plant sciences, hydrology, earth sciences, and land use analysis. The text provides comprehensive coverage of principal topics and serves as a framework for organizing the vast amount of remote sensing information available on the Web. Including case studies and review questions, the book's four sections and 21 chapters are carefully designed as independent units that instructors can select from as needed for their courses. Illustrations include 29 color plates and over 400 black-and-white figures. New to This Edition*Reflects significant technological and methodological advances.*Chapter on aerial photography now emphasizes digital rather than analog systems.*Updated discussions of accuracy assessment, multitemporal change detection, and digital preprocessing.*Links to recommended online videos and tutorials.