

Gis And Public Health

GIS Tutorial for Health for ArcGIS Desktop 10.8 introduces readers to preparing, visualizing, and analyzing health data in a workbook designed for teaching with ArcGIS Desktop 10.8.

While mapped data provide a common ground for discussions between the public, the media, regulatory agencies, and public health researchers, the analysis of spatially referenced data has experienced a phenomenal growth over the last two decades, thanks in part to the development of geographical information systems (GISs). This is the first thorough overview to integrate spatial statistics with data management and the display capabilities of GIS. It describes methods for assessing the likelihood of observed patterns and quantifying the link between exposures and outcomes in spatially correlated data. This introductory text is designed to serve as both an introduction for the novice and a reference for practitioners in the field. Requires only minimal background in public health and only some knowledge of statistics through multiple regression. Touches upon some advanced topics, such as random effects, hierarchical models and spatial point processes, but does not require prior exposure. Includes lavish use of figures/illustrations throughout the volume as well as analyses of several data sets (in the form of "data breaks"). Exercises based on data analyses reinforce concepts.

In its third edition, GIS Tutorial for Health is fully-revised and updated for ArcGIS 9.3 software compatibility. To better support skill-building and development, this workbook features extended introductions to eleven tutorials addressing significant health care and policy-planning issues. Complete with a new tutorial that utilizes the ArcGIS Spatial Analyst extension, a 180-day trial DVD of ArcView 9.3, and a data CD to complete the exercises, this step-by-step tutorial is a valuable resource for the classroom, as well as the individual user.

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 helps readers see how GIS for disaster management operates at local, state, national, and international scales through government, the private sector, non-governmental organizations, and volunteer groups. New in the second edition: a chapter on allied technologies that includes remote sensing, 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 the 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.

This book focuses on a range of geospatial applications for environmental health research, including environmental justice issues, environmental health disparities, air and water contamination, and infectious diseases. Environmental health research is at an exciting point in its use of geotechnologies, and many researchers are working on innovative approaches. This book is a timely scholarly contribution in updating the key concepts and applications of using GIS and other geospatial methods for environmental health research. Each chapter contains original research which utilizes a geotechnical tool (Geographic Information Systems (GIS), remote sensing, GPS, etc.) to address an environmental health problem. The book is divided into three sections organized around the following themes: issues in GIS and environmental health research; using GIS to assess environmental health impacts; and geospatial methods for environmental health. Representing diverse case studies and geospatial methods, the book is likely to be of interest to researchers, practitioners and students across the geographic and environmental health sciences. The authors are leading researchers and practitioners in the field of GIS and environmental health.

This book is specifically designed to serve the community of postgraduates and researchers in the fields of epidemiology, health GIS, medical geography, and health management. It starts with the basic concepts and role of remote sensing, GIS in Kala-azar diseases. The book gives an exhaustive coverage of Satellite data, GPS, GIS, spatial and attribute data modeling, and geospatial analysis of Kala-azar diseases. It also presents the modern trends of remote sensing and GIS in health risk assessment with an illustrated discussion on its numerous applications.

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 GISRUUK. 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.

Computer science provides a powerful tool that was virtually unknown three generations ago. Some of the classical fields of knowledge are geodesy (surveying), cartography,

and geography. Electronics have revolutionized geodetic methods. Cartography has faced the dominance of the computer that results in simplified cartographic products. All three fields make use of basic components such as the Internet and databases. The Springer Handbook of Geographic Information is organized in three parts, Basics, Geographic Information and Applications. Some parts of the basics belong to the larger field of computer science. However, the reader gets a comprehensive view on geographic information because the topics selected from computer science have a close relation to geographic information. The Springer Handbook of Geographic Information is written for scientists at universities and industry as well as advanced and PhD students.

Now, more than ever, professionals can benefit from the power of location data, maps, and analytics in healthcare with this concise and focused workbook.

Commuting, the daily link between residences and workplaces, sets up the complex interaction between the two most important land uses (residential and employment) in a city, and dictates the configuration of urban structure. In addition to prolonged time and stress for individual commuters on traffic, commuting comes with additional societal costs including elevated crash risks, worsening air quality, and louder traffic noise, etc. These issues are important to city planners, policy researchers, and decision makers. GIS-Based Simulation and Analysis of Intra-Urban Commuting, presents GIS-based simulation, optimization and statistical approaches to measure, map, analyze, and explain commuting patterns including commuting length and efficiency. Several GIS-automated easy-to-use tools will be available, along with sample data, for readers to download and apply to their own studies. This book recognizes that reporting errors from survey data and use of aggregated zonal data are two sources of bias in estimation of wasteful commuting, it studies the temporal trend of intraurban commuting pattern based on the most recent period newly-available 2006-2010, and it focuses on commuting, and especially wasteful commuting within US cities. It includes ready-to-download GIS-based simulation tools and sample data, and an explanation of optimization and statistical techniques of how to measure commuting, as well as presenting a methodology that can be applicable to other studies. This book is an invaluable resource for students, researchers, and practitioners in geography, urban planning, public policy, transportation engineering, and other related disciplines.

With the widespread use of PDAs, wireless internet, Internet-based GIS, and 3G and 4G telecommunications, the technology supporting mobile GIS is rapidly gaining popularity and effectiveness. Dynamic and Mobile GIS: Investigating Changes in Space and Time addresses Web GIS, mobile GIS, and the modeling, processing, and representation of dynamic events. GIS and Public Health Guilford Press

Geographic information systems represent an exciting and rapidly expanding technology via which spatial data may be captured, stored, retrieved, displayed, manipulated and analysed. Applications of this technology include detailed inventories of land use parcels. Spatial patterns of disease, geodemographics, environmental management and macroscale inventories of global resources. The impetus for this book is the relative lack of research into the integration of spatial analysis and GIS, and the potential benefits in developing such an integration. From a GIS perspective, there is an increasing demand for systems that do something other than display and organize data. From a spatial analytical perspective, there are advantages to linking statistical methods and mathematical models to the database and display capabilities of a GIS. Although the GIS may not be absolutely necessary for spatial analysis, it can facilitate such an analysis and moreover provide insights that might otherwise have been missed. The contributions to the book tell us where we are and where we ought to be going. It suggests that the integration of spatial analysis and GIS will stimulate interest in quantitative spatial science, particularly exploratory and visual types of analysis and represents a unique statement of the state-of-the-art issues in integration and interface.

This clearly written resource provides a comprehensive introduction to the use of geographic information systems (GIS) in analyzing and addressing public health problems. The book guides the reader through basic GIS concepts and methods, with an emphasis on practical applications. Described are ways that GIS can be used to map health events, identify disease clusters, investigate environmental health problems, understand the spread of communicable and vector-borne infectious disease, and more. Numerous tables, figures, and concrete examples are included. The companion website features downloadable GIS databases that allow readers to practice a variety of spatial analytical techniques.

Although many books have been published on the application of GIS in emergency management and disaster response, this is the first one to bring together a comprehensive discussion of the critical role GIS plays in hospital and healthcare emergency management and disaster response. Illustrating a wide range of practical applications, GIS in Hospital

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.

Significant advances in the evaluation and use of geographic information have had a major effect on key elements of public health. Strides in mapping technology as well as the availability and accuracy of health information enable public health practitioners to link and analyze data in new ways at international, regional, and even street levels. This geographical perspective generates new approaches in the study of communicable disease control, environmental health protection, health needs assessment, planning and policy, operational public health management, and many other areas. GIS in Public Health Practice includes contributions from the leading researchers in the field who participated in the First European Conference on Geographic Information Sciences and Public Health. This event promoted the use of GIS within the realm of public health. Specifically selected and expanded contributions illustrate particular areas of application and address issues of major importance. Many of the chapters have a UK or European focus, but examine issues, principles, and methods that are relevant worldwide. GIS in Public Health Practice is the first book to treat GIS as more than a mere technology. It

recognizes GIS as a science that encompasses the development and application of scientific methods toward solving societal problems, an emerging facet of public health research and practice. This compilation is beneficial to all practitioners and researchers with an interest in public health.

Lang explores how geographic information systems can help health care administrators plan, understand, and combat problems in the community. These GIS systems develop graphical models between the environmental landscape and the health condition of individuals living in that landscape.

The proper management of geographic data can provide assistance to a number of different sectors within society. As such, it is imperative to continue advancing research for spatial data analysis. The Handbook of Research on Geographic Information Systems Applications and Advancements presents a thorough overview of the latest developments in effective management techniques for collecting, processing, analyzing, and utilizing geographical data and information. Highlighting theoretical frameworks and relevant applications, this book is an ideal reference source for researchers, academics, professionals, and students actively involved in the field of geographic information systems.

GIS and the Social Sciences offers a uniquely social science approach on the theory and application of GIS with a range of modern examples. It explores how human geography can engage with a variety of important policy issues through linking together GIS and spatial analysis, and demonstrates the importance of applied GIS and spatial analysis for solving real-world problems in both the public and private sector. The book introduces basic theoretical material from a social science perspective and discusses how data are handled in GIS, what the standard commands within GIS packages are, and what they can offer in terms of spatial analysis. It covers the range of applications for which GIS has been primarily used in the social sciences, offering a global perspective of examples at a range of spatial scales. The book explores the use of GIS in crime, health, education, retail location, urban planning, transport, geodemographics, emergency planning and poverty/income inequalities. It is supplemented with practical activities and datasets that are linked to the content of each chapter and provided on an eResource page. The examples are written using ArcMap to show how the user can access data and put the theory in the textbook to applied use using proprietary GIS software. This book serves as a useful guide to a social science approach to GIS techniques and applications. It provides a range of modern applications of GIS with associated practicals to work through, and demonstrates how researcher and policy makers alike can use GIS to plan services more effectively. It will prove to be of great interest to geographers, as well as the broader social sciences, such as sociology, crime science, health, business and marketing.

Hospital service areas (HSAs) and hospital referral regions (HRRs) are considered more appropriate units than geopolitical units for analyzing the performance of health care markets and policy implementation. GIS Automated Delineation of Hospital Service Areas represents the state-of-the-art approach in delineating HSAs and HRRs by using GIS-automated processes. It provides the best practices for defining such areas scientifically, in a geographically accurate manner, and without a steep learning curve. This book is intended to mainly serve professionals in geography, urban and regional planning, public health, and related fields. It is also useful for scholars in the above fields who have research interests related to GIS and spatial analysis applications in health care. It can be used as a supplemental text for upper-level undergraduate and graduate students in courses related to GIS and public health. Features: Introduces innovative state-of-the-art methods for delineation of HSAs (Dartmouth method, Huff model, network community detection methods) Provides best practices and one-stop solution for related data processing tasks (e.g., distance and travel time estimation, identifying the best-fitting distance decay function) Automates the methods in ArcGIS Pro toolkits Includes free ready-to-download GIS tools and sample data available on authors' website Presents a methodology that is applicable to delineation of other service areas, catchment areas or functional regions for business analysis, planning, and public policy studies

This book shows how Geospatial Information Systems (GIS) can be used for operations management in public institutions. It covers theory and practical applications, ranging from tracking public health trends to mapping transportation routes to charting the safest handling of hazardous materials. Along with an expert line-up of contributors and case studies, the editor provides a complete overview of how to use GIS as part of a successful, collaborative data analysis, and how to translate the information into cost-saving decisions, or even life-saving ones.

This new book explores the rapidly expanding applications of spatial analysis, GIS and remote sensing in the health sciences, and medical geography.

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.

Aimed at all types of public health practitioners and theorists, this book is a compilation of methodological and application developments in spatial epidemiological approaches for environmental and public health studies in the Asia Pacific region. It aims to plug a gap in the literature that has seen a shortage of materials documenting the development of health GIS in this crucial part of the world.

This study guide meets a growing demand for effective GIS training by combining ArcGIS tutorials and self-study exercises that start with the basics and progress to more difficult functionality. Presented in a step-by-step format, the book can be adapted to a reader's specific training needs, from a classroom of graduate students to individual study.

Readers learn to use a range of GIS functionality from creating maps and collecting data to using geoprocessing tools and models for advanced analysis. The authors have incorporated three proven learning methods: scripted exercises that use detailed step-by-step instructions and result graphics, Your Turn exercises that require users to perform tasks without step-by-step instructions, and exercise assignments that pose real-world problem scenarios. A fully functioning, 180-day trial version of ArcView 9.2 software, data for working through the tutorials, and Web-based teacher resources are also included.

Master GIS Applications on Modelling and Mapping the Risks of Diseases Infections transmitted by mosquitoes, ticks, triatomine bugs, sandflies, and black flies cause significant rates of death and disease, especially in developing countries. Why are certain places more susceptible to vector-borne diseases? Modelling Interactions Between Vector-Borne Diseases and Environment Using GIS reveals how using geographic information systems (GISs) can provide a greater understanding of how vector-borne diseases are spread and explores the use of geographical techniques in vector-borne disease monitoring, management, and control. This text provides readers with a better understanding of the vector-borne disease problem and its impact on public health. Introduces New Spatial Approaches Based on Location and Environment The book exposes readers to information on how to identify vector hotspots, determine when and where they can occur, and eliminate vector breeding sites. Utilizing simple illustrations based on real data, as well as the authors' more than 20 years of experience in the field, this text combines key spatial analysis techniques available in modern GIS with real-world applications. It offers step-by-step instruction on developing vector-borne disease risk models at different spatial and temporal scales and helps practitioners formulate disease causation hypotheses and identify areas at risk. In addition, it addresses medical geography, GIS, spatial analysis, and modelling, and covers other factors related to the spread of vector-borne diseases. This book: Gives an overview of common vector-borne diseases, GIS-based mapping and modelling, impacts of climate change on vector distributions, and availability and importance of accurate epidemiologically relevant spatial data Describes modelling and simulating the prevalence of vector-borne diseases around the world Summarizes some key spatial techniques and how they can be used to aid in the analysis of geographical and attributed data Defines the concept of establishing and characterizing spatial data systems, including their quality, errors, references, and issues of scale, and building such a system from often quite separate, disparate sources Shows how to develop weather-based predictive modelling, which can be used to predict the weekly trend of vector abundance Provides a GIS case study for modelling the future potential distribution of vector-borne disease based on different climatic change scenarios Modelling Interactions Between Vector-Borne Diseases and Environment Using GIS combines spatial analysis techniques available in modern GIS, together with real-world applications to provide you with a better understanding of ways to map, model, prevent, and control vector-borne diseases.

GIS for Science: Applying Mapping and Spatial Analytics, Volume 2 shows readers how scientists working on the world's most pressing problems apply geographic information systems--GIS.

GIS for Health and the Environment

This text is the inaugural book in Taylor and Francis's GISDATA series, and is derived from the specialist workshop convened under the auspices of the European Science Foundation's GISDATA Scientific Programme. Generalisation is an integrating tool for the analysis and presentation of spatial data. Effective spatial data analysis requires multiple views of the world at various scales with different thematic layers of representation. Generalisation is a key mechanism in this process, as it filters out information which is required for particular scales or layers; hence it is critical to implement full and comprehensive generalisation capabilities in a GIS, something with which few current GIS are equipped.; This book overviews the core and as-yet unresolved issues surrounding the achievement of this goal, and presents various alternatives - both speculative views and practical examples - in the areas of automated generalisation, vis-a-vis problems such as object simplification and placement. At the same time it distinguishes between modelling with generalisation and graphical representation, and adopts a model-building perspective. It also describes artificial intelligence techniques for implementing automated generalised routines, and addresses issues of data quality and production.; The text is organized into six parts: an introduction; generic issue; object-orientated methods and knowledge-based modelling; knowledge acquisition and representation; data quality; and operation and implementation.

The hard part of problem solving using GIS analysis is the selection of the proper tools. The only practical guide for solving geo-spatial problems independent of specific GIS software and hardware, Practical GIS Analysis will teach you how GIS tools work, and how you can use them to solve problems in both vector and grid GIS worlds. The book inclu

This is a hands-on book about ArcGIS that you work with as much as read. By the end, using Learn ArcGIS lessons, you'll be able to say you made a story map, conducted geographic analysis, edited geographic data, worked in a 3D web scene, built a 3D model of Venice, and more.

Integrating Scale in Remote Sensing and GIS serves as the most comprehensive documentation of the scientific and methodological advances that have taken place in integrating scale and remote sensing data. This work addresses the invariants of scale, the ability to change scale, measures of the impact of scale, scale as a parameter in process models, and the implementation of multiscale approaches as methods and techniques for integrating multiple kinds of remote sensing data collected at varying spatial, temporal, and radiometric scales. Researchers, instructors, and students alike will benefit from a guide that has been pragmatically divided into four thematic groups: scale issues and multiple scaling; physical scale as applied to natural resources; urban scale; and human health/social scale. Teeming with insights that elucidate the significance of scale as a foundation for geographic analysis, this book is a vital resource to those seriously involved in the field of GIScience.

Spatiotemporal Analysis of Air Pollution and Its Application in Public Health reviews, in detail, the tools needed to understand the spatial temporal distribution and trends of air pollution in the atmosphere, including how this information can be tied into the diverse amount of public health data available using accurate GIS techniques. By utilizing GIS to monitor, analyze and visualize air pollution problems, it has proven to not only be the most powerful, accurate and flexible way to understand the atmosphere, but also a great way to understand the impact air pollution has in diverse populations. This book is essential reading for novices and experts in atmospheric science, geography and any allied fields investigating air pollution. Introduces readers to the benefits and uses of geo-spatiotemporal analyses of big data to reveal new and greater understanding of the intersection of air pollution and health Ties in machine learning to improve speed and efficacy of data models Includes developing visualizations, historical data,

and real-time air pollution in large geographic areas

GIS Tutorial for Health, fifth edition, teaches GIS and analysis skills to health professionals and students. Using health-care scenarios, the book demonstrates how to process and visualize health data to better manage services and support health-care policy. GIS Tutorial for Health includes lessons and exercises on mapping basics, including creating map layers, editing features, and using spatial data. The fifth edition is compatible with ArcGIS® 10.2 for Desktop. Exercise data is available for download. Instructor resources are available separately.

Model-based Geostatistics for Global Public Health: Methods and Applications provides an introductory account of model-based geostatistics, its implementation in open-source software and its application in public health research. In the public health problems that are the focus of this book, the authors describe and explain the pattern of spatial variation in a health outcome or exposure measurement of interest. Model-based geostatistics uses explicit probability models and established principles of statistical inference to address questions of this kind. Features: Presents state-of-the-art methods in model-based geostatistics. Discusses the application these methods some of the most challenging global public health problems including disease mapping, exposure mapping and environmental epidemiology. Describes exploratory methods for analysing geostatistical data, including: diagnostic checking of residuals standard linear and generalized linear models; variogram analysis; Gaussian process models and geostatistical design issues. Includes a range of more complex geostatistical problems where research is ongoing. All of the results in the book are reproducible using publicly available R code and data-sets, as well as a dedicated R package. This book has been written to be accessible not only to statisticians but also to students and researchers in the public health sciences. The Authors Peter Diggle is Distinguished University Professor of Statistics in the Faculty of Health and Medicine, Lancaster University. He also holds honorary positions at the Johns Hopkins University School of Public Health, Columbia University International Research Institute for Climate and Society, and Yale University School of Public Health. His research involves the development of statistical methods for analyzing spatial and longitudinal data and their applications in the biomedical and health sciences. Dr Emanuele Giorgi is a Lecturer in Biostatistics and member of the CHICAS research group at Lancaster University, where he formerly obtained a PhD in Statistics and Epidemiology in 2015. His research interests involve the development of novel geostatistical methods for disease mapping, with a special focus on malaria and other tropical diseases. In 2018, Dr Giorgi was awarded the Royal Statistical Society Research Prize "for outstanding published contribution at the interface of statistics and epidemiology." He is also the lead developer of PrevMap, an R package where all the methodology found in this book has been implemented.

The neighborhoods and the biophysical, political, and cultural environments all play a key role in affecting health outcomes of individuals. Unequal spatial distribution of resources such as clinics, hospitals, public transportation, fresh food markets, and schools could make some communities as a whole more vulnerable and less resilient to adverse health effects. This somber reality suggests that it is rather the question of "who you are depends upon where you are" and the fact that health inequality is both a people and a place concern. That is why health inequality needs to be investigated in a spatial setting to deepen our understanding of why and how some geographical areas experience poorer health than others. This book introduces how spatial context shapes health inequalities. Spatial Health Inequalities: Adapting GIS Tools and Data Analysis demonstrates the spatial health inequalities in six most important topics in environmental and public health, including food insecurity, birth health outcomes, infectious diseases, children's lead poisoning, chronic diseases, and health care access. These are the topics that the author has done extensive research on and provides a detailed description of the topic from a global perspective. Each chapter identifies relevant data and data sources, discusses key literature on appropriate techniques, and then illustrates with real data with mapping and GIS techniques. This is a unique book for students, geographers, clinicians, health and research professionals and community members interested in applying GIS and spatial analysis to the study of health inequalities.

Precision Public Health is a new and rapidly evolving field, that examines the application of new technologies to public health policy and practice. It draws on a broad range of disciplines including genomics, spatial data, data linkage, epidemiology, health informatics, big data, predictive analytics and communications. The hope is that these new technologies will strengthen preventive health, improve access to health care, and reach disadvantaged populations in all areas of the world. But what are the downsides and what are the risks, and how can we ensure the benefits flow to those population groups most in need, rather than simply to those individuals who can afford to pay? This is the first collection of theoretical frameworks, analyses of empirical data, and case studies to be assembled on this topic, published to stimulate debate and promote collaborative work.

Authoritative and comprehensive, this is the leading text and professional resource on using geographic information systems (GIS) to analyze and address public health problems. Basic GIS concepts and tools are explained, including ways to access and manage spatial databases. The book presents state-of-the-art methods for mapping and analyzing data on population, health events, risk factors, and health services, and for incorporating geographical knowledge into planning and policy. Numerous maps, diagrams, and real-world applications are featured. The companion Web page provides lab exercises with data that can be downloaded for individual or course use. New to This Edition *Incorporates major technological advances, such as Internet-based mapping systems and the rise of data from cell phones and other GPS-enabled devices. *Chapter on health disparities. *Expanded coverage of public participation GIS. *Companion Web page has all-new content. *Goes beyond the United States to encompass an international focus.

This book defines and discusses how the field of Enterprise Architecture (EA) can be incorporated into the design of Enterprise Geographic Information Systems (EGIS). The objective of EA is to develop a strategic plan that structures an organization's resources (data, information, people, and assets) into one team that works together to achieve the company's objectives in an efficient, agile, and adaptable way. It demonstrates how EA concepts can be incorporated within EGIS by improving the system's efficiency and reliability. Through real-world examples and step-by-step explanations, the reader will reach a comfortable understanding of the theories and methods discussed in the book.

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