Multidimensional Geographic Information Science | cf1a366209of3d23cca2b498862d2945

Cloud Computing in Ocean and Atmospheric SciencesLiterary Mapping in the Digital AgeMultidimensional Geographic Information ScienceEnvironmental SystemsTowards a web coverage service for efficient multidimensional information retrievalSpatial ContextGeographic Information Science and Public ParticipationRediscovering GeographyAdvances in Spatial Analysis and Decision MakingA Research Agenda for Geographic Information ScienceInnovations In GISIf You Build It, Will They Come?Environmental Information SystemsGeoSpatial Visual AnalyticsDynamic Taxonomies and Faceted SearchFoundations of Multidimensional and Metric Data StructuresGeographical Information SystemsA Century of British GeographyHandbook of Research on GeoinformaticsSpatial Information Theory. Foundations of Geographic Information ScienceEncyclopedia of Geographic Information ScienceGeodemographics, GIS and Neighbourhood TargetingTemporal Relations in Geographic Information SystemsRe-Presenting GISMultidimensional Geographic Information ScienceSelf-Organising MapsMultidimensional Geographic Information ScienceCollaborative Geographic Information SystemsGeographic Information Systems: Concepts, Methodologies, Tools, and ApplicationsAdvances in Photogrammetry, Remote Sensing and Spatial Information Sciences: 2008 ISPRS Congress BookCloud Computing in Ocean and Atmospheric SciencesA Geographic Information System Prototype for Archived Data from Intelligent Transportation SystemsEncyclopedia of Information Science and Technology, First EditionScience, Philosophy and Physical GeographyUncertainty Modelling and Quality Control for Spatial Data3D Geo-Information SciencesTime-Integrative Geographic Information SystemsGeographic Information ScienceMarine and Coastal Geographical Information SystemsThe Handbook of Geographic Information Science

Cloud Computing in Ocean and Atmospheric Sciences

COSIT,theseriesofConferencesonSpatialInformationTheory,hasbeenaround for more than ten years. Its hallmarks are a fruitful interdisciplinary dialogue between computational and human perspectives on spatio-temporal information and a thorough review process that selects the best papers while giving all - thors detailed feedback on how to develop their work. A clear pro?le of the COSIT community has emerged from the series of conference proceedings, all published as Springer Lecture Notes in Computer Science, and from the per- nent web site at http://www. cosit. info, containing links to the conference web sites and proceedings, a history and program of the series, an impact study, interviews with participants, and pictures. The proceedings of this sixth conference provide ample evidence that COSIT is healthy and maturing, while retaining its youth. Out of the 61 submissions, the program committee selected 26 papers for presentation, in discussions based on at least three double-blind reviews and one or more meta-review from PC members for each paper. Classical COSIT themes, such as spatial reasoning (about distances and directions, regions and shapes) or vagueness are being f- ther re?ned; topics like way?nding and landmarks are boosted by new synergies betweencognitiveandcomputationalapproaches;andthestudyofontologiesfor space and time, a subject since the ?rst COSIT, is gaining more depth.

Literary Mapping in the Digital Age

Drawing on the expertise of leading researchers from around the globe, this pioneering collection of essays explores how geospatial technologies are revolutionizing the discipline of literary studies. The book offers the first intensive examination of digital literary cartography, a field whose recent and rapid development has yet to be coherently analysed. This collection not only provides an authoritative account of the current state of the field, but also informs a new generation of digital humanities scholars about the critical and creative potentials of digital literary mapping. The book showcases the work of exemplary literary mapping projects and provides the reader with an overview of the tools, techniques and methods those projects employ.

Multidimensional Geographic Information Science

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Environmental Systems

Cloud Computing in Ocean and Atmospheric Sciences provides the latest information on this relatively new platform for scientific computing, which has great possibilities and challenges, including pricing and deployments costs and applications that are often presented as primarily business oriented. In addition, scientific users may be very familiar with these types of models and applications, but relatively unfamiliar with the intricacies of the hardware platforms they use. The book provides a range of practical examples of cloud applications that are written to be accessible to practitioners, researchers, and students in affiliated fields. By providing general information on the use of the cloud for oceanographic and atmospheric computing, as well as examples of specific applications, this book encourages and educates potential users of the cloud. The chapters provide an introduction to the practical aspects of deploying in the cloud, also providing examples of workflows and techniques that can be reused in new projects. Provides real examples that help new users quickly understand the cloud and provide guidance for new projects Presents proof of the usability of the techniques and a clear path to adoption of the techniques by other researchers Includes real research and development examples that are ideal for cloud computing adopters in ocean and atmospheric domains

Towards a web coverage service for efficient multidimensional information retrieval

As political, economic, and environmental issues increasingly spread across the globe, the science of geography is being rediscovered by scientists, policymakers, and educators alike. Geography has been made a core subject in U.S. schools, and scientists from a variety of disciplines are using analytical tools originally developed by geographers. Rediscovering Geography presents a broad overview of geography's renewed importance in a changing world. Through discussions and highlighted case studies, this book illustrates geography's impact on international trade, environmental change, population growth, information infrastructure, the condition of cities, the

spread of AIDS, and much more. The committee examines some of the more significant tools for data collection, storage, analysis, and display, with examples of major contributions made by geographers. Rediscovering Geography provides a blueprint for the future of the discipline, recommending how to strengthen its intellectual and institutional foundation and meet the demand for geographic expertise among professionals and the public.

Spatial Context

Computer-mediated participation is at the crossroads. In the early heady days of the digital revolution, access to "high" technologies such as GIS promised the empowerment of marginalized communities by providing data and information that was previously hidden away from public view. To a great extent, this goal has been achieved at least in the U.S. and Western Europe – data about a range of government initiatives and raw data about different aspects of spatial planning such as land use, community facilities, property ownership are available a mouse-click away. Now, that we, the public, have access to information, are we able to make better plans for the future of our cities and regions? Are we more inclusive in our planning efforts? Are we able to foster collaborative governance structures mediated by digital technologies? In the book, these issues will be discussed using a three-part structure. The first part of the book will be theoretical – it will review the literature in the field, establish a framework to organize the literature and to link three different subject areas (participation and community development, GIS and other related technologies, and planning processes). The second part of the book will be a series of success stories, case studies that review actual situations where participatory planning using GIS has enabled community wellbeing and empowerment. These case studies will vary in scale and focus on different planning issues (planning broadly defined). The final part of the book will step back to review alternative scenarios for the future, exploring where we are headed, as the technologies we are using to plan rapidly change.

Geographic Information Science and Public Participation

Access, distribution and processing of Geographic Information (GI) are basic preconditions to support strategic environmental decision-making. The heterogeneity of information on the environment today available is driving a wide number of initiatives, on both sides of the Atlantic, all advocating both the strategic role of proper management and processing of environme-related data as well as the importance of harmonized IT infrastructures designed to better monitor and manage the environment. The extremely wide range of often multidimensional environmental information made available at the global scale poses a great challenge to technologists and scientists to find extremely sophisticated yet effective ways to provide access to relevant data patterns within such a vast and highly dynamic information flow. In the past years the domain of 3D scientific visualization has developed several solutions designed for operators requiring to access results of a simulation through the use of 3D visualization that could support the understanding of an evolving phenomenon. However 3D data visualization alone does not provide model and hypothesis-making neither it provide tools to validate results. In order overcome this shortcoming, in recent years scientists have developed a discipline that combines the benefits of data mining and information visualization, which is often

referred to as Visual Analytics (VA).

Rediscovering Geography

The development of new technologies in science is a balance between existence and use. There are three versions of this duality - something is built and users come, something is built and users don't come, and, finally, potential users show up but the ballpark has not yet been built. In each instance there is a combination of three factors at work. The first is a scientific need for a type of data or analysis. The second is a technology or technique developed to meet the need; and the third is a perception that using the technology is somehow "better" that the existing tools and that the tool is easy to use. This work examines closely the development of a tool within oceanography - the Stommel diagram for displaying the time and space spectra of oceanographic phenomena - and the spread of the use of the diagram to other disciplines. The diagram was the product of a number of elements - the mind of a truly original oceanographer, the development of equipment able to collect the detailed temporal and spatial data used to create the plot, and the rise of "big oceanography", which led Stommel to argue graphically for taking care in the design of expeditions. Understanding the spread of the Stommel plot provides a viewpoint for examining the unexpectedly slow development of multi-dimensional geographic information systems (GIS). The development of GIS's began in the 1970's. Data structures to hold multi-dimensional data have been developed, tools for multidimensional map algebra have been created, and test applications have been developed. The current non-development of multi-dimensional GIS is examined as a background for creating and disseminating GeoModeler, a prototype of scientific GIS able to ingest and display multi-dimensional data. Taking advantage of recent technical developments, we have created a scientific GIS that can display three-dimensional oceanographic data. GeoModeler is used to visually explore and analyze the relationship between water temperature and larval walleye pollock (Theragra chalcogramma) growth in Shelikof Strait, Alaska.

Advances in Spatial Analysis and Decision Making

This Handbook is an essential reference and a guide to the rapidly expanding field of Geographic Information Science. Designed for students and researchers who want an in-depth treatment of the subject, including background information Comprises around 40 substantial essays, each written by a recognized expert in a particular area Covers the full spectrum of research in GIS Surveys the increasing number of applications of GIS Predicts how GIS is likely to evolve in the near future

A Research Agenda for Geographic Information Science

These essays trace the evolution of British geography as an academic discipline during the last hundred years, and stress how the study of the world we live in is fundamental to an understanding of its problems and concerns. Never before has such an ambitious and wide-ranging review been attempted, and never before has it been done with so much knowledge and passion. The principal themes covered in this volume are those of environment, place and space, and the applied geography of map-making and planning. The volume also addresses specific issues such as disease,

urbanization, regional viability, and ethics and social problems. This lively and accessible work offers many insights into the minds and practices of today's geographers.

Innovations In GIS

Many disciplines are concerned with manipulating geometric (or spatial) objects in the computer – such as geology, cartography, computer aided design (CAD), etc. – and each of these have developed their own data structures and techniques, often independently. Nevertheless, in many cases the object types and the spatial queries are similar, and this book attempts to find a common theme.

If You Build It, Will They Come?

The Encyclopedia of Geographic Information Science covers the essence of this exciting, new, and expanding field in an easily understood but richly detailed style. In addition to contributions from some of the best recognized scholars in GIScience, this volume contains contributions from experts in GIS' supporting disciplines who explore how their disciplinary perspectives are expanded within the context of GIScience—what changes when consideration of location is added, what complexities in analytical procedures are added when we consider objects in 2, 3 or even 4 dimensions, what can we gain by visualizing our analytical results on a map or 3D display?

Environmental Information Systems

Self-Organising Maps: Applications in GI Science brings together the latest geographical research where extensive use has been made of the SOM algorithm, and provides readers with a snapshot of these tools that can then be adapted and used in new research projects. The book begins with an overview of the SOM technique and the most commonly used (and freely available) software; it is then sectioned to look at the different uses of the technique, namely clustering, data mining and cartography, from a range of application-areas in the biophysical and socio-economic environments. Only book that takes SOM algorithm to the GIS and Geography research communities The Editors draw together expert contributors from the UK, Europe, USA, New Zealand, and South Africa Covers a range of techniques in clustering, data mining cartography, all featuring an appropriate case study

GeoSpatial Visual Analytics

Current access paradigms for the Web, i.e., direct access via search engines or database queries and navigational access via static taxonomies, have recently been criticized because they are too rigid or simplistic to effectively cope with a large number of practical search applications. A third paradigm, dynamic taxonomies and faceted search, focuses on user-centered conceptual exploration, which is far more frequent in search tasks than retrieval using exact specification, and has rapidly become pervasive in modern Web data retrieval, especially in critical applications such as product selection for e-commerce. It is a heavily interdisciplinary area, where data modeling, human factors, logic, inference, and efficient implementations must be dealt with holistically. Sacco, Tzitzikas, and their

contributors provide a coherent roadmap to dynamic taxonomies and faceted search. The individual chapters, written by experts in each relevant field and carefully integrated by the editors, detail aspects like modeling, schema design, system implementation, search performance, and user interaction. The basic concepts of each area are introduced, and advanced topics and recent research are highlighted. An additional chapter is completely devoted to current and emerging application areas, including e-commerce, multimedia, multidimensional file systems, and geographical information systems. The presentation targets advanced undergraduates, graduate students and researchers from different areas – from computer science to library and information science – as well as advanced practitioners. Given that research results are currently scattered among very different publications, this volume will allow researchers to get a coherent and comprehensive picture of the state of the art.

Dynamic Taxonomies and Faceted Search

Geodemographic classification is 'big business' in the marketing and service sector industries, and in public policy there has also been a resurgence of interest in neighbourhood initiatives and targeting. As an increasing number of professionals realise the potential of geographic analysis for their business or organisation, there exists a timely gap in the market for a focussed book on geodemographics and GIS. Geodemographics: neighbourhood targeting and GIS provides both an introduction to and overview of the methods, theory and classification techniques that provide the foundation of neighbourhood analysis and commercial geodemographic products. Particular focus is given to the presentation and use of neighbourhood classification in GIS. Authored by leading marketing professionals and a prominent academic, this book presents methods, theory and classification techniques in a reader-friendly manner Supported by private and public sector case studies and vignettes The applied 'how to' sections will specifically appeal to the intended audience at work in business and service planning Includes information on the recent UK and US Census products and resulting neighbourhood classifications

Foundations of Multidimensional and Metric Data Structures

This book is intended for scholars and students of geography, geology, environmental science, civil engineering, urban planning biology, and social sciences.

Geographical Information Systems

Since its inception in Savannah, Georgia (USA) in 2000, the highly successful GIScience conferenceseries (www.giscience.org)has regularlyattractedover250 researchers from all over the world whose common interest lies in advancing the research frontiers of fundamental aspects of the production, dissemination, and use of geographic information. The conference is bi-annual and brings together leading researchers from all cognate disciplines re?ecting the interdisciplinary breadth of GIScience, including (but not limited to) geography, cognitive s- ence, computer science, engineering, information science, mathematics, philo- phy, psychology, social science, and (geo)statistics. Following the, literally breathtaking,conference in Park City, Utah (USA) at 2103m, the sixth

GIScience 2010 conference returned to Europe for the second time. The 2010 conference was held in Zurich, Switzerland, a place nominated repeatedly as the world's most livable (if not cheapest!) city. Zurich is also a GIScience landmark, as in 1990 one of the founders of the GIScience conference series, Dr. Michael Goodchild, delivered a memorable talk setting out how f-damental research on GISystems could turn into GIScience at the very same conference location during the Spatial Data Handling Symposium.

A Century of British Geography

The way people normally view a GIS is 2-dimensional, a greatly limiting form. However, as developments occur within the field, researchers and practitioners are finding ways to make a GIS 3-dimensional, and in some instances even 4-dimensional. Being able to view a GIS in more than 2 dimensions greatly enhances its usability. This forward-looking text, looks at the ways in which 3- and 4-dimensional (multidimensional) GIS can be incorporated into the area in the future using a variety of programming techniques. The author of this unique book also discusses current examples and uses of multidimensional GIS in the field and shows the way forward for users in the coming years.

Handbook of Research on Geoinformatics

Focused on major research relative to spatial information, Uncertainty Modelling and Quality Control for Spatial Data introduces methods for managing uncertainties-such as data of questionable quality-in geographic information science (GIS) applications. By using original research, current advancement, and emerging developments in the field, the authors compile various aspects of spatial data quality control. From multidimensional and multiscale data integration to uncertainties in spatial data mining, this book launches into areas that are rarely addressed. Topics covered include, New developments of uncertainty modelling, quality control of spatial data, and related research issues in spatial analysis, Spatial statistical solutions in spatial data quality, Eliminating systematic error in the analytical results of GIS applications, A data quality perspective for GIS function workflow design, Data quality in multidimensional integration, Research challenges on data quality in the integration and analysis of data from multiple sources, A new approach for imprecision management in the qualitative data warehouse, A multi-dimensional quality assessment of photogrammetric and LiDAR datasets based on a vector approach, An analysis on the uncertainty of multiscale representation for street-block settlement, Uncertainty Modelling and Quality Control for Spatial Data serves university students, researchers and professionals in GIS, and investigates the uncertainty modelling and quality control in multidimensional data integration, multiscale data representation, national or regional spatial data products, and new spatial data mining methods. Book jacket.

Spatial Information Theory. Foundations of Geographic Information Science

"This book provides a comprehensive treatment of collaborative GIS focusing on system design, group spatial planning and mapping; modeling, decision support, and visualization; and internet and wireless applications"--Provided by publisher.

Encyclopedia of Geographic Information Science

Publisher Description

Geodemographics, GIS and Neighbourhood Targeting

The way people normally view a GIS is 2-dimensional, a greatly limiting form. However, as developments occur within the field, researchers and practitioners are finding ways to make a GIS 3-dimensional, and in some instances even 4-dimensional. Being able to view a GIS in more than 2 dimensions greatly enhances its usability. This forward-lookin

Temporal Relations in Geographic Information Systems

Environmental information systems (EIS) are concerned with the management of data about the soil, the water, the air, and the species in the world around us. This first textbook on the topic gives a conceptual framework for EIS by structuring the data flow into 4 phases: data capture, storage, analysis, and metadata management. This flow corresponds to a complex aggregation process gradually transforming the incoming raw data into concise documents suitable for high-level decision support. All relevant concepts are covered, including statistical classification, data fusion, uncertainty management, knowledge based systems, GIS, spatial databases, multidimensional access methods, object-oriented databases, simulation models, and Internet-based information management. Several case studies present EIS in practice.

Re-Presenting GIS

"This book discusses the complete range of contemporary research topics such as computer modeling, geometry, geoprocessing, and geographic information systems"--Provided by publisher.

Multidimensional Geographic Information Science

A close relationship exists between GIS and numerous applications, including cartography, photogrammetry, geodesy, surveying, computer and information science, and statistics, among others. Scientists coined the term "geographic information science (GIScience)" to describe the theory behind these fields. A Research Agenda for Geographic Information

Self-Organising Maps

Multidimensional Geographic Information Science

Derived from presentations made at the fourth annual UK National Conference on GIS Research, this work consists of contributions by leading experts in: geography, mathematics, computing science, surveying, archaeology, planning and medicine.

Collaborative Geographic Information Systems

Published on the occasion of the XXIst Congress of the International Society

for Photogrammetry and Remote Sensing (ISPRS) in Beiijng, China in 2008, Advances in Photogrammetry, Remote Sensing and Spatial Information Sciences: 2008 ISPRS Congress Book is a compilation of 34 contributions from 62 researchers active within the ISPRS. The book covers

Geographic Information Systems: Concepts, Methodologies, Tools, and Applications

Master's Thesis from the year 2007 in the subject Geography / Earth Science - Miscellaneous, grade: 1,3, University of Bonn (Geographisches Institut), 81 entries in the bibliography, language: English, abstract: 1. INTRODUCTION Many organizations face the challenge of managing and presenting the sheer quantity of data being captured on a monthly, weekly, daily and hourly level. The introduction of business intelligence (BI) applications and technologies has helped organizations gather, provide access to, analyze, and present data and information easily to the decision makers. The applications utilize both relational and multidimensional technologies to form the overall BI infrastructure. From a historical perspective BI is a popularized umbrella term introduced by Howard Dresner of the Gartner Group in 1989 to describe a set of concepts and methods to improve business decision making by using fact-based support systems. BI is a broad category of applications and technologies for gathering, storing, analyzing, and providing access to data to help enterprise users make better business decisions. BI solutions include the activities of decision support systems, query and reporting, online analytical processing (OLAP), statistical analysis, forecasting and data mining. Microsoft defines BI as: THE PROCESS OF EXTRACTING DATA FROM A DATABASE AND THEN ANALYZING THAT DATA FOR INFORMATION THAT YOU CAN USE TO MAKE INFORMED BSINESS DECISIONS AND TAKE ACTION. However, data is not always used to its full potential and part of its richness, the spatial component, is simply left out. It has been estimated that about 80% of the data stored in corporate databases integrates spatial information that can be characterized by position, shape, orientation or size (Frankin, April 1992). It is obvious that this meaningful data is worth being integrated in the decision making process to provide a complete operational picture. To gain better advantage of the spatial dimension in decision making the appropriate tools must be used. Geographic Information Systems (GIS) are the obvious potential candidate for such a task. (Worboys, 1995) provide this typical definition of a conventional GIS: A GIS IS A COMPUTERBASED INFORMATION SYSTEM THAT ENABLES CAPTURE, MODELING, MANIPULATION, RETRIEVAL, AND PRESENTATION OF GEOGRAPHICALLY REFERENCED DATA. GIS provides functionalities like

Advances in Photogrammetry, Remote Sensing and Spatial Information Sciences: 2008 ISPRS Congress Book

In recent years 3D geo-information has become an important research area due to the increased complexity of tasks in many geo-scientific applications, such as sustainable urban planning and development, civil engineering, risk and disaster management and environmental monitoring. Moreover, a paradigm of cross-application merging and integrating of 3D data is observed. The problems and challenges facing today's 3D software, generally application-oriented, focus almost exclusively on 3D data transportability issues – the ability to use data originally developed in one modelling/visualisation system in other and vice versa. Tools for elaborated 3D analysis, simulation

and prediction are either missing or, when available, dedicated to specific tasks. In order to respond to this increased demand, a new type of system has to be developed. A fully developed 3D geo-information system should be able to manage 3D geometry and topology, to integrate 3D geometry and thematic information, to analyze both spatial and topological relationships, and to present the data in a suitable form. In addition to the simple geometry types like point line and polygon, a large variety of parametric representations, freeform curves and surfaces or sweep shapes have to be supported. Approaches for seamless conversion between 3D raster and 3D vector representations should be available, they should allow analysis of a representation most suitable for a specific application.

Cloud Computing in Ocean and Atmospheric Sciences

This work brings together in one volume the concepts and concerns of both schools of thought and looks at GIS from a theoretical and practical perspective.

A Geographic Information System Prototype for Archived Data from Intelligent Transportation Systems

While traditional apsects of GIS have been growing rapidly in recent years, new developments have focused on the geographic information service and delivery, which will realise the benefits of spatial information to the community. The analysis and application of spatial information for decision support systems is an important development in realising these benefits. This book is a collection of peer-reviewed articles presented at the ISPRS Workshop on Spatial Analysis and Decision Making in Hong Kong in 2003. It covers topics such as image-based spatial analysis and decision making; 3-D modelling and analysis; general spatial analysis methodology; web- and mobile-based analysis; knowledge-based systems; integrated systems; visualisation and representation methodology, and some application systems.

Encyclopedia of Information Science and Technology, First Edition

Science, Philosophy and Physical Geography

Marine and coastal applications of GIS are finally gaining wide acceptance in scientific as well as GIS communities, and cover the fields of deep sea geology, chemistry and biology, and coastal geology, biology, engineering and resource management. Comprising rigorous contributions from a group of leading scholars in marine and coastal GIS, this book will inspire and stimulate continued research in this important new application domain. Launched as a project to mark the UN International Year of the Ocean (1998) and supported by the International Geographical Union's Commission on Coastal Systems, this book covers progress and research in the marine and coastal realms, in the areas of theory, applications and empirical results. It is the first book of its kind to address basic and applied scientific problems in deep sea and coastal science using GIS and remote sensing technologies. It is designed for GIS and remote sensing specialists, but also for those with an interest in oceans, lakes and shores. Coverage ranges

from seafloor spreading centres to Exclusive Economic Zones to microscale coastal habitats; and techniques include submersibles, computer modelling, image display, 3-D temporal data visualization, and development and application of new algorithms and spatial data structures. It illustrates the broad usage of GIS, image processing, and computer modelling in deep sea and coastal environments, and also addresses important institutional issues arising out of the use of these technologies.

Uncertainty Modelling and Quality Control for Spatial Data

The book deals with the integration of temporal information in Geographic Information Systems. The main purpose of an historical or time-integrative GIS is to reproduce spatio- temporal processes or sequents of events in the real world in the form of a model. The model thus making them accessible for spatial query, analysis and visualization. This volume reflects both theoretical thoughts on the interrelations of space and time, as well as practical examples taken from various fields of application (e.g. business data warehousing, demographics, history and spatial analysis).

3D Geo-Information Sciences

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Time-Integrative Geographic Information Systems

This accessible and engaging text explores the relationship between philosophy, science and physical geography. It addresses an imbalance that exists in opinion, teaching and to a lesser extent research, between a philosophically enriched human geography and a perceived philosophically ignorant physical geography. Science, Philosophy and Physical Geography, challenges the myth that there is a single self-evident scientific method, that can and is applied in a straightforward manner by physical geographers. It demonstrates the variety of alternative philosophical perspectives. Furthermore it emphasizes the difference that the real world geographical context and the geographer make to the study of environmental phenomenon. This includes a consideration of the dynamic relationship between human and

physical geography. Finally, it demonstrates the relevance of philosophy for both an understanding of published material and for the design and implementation of studies in physical geography. Key themes such as global warming, species and evolution and fluvial geomorphology are used to provide illustrations of key concepts in each chapter. Further reading is provided at the end of each chapter.

Geographic Information Science

Developments in technologies have evolved in a much wider use of technology throughout science, government, and business; resulting in the expansion of geographic information systems. GIS is the academic study and practice of presenting geographical data through a system designed to capture, store, analyze, and manage geographic information. Geographic Information Systems: Concepts, Methodologies, Tools, and Applications is a collection of knowledge on the latest advancements and research of geographic information systems. This book aims to be useful for academics and practitioners involved in geographical data.

Marine and Coastal Geographical Information Systems

Web services, cloud computing, location based services, NoSQLdatabases, and Semantic Web offer new ways of accessing, analyzing, and elaborating geo-spatial information in both real-world and virtual spaces. This book explores the how-to of the most promising recurrent technologies and trends in GIS, such as Semantic GIS, Web GIS, Mobile GIS, NoSQL Geographic Databases, Cloud GIS, Spatial Data Warehousing-OLAP, and Open GIS. The text discusses and emphasizes the methodological aspects of such technologies and their applications in GIS.

The Handbook of Geographic Information Science

Comprehensive coverage of critical issues related to information science and technology.

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