

Geographically Weighted Regression A Method For Exploring

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The Geography of Mobility, Wellbeing and Development in China - Wenjie Wu 2020-02-25

Big data is increasingly regarded as a new approach for understanding urban informatics and complex systems. Today, there is unprecedented data availability, with detailed remote-sensed data on the built environment and rich mineable web-based sources in the form of social media, web mapping, information services and other sources of unstructured "big data". This book brings together a group of international contributors to consider the geographical implications of mobility, wellbeing and development within and across Chinese cities through location-based big data perspectives. The degree of urban sprawl, productive density and vibrancy can be reflected from location-based social media big data. The challenge is to identify, map and model these relationships to develop cities at different places in the urban hierarchical system that are more sustainable. This edited book aims to tackle these issues through two inter-related geographical scales: inter-city level and intra-city level. The text is designed for graduate courses in planning, geography, public policy and administration, and for international researchers who are involved in urban and regional economics and economic geography.

Geospatial Technology for Human Well-Being and Health - Faruque 2022-03-21

Over the last thirty years or so, there have been tremendous advancements in the area of geospatial health; however, somehow, two aspects have not received as much attention as they should have received. These are a) limitations of different spatial analytical tools and b) progress in making geospatial environmental exposure data available for advanced health science research and for medical practice. This edited volume addresses those two less explored areas of geospatial health with augmented discussions on the theories, methodologies and limitations of contemporary geospatial technologies in a wide range of applications related to human well-being and health. In 20 chapters, readers are presented with an up-to-date assessment of geospatial technologies with an emphasis on understanding general geospatial principles and methodologies that are often overlooked in the research literature. As a result, this book will be of interest to both newcomers and experts in geospatial analysis and will appeal to students and researchers engaged in studying human well-being and health. Chapters are presenting new concepts, new analytical methods and contemporary applications within the framework of geospatial applications in human well-being and health. The topics addressed by the various chapter authors include analytical approaches, newer areas of geospatial health application, introduction to unique resources, geospatial modeling, and environmental pollution assessments for air, water and soil. Although geospatial experts are expected to be the primary readers, this book is designed in such a way so that the public health professionals, environmental health scientists and clinicians also find it useful with or without any familiarity with geospatial analysis.

Spatial Analysis Methods of Road Traffic Collisions - Becky P. Y. Loo 2015-09-21

Examine the Prevalence and Geography of Road Collisions Spatial Analysis Methods of Road Traffic Collisions centers on the geographical nature of road crashes, and uses spatial methods to provide a greater understanding of the patterns and processes that cause them. Written by internationally known experts in the field of transport geography, the book *Handbook of Regional Growth and Development Theories* - Roberta Capello 2019

Regional economics - an established discipline for several decades - has undergone a period of rapid change in the last ten years resulting in the emergence of several new perspectives. At the same time the methodology of regional economics has also experienced some surprising developments. This fully revised and updated Handbook brings together contributions looking at new pathways in regional economics, written by

many well-known international scholars. The aim is to present the most cutting-edge theories explaining regional growth and local development. The authors highlight the recent advances in theories, the normative potentialities of these theories and the cross-fertilization of ideas between regional and mainstream economists. It will be an essential source of reference and information for both scholars and students in the field.

The Economy as a Complex Spatial System - Pasquale Commendatore 2017-09-18

This book is open access under a CC BY-NC 4.0 license. This collected volume represents the final outcome of the COST Action IS1104 "The EU in the new complex geography of economic systems: models, tools and policy evaluation". Visualizing the EU as a complex and multi-layered network, the book is organized in three parts, each of them dealing with a different level of analysis: At the macro-level, Part I considers the interactions within large economic systems (regions or countries) involving trade, workers migration, and other factor movements. At the meso-level, Part II discusses interactions within specific but wide-ranging markets, with a focus on financial markets and banking systems. Lastly, at the micro-level, Part III explores the decision-making of single firms, especially in the context of location decisions.

Geographically Weighted Regression - A. Stewart Fotheringham 2003-02-21

Geographical Weighted Regression (GWR) is a new local modelling technique for analysing spatial analysis. This technique allows local as opposed to global models of relationships to be measured and mapped. This is the first and only book on this technique, offering comprehensive coverage on this new 'hot' topic in spatial analysis. * Provides step-by-step examples of how to use the GWR model using data sets and examples on issues such as house price determinants, educational attainment levels and school performance statistics * Contains a broad discussion of and basic concepts on GWR through to ideas on statistical inference for GWR models * uniquely features accompanying author-written software that allows users to undertake sophisticated and complex forms of GWR within a user-friendly, Windows-based, front-end (see book for details).

High Accuracy Surface Modeling Method: The Robustness - Na Zhao 2021-08-11

This book focuses on the robustness analysis of high accuracy surface modeling method (HASM) to yield good performance of it. Understanding the sensitivity and uncertainty is important in model applications. The book aims to advance an integral framework for assessing model error that can demonstrate robustness across sets of possible controls, variable definitions, standard error, algorithm structure, and functional forms. It is an essential reference to the most promising numerical models. In areas where there is less certainty about models, but also high expectations of transparency, robustness analysis should aspire to be as broad as possible. This book also contains a chapter at the end featuring applications in climate simulation illustrating different implementations of HASM in surface modeling. The book is helpful for people involved in geographical information science, ecological informatics, geography, earth observation, and planetary surface modeling.

Applications of Information Theory to Epidemiology - Gareth Hughes 2021-04-14

• Applications of Information Theory to Epidemiology collects recent research findings on the analysis of diagnostic information and epidemic dynamics. • The collection includes an outstanding new review article by William Benish, providing both a historical overview and new insights. • In research articles, disease diagnosis and disease dynamics are viewed from both clinical medicine and plant pathology perspectives. Both theory and applications are discussed. • New theory is presented, particularly in the area of diagnostic decision-making taking account of

predictive values, via developments of the predictive receiver operating characteristic curve. • New applications of information theory to the analysis of observational studies of disease dynamics in both human and plant populations are presented.

Geographic Data Mining and Knowledge Discovery - Harvey J. Miller
2009-05-27

The Definitive Volume on Cutting-Edge Exploratory Analysis of Massive Spatial and Spatiotemporal Databases Since the publication of the first edition of *Geographic Data Mining and Knowledge Discovery*, new techniques for geographic data warehousing (GDW), spatial data mining, and geovisualization (GVis) have been developed. In addition, there has been

Computational Science and Its Applications -- ICCSA 2013 - Beniamino Murgante 2013-06-22

The five-volume set LNCS 7971-7975 constitutes the refereed proceedings of the 13th International Conference on Computational Science and Its Applications, ICCSA 2013, held in Ho Chi Minh City, Vietnam in June 2013. The 248 revised papers presented in five tracks and 33 special sessions and workshops were carefully reviewed and selected. The 46 papers included in the five general tracks are organized in the following topical sections: computational methods, algorithms and scientific applications; high-performance computing and networks; geometric modeling, graphics and visualization; advanced and emerging applications; and information systems and technologies. The 202 papers presented in special sessions and workshops cover a wide range of topics in computational sciences ranging from computational science technologies to specific areas of computational sciences such as computer graphics and virtual reality.

GIS and the Social Sciences - Dimitris Ballas 2017-09-18

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.

Topics on Methodological and Applied Statistical Inference - Tonio Di Battista 2016-10-11

This book brings together selected peer-reviewed contributions from various research fields in statistics, and highlights the diverse approaches and analyses related to real-life phenomena. Major topics covered in this volume include, but are not limited to, bayesian inference, likelihood approach, pseudo-likelihoods, regression, time series, and data analysis as well as applications in the life and social sciences. The software packages used in the papers are made available by the authors. This book is a result of the 47th Scientific Meeting of the Italian Statistical Society, held at the University of Cagliari, Italy, in 2014.

International Encyclopedia of Human Geography - 2019-11-29

International Encyclopedia of Human Geography, Second Edition embraces diversity by design and captures the ways in which humans share places and view differences based on gender, race, nationality, location and other factors—in other words, the things that make people and places different. Questions of, for example, politics, economics, race relations and migration are introduced and discussed through a geographical lens. This updated edition will assist readers in their research by providing factual information, historical perspectives, theoretical approaches, reviews of literature, and provocative topical

discussions that will stimulate creative thinking. Presents the most up-to-date and comprehensive coverage on the topic of human geography Contains extensive scope and depth of coverage Emphasizes how geographers interact with, understand and contribute to problem-solving in the contemporary world Places an emphasis on how geography is relevant in a social and interdisciplinary context

International Encyclopedia of Geography, 15 Volumes - Neil Castree
2017-03-20

Representing the definitive reference work for this broad and dynamic field, *The International Encyclopedia of Geography* arises from an unprecedented collaboration between Wiley and the American Association of Geographers (AAG) to review and define the concepts, research, and techniques in geography and interrelated fields. Available as a robust online resource and as a 15-volume full-color print set, the *Encyclopedia* assembles a truly global group of scholars for a comprehensive, authoritative overview of geography around the world. Contains more than 1,000 entries ranging from 1,000 to 10,000 words offering accessible introductions to basic concepts, sophisticated explanations of complex topics, and information on geographical societies around the world Assembles a truly global group of more than 900 scholars hailing from over 40 countries, for a comprehensive, authoritative overview of geography around the world Provides definitive coverage of the field, encompassing human geography, physical geography, geographic information science and systems, earth studies, and environmental science Brings together interdisciplinary perspectives on geographical topics and techniques of interest across the social sciences, humanities, science, and medicine Features full color throughout the print version and more than 1,000 illustrations and photographs Annual updates to online edition

Hedonic Methods in Housing Markets - Andrea Baranzini 2008-09-20

Cities are growing worldwide and their sprawl is increasingly challenged for its pressure on open spaces and environmental quality. Economic arguments can help to decide about the trade-off between preserving environmental quality and developing housing and business surfaces, provided the benefits of environmental quality are adequately quantified. To this end, this book focuses on the use and advancement of the “hedonic approach”, an economic valuation technique that analyses and quantifies the sources of rent and property price differentials. Starting from theoretical foundations, the hedonic approach is applied to the valuation of natural land use preservation and noise abatement measures, as well as to residential segregation and discrimination, extending the analysis to the role of the buyers and sellers' identity on housing market prices and to the issue of environmental justice.

Handbook of Quantitative Criminology - Alex R. Piquero 2009-12-16

Quantitative criminology has certainly come a long way since I was first introduced to a largely qualitative criminology some 40 years ago, when I was recruited to lead a task force on science and technology for the President's Commission on Law Enforcement and Administration of Justice. At that time, criminology was a very limited activity, depending almost exclusively on the Uniform Crime Reports (UCR) initiated by the FBI in 1929 for measurement of crime based on victim reports to the police and on police arrests. A typical mode of analysis was simple bivariate correlation. Marvin Wolfgang and colleagues were making an important advance by tracking longitudinal data on arrests in Philadelphia, an innovation that was widely appreciated. And the field was very small: I remember attending my first meeting of the American Society of Criminology in about 1968 in an anteroom at New York University; there were about 25-30 people in attendance, mostly sociologists with a few lawyers thrown in. That Society today has over 3,000 members, mostly now drawn from criminology which has established its own clear identity, but augmented by a wide variety of disciplines that include statisticians, economists, demographers, and even a few engineers. This *Handbook* provides a remarkable testimony to the growth of that field. Following the maxim that “if you can't measure it, you can't understand it,” we have seen the early dissatisfaction with the UCR replaced by a wide variety of new approaches to measuring crime victimization and offending.

Statistical Methods for Geography - Peter A Rogerson 2014-11-17

How do beginning students of statistics for geography learn to fully understand the key concepts and apply the principal techniques? This text, now in its Fourth Edition, provides exactly that resource. Accessibly written, and focussed on student learning, it's a statistics 101 that includes definitions, examples, and exercise throughout. Now fully integrated with online self-assessment exercises and video navigation, it explains everything required to get full credits for any undergraduate

statistics module: Descriptive statistics, probability, inferential statistics, hypothesis testing and sampling, variance, correlation, regression analysis, spatial patterns, spatial data reduction using factor analysis and cluster analysis. Exercises in the text are complemented with online exercise and prompts that test the understanding of concepts and techniques, additional online exercises review understanding of the entire chapter, relating concepts and techniques. Completely revised and updated for accessibility, including new material (on measures of distance, statistical power, sample size selection, and basic probability) with related exercises and downloadable datasets. It is the only text required for undergraduate modules in statistical analysis, statistical methods, and quantitative geography.

Quantitative Geography A Stewart Fotheringham 2000-01-11

Integrating a discussion of the application of quantitative methods with practical examples, this book explains the philosophy of the new quantitative methodologies and contrasts them with the methods associated with geography's 'Quantitative Revolution' of the 1960s. Key issues discussed include: the nature of modern quantitative geography; spatial data; geographical information systems; visualization; local analysis; point pattern analysis; spatial regression; and statistical inference. Concluding with a review of models used in spatial theory, the authors discuss the current challenges to spatial data analysis. Written to be accessible, to communicate the diversity and excitement of recent thinking, *Quantitative Geography* will be required reading for students and researchers in any discipline where quantitative methods are used to analyse spatial data. 'This is a veritable tour de force of everything that is exciting about quantitative geography and GIS. It is a timely, thorough and exciting account of the state of the art and science of spatial analysis' - Paul Longley, University of Bristol 'A highly innovative and up-to-date text. It is unique in its coverage of the many developments that have taken place in the field over the past few years. The book is one that is highly readable and stimulating for those with some background in the field, and its expository style and many examples will make it stimulating to newcomers as well' - Peter Rogerson, State University of New York at Buffalo 'Brings the field thoroughly up to date, integrating modern methods of GIS with a comprehensive and easy-to-read overview of the most recent and powerful techniques of spatial analysis. The book will be valuable to students and researchers in any discipline that seeks to explore or explain phenomena in geographical context, and will make excellent reading for geographers, political scientists, criminologists, anthropologists, geologists, epidemiologists, ecologists, and many others. It offers a spirited challenge to critics of a scientific approach to social science, and demonstrates the value of its subject matter through abundant examples' - Michael Goodchild, National Center for Geographic Information and Analysis, University of California, Santa Barbara 'There is a view within some parts of academic geography that what used to be called "quantitative geography" is dead, having been subsumed within "geographical information systems" or else of no continuing interest. This book should correct this view. First, it shows that quantitative methods have remained an exciting area of development and, second, it shows that, if anything, they have more relevance to substantive problems of interest than they have ever had. Although not specifically about GIS, it is a book that should be read by everyone concerned with the analysis of geographical information' - David Unwin, Birkbeck College, University of London

Computational Science and Its Applications - ICCSA 2005 Gervasi 2005-04-27

The four-volume set LNCS 3480-3483 constitutes the refereed proceedings of the International Conference on Computational Science and Its Applications, ICCSA 2005, held in Singapore in May 2005. The four volumes present a total of 540 papers selected from around 2700 submissions. The papers span the whole range of computational science, comprising advanced applications in virtually all sciences making use of computational techniques as well as foundations, techniques, and methodologies from computer science and mathematics, such as high performance computing and communication, networking, optimization, information systems and technologies, scientific visualization, graphics, image processing, data analysis, simulation and modelling, software systems, algorithms, security, multimedia etc.

Classics from IJGIS - Peter Fisher 2006-07-20

The past 20 years can be regarded as the adolescence of geographic information science (GIS), as it grew from a burgeoning area of study into a mature and thriving field. During those two decades, the *International Journal of Geographic Information Science* (formerly *Systems*) (IJGIS) was one of the most prominent academic guiding forces

in GIScience

Computational Intelligence for COVID-19 and Future Pandemics Kose 2022-01-01

The book covers a wide topic collection starting from essentials of Computational Intelligence to advance, and possible application types against COVID-19 as well as its effects on the field of medical, social, and different data-oriented research scopes. Among these topics, the book also covers very recently, vital topics in terms of fighting against COVID-19 and solutions for future pandemics. The book includes the use of computational intelligence for especially medical diagnosis and treatment, and also data-oriented tracking-predictive solutions, which are key components currently for fighting against COVID-19. In this way, the book will be a key reference work for understanding how computational intelligence and the most recent technologies (i.e. Internet of Healthcare Thing, big data, and data science techniques) can be employed in solution phases and how they change the way of future solutions. The book also covers research works with negative results so that possible disadvantages of using computational intelligence solutions and/or experienced side-effects can be known widely for better future of medical solutions and use of intelligent systems against COVID-19 and pandemics. The book is considering both theoretical and applied views to enable readers to be informed about not only research works but also theoretical views about essentials/components of intelligent systems against COVID-19/pandemics, possible modeling scenarios with current and future perspective as well as solution strategies thought by researchers all over the world.

Environmental Criminology Martin A. Andresen 2019-10-08

The field of environmental criminology is a staple theoretical framework in contemporary criminological theory. This fully revised and expanded edition of the world's first comprehensive and sole-authored textbook on this influential school of criminological thought covers a wide range of topics, including: the origins of environmental criminology; the primary theoretical frameworks, such as routine activity theory, geometry of crime, rational choice theory, and the pattern theory of crime; the practical application of environmental criminology; an examination of how theories are operationalized and tested; and policy implications for the practice of crime prevention. As well as these popular topics, Martin Andresen also discusses a number of topics that are at the leading edge of research within environmental criminology. New to the second edition are chapters on empirical support for the various models of crime prevention covered and on the growing literature on "the journey to crime". This text will be ideal for courses on crime prevention, where students are often encouraged to consider policy problems and apply theory to practice. This book offers up environmental criminology as a theoretical framework for making sense of complex neighborhood problems, so it is also perfect for courses on geography of crime, crime analysis, and, indeed, environmental criminology. It would also be a good supplement for courses on criminological theory.

Applied Bayesian Modelling - Peter Congdon 2014-05-23

This book provides an accessible approach to Bayesian computing and data analysis, with an emphasis on the interpretation of real data sets. Following in the tradition of the successful first edition, this book aims to make a wide range of statistical modeling applications accessible using tested code that can be readily adapted to the reader's own applications. The second edition has been thoroughly reworked and updated to take account of advances in the field. A new set of worked examples is included. The novel aspect of the first edition was the coverage of statistical modeling using WinBUGS and OPENBUGS. This feature continues in the new edition along with examples using R to broaden appeal and for completeness of coverage.

Application of Geographic Information Systems - Bhuiyan Monwar Alam 2012-10-31

The importance of Geographic Information Systems (GIS) can hardly be overemphasized in today's academic and professional arena. More professionals and academics have been using GIS than ever - urban *Handbook of Applied Spatial Analysis* Manfred M. Fischer 2009-12-24 The Handbook is written for academics, researchers, practitioners and advanced graduate students. It has been designed to be read by those new or starting out in the field of spatial analysis as well as by those who are already familiar with the field. The chapters have been written in such a way that readers who are new to the field will gain important overview and insight. At the same time, those readers who are already practitioners in the field will gain through the advanced and/or updated tools and new materials and state-of-the-art developments included. This volume provides an accounting of the diversity of current and emergent

approaches, not available elsewhere despite the many excellent journals and te- books that exist. Most of the chapters are original, some few are reprints from the Journal of Geographical Systems, Geographical Analysis, The Review of Regional Studies and Letters of Spatial and Resource Sciences. We let our contributors - velop, from their particular perspective and insights, their own strategies for m- ping the part of terrain for which they were responsible. As the chapters were submitted, we became the first consumers of the project we had initiated. We gained from depth, breadth and distinctiveness of our contributors' insights and, in particular, the presence of links between them.

Modelling Geographical Systems - B. Boots 2013-11-11

This book presents a selection of innovative ideas currently shaping the development and testing of geographical systems models by means of statistical and computational approaches. It spans all geographic scales, deals with both individuals and aggregates, and represents natural, human, and integrated spatial systems. This book is relevant to researchers, (post and under)graduates, and professionals in the areas of quantitative geography, spatial analysis, spatial modelling, and geographical information sciences.

Ecological Monitoring, Assessment, and Management in Freshwater Systems - Young-Seuk Park 2018-09-27

This book is a printed edition of the Special Issue "Ecological Monitoring, Assessment, and Management in Freshwater Systems" that was published in Water

GIS and Crime Mapping - Spencer Chainey 2013-04-26

The growing potential of GIS for supporting policing and crimereduction is now being recognised by a broader community. GIS canbe employed at different levels to support operational policing,tactical crime mapping, detection, and wider-ranging strategicanalyses. With the use of GIS for crime mapping increasing, thisbook provides a definitive reference. GIS and Crime Mapping provides essential information andreference material to support readers in developing andimplementing crime mapping.

Relevant case studies help demonstratethe key principles, concepts and applications of crime mapping. This book combines the topics of theoretical principles, GIS,analytical techniques, data processing solutions, informationsharing, problem-solving approaches, map design, and organisationalstructures for using crime mapping for policing and crimereduction. Delivered in an accessible style, topics are covered ina manner that underpins crime mapping use in the three broad areasof operations, tactics and strategy. Provides a complete start-to-finish coverage of crime mapping,including theory, scientific methodologies, analysis techniques anddesign principles. Includes a comprehensive presentation of crime mappingapplications for operational, tactical and strategic purposes. Includes global case studies and examples to demonstrate goodpractice. Co-authored by Spencer Chainey, a leading researcher andconsultant on GIS and crime mapping, and Jerry Ratcliffe, a renowned professor and former police officer. This book is essential reading for crime analysts and otherprofessionals working in intelligence roles in law enforcement orcrime reduction, at the local, regional and national governmentlevels. It is also an excellent reference for undergraduateand Masters students taking courses in GIS, Geomatics, CrimeMapping, Crime Science, Criminal Justice and Criminology.

Encycl opedi a of GI-SShashi 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.

Sensing Tools and Techniques for COVID-19 - Chaudhery Mustansar Hussain 2022-07-29

Sensing Tools and Techniques for COVID-19: Developments and Challenges in Analysis and Detection of Coronavirus helps readers understand the basic principles of sensor development. Sections give a brief overview of the physical and chemical properties of sensing tools and the basics of techniques. With recent advancements in sensing technology, various smart materials and techniques are now being employed for new purposes. In addition, biosensing devices can be tuned at the molecular level to perform better detection of COVID-19. This book covers the various approaches for the development and fabrication

of biosensor systems for the analysis of the novel coronavirus. In addition, the book discusses the commercialization and standardization of biosensing technology, along with future perspectives on biosensor technologies used for the analysis and treatment of COVID-19. This book will serve as an up-to-date source of trusted information on biosensor tools and techniques for the analysis of COVID-19. Provides an in-depth look at current sensing tools and devices and their applicability in healthcare Demonstrates the different integration approaches for the development of biosensor systems, along with design and commercialization guidelines Presents a strategic approach for the contact-less analysis of COVID-19

Progress in Geospatial Analysis - Yuji Murayama 2012-07-06

This book examines current trends and developments in the methods and applications of geospatial analysis and highlights future development prospects. It provides a comprehensive discussion of remote sensing- and geographical information system (GIS)-based data processing techniques, current practices, theories, models, and applications of geospatial analysis. Data acquisition and processing techniques such as remote sensing image selections, classifications, accuracy assessments, models of GIS data, and spatial modeling processes are the focus of the first part of the book. In the second part, theories and methods related to fuzzy sets, spatial weights and prominence, geographically weighted regression, weight of evidence, Markov-cellular automata, artificial neural network, agent-based simulation, multi-criteria evaluation, analytic hierarchy process, and a GIS network model are included. Part three presents selected best practices in geospatial analysis. The chapters, all by expert authors, are arranged so that readers who are new to the field will gain an overview and important insights. Those readers who are already practitioners will gain from the advanced and updated materials and state-of-the-art developments in geospatial analysis.

Mass Appraisal Methods - Tom Kauko 2009-01-28

This book takes a cross-disciplinary and cross-cultural look atmass appraisal expertise for property valuation in different marketconditions, and offers some cutting- edge approaches. The editors establish an international platform and present thescientific debate as well as practical feasibility considerations.Heretic and orthodox valuation methods are assessed based onspecific criteria, partly technical and partly institutional.Methodological evaluation is approached using two types ofcriteria: operational concerns about how to determine propertyvalue differentials between spatial and functional units of realestate in a valid and reliable way (technical criteria); and thekind of market circumstances being operated in (institutionalcriteria). While technical criteria are relatively well-researched,there is little theoretically informed work on the connectionbetween country context and selection of property appraisalmethods. The book starts with an examination of current mass propertyappraisal practices, presenting case studies from widely differingmarkets - from the American and Dutch, where regression-basedmethods have been used successfully for some time; to the EasternEuropean and other emerging economies, where limitations have to becomepensated by focusing on the modelling assumptions. The second part of the book looks at sophisticated modellingapproaches, some of which represent combinations of elements fromtwo or more techniques. Whatever the exact modelling approach, therequirements are always high for the quality of the data andsuitability of the method. In the final section, methods areevaluated and compared according to technical criteria and againstinstitutional contexts.With its exceptionally wide coverage ofvaluation issues, Mass Appraisal Methods: an internationalperspective for property valuers addresses property valuationproblems common to different countries and approaches applicable inboth developed and emerging economies.

Sustainable Water Resource Development Using Coastal Reservoirs - T.G. Sitharam 2020-07-29

Coastal reservoirs are viewed in many regions of the world as an emerging concept of storing fresh water when the river basin is in flood. Similar reservoirs (or impoundments) can be used to generate tidal renewable energy and/or provide the catalysis for urban regeneration. Constructed near the coast in natural river basins, these reservoirs have a smaller environmental footprint and are less obstructive than inland dams. Written by an international group of Civil, Environmental, and Geotechnical Engineers, Sustainable Water Resource Development using Coastal Reservoirs discusses the latest research and breakthroughs in their use, while offering expert advice into their sustainable design and construction. The perfect reference for researchers exploring the feasibility of this emerging technology or experienced professionals who

wish to implement this technology as a water scarcity solution or a tidal renewable energy source or for urban regeneration, Sustainable Water Resource Development using Coastal Reservoirs provides an expert resource to the design, construction and use of coastal reservoirs. The reference begins with a brief but readable examination of water quantity, quality design and geotechnical considerations. The book includes international case studies to clearly illustrate the various uses, design, planning, construction, and operation methods. These case studies include projects such as: Afsluitdijk in the IJsselmeer, (Netherlands), Zuiderzee (Netherlands), Thanneermukkom Bund (India), Sihwa (South Korea), Saemangeum, (South Korea), Chenhang (China), Plover Cove (China), and Marina Barrage (Singapore). Explores the feasibility/design implications for Coastal Reservoirs based on estimation of runoff, detailed assessment of water demand and estimation of water quality Provides design schemes/procedures for the construction and operation of coastal reservoirs Includes case studies to illustrate the design, planning, construction and operations of coastal reservoirs from around the world

Data Analysis and Related Applications, Volume 1 - Konstantinos N. Zafeiris 2022-11-01

The scientific field of data analysis is constantly expanding due to the rapid growth of the computer industry and the wide applicability of computational and algorithmic techniques, in conjunction with new advances in statistical, stochastic and analytic tools. There is a constant need for new, high-quality publications to cover the recent advances in all fields of science and engineering. This book is a collective work by a number of leading scientists, computer experts, analysts, engineers, mathematicians, probabilists and statisticians who have been working at the forefront of data analysis and related applications. The chapters of this collaborative work represent a cross-section of current concerns, developments and research interests in the above scientific areas. The collected material has been divided into appropriate sections to provide the reader with both theoretical and applied information on data analysis methods, models and techniques, along with related applications.

Advances in Automated Valuation Modeling - Maurizio d'Amato 2017-01-28

This book addresses several problems related to automated valuation methodologies (AVM). Following the non-agency mortgage crisis, it offers a variety of approaches to improve the efficiency and quality of an automated valuation methodology (AVM) dealing with emerging problems and different contexts. Spatial issue, evolution of AVM standards, multilevel models, fuzzy and rough set applications and quantitative methods to define comparables are just some of the topics discussed.

Applied Spatial Modelling and Planning - John R. Lombard 2016-10-04

This book highlights the extraordinary range of areas to which geographical analysis and spatial modelling can bring lessons and insights. It shows how these techniques have been used to address 'real world' issues that are of concern to international organisations, public agencies and businesses, as illustrated by actual funded projects that geographers have developed collaboratively with end-users. Applied Spatial Modelling and Planning shows how much geographical research is policy relevant to a wide variety of agencies through the use of GIS and spatial modelling in applied geography. The book's chapters contain a cross-section of innovative applications and approaches to problem solving within five major domains of the dynamics of economic space, housing and settlements, population movements and population ageing, health care, and the environment. Using a number of case studies on the use of GIS and spatial modelling, this book demonstrates the fact that much of what is done by quantitative geographers is not only relevant within academia, but also has use in policy work. This book will appeal to an international audience interested in cutting-edge spatial modelling to better understand the processes involved in solving real problems.

[The Oxford Handbook of Environmental Criminology](#) - Gerben J.N.

Bruinsma 2018-02-08

The study of how the environment, local geography, and physical locations influence crime has a long history that stretches across many research traditions. These include the neighborhood effects approach developed in the 1920s, the criminology of place, and a newer approach that attends to the perception of crime in communities. Aided by new technologies and improved data-reporting in recent decades, research in environmental criminology has developed rapidly within each of these approaches. Yet research in the subfield remains fragmented and competing theories are rarely examined together. The Oxford Handbook of Environmental Criminology takes a unique approach and synthesizes the contributions of existing methods to better integrate the subfield as a whole. Gerben J.N. Bruinsma and Shane D. Johnson have assembled a cast of top scholars to provide an in-depth source for understanding how and why physical setting can influence the emergence of crime, affect the environment, and impact individual or group behavior. The contributors address how changes in the environment, global connectivity, and technology provide more criminal opportunities and new ways of committing old crimes. They also explore how crimes committed in countries with distinct cultural practices like China and West Africa might lead to different spatial patterns of crime. This is a state-of-the-art compendium on environmental criminology that reflects the diverse research and theory developed across the western world.

Spatial Analysis Methods and Practice - George Grekousis 2020-03-31

This is an introductory textbook on spatial analysis and spatial statistics through GIS. Each chapter presents methods and metrics, explains how to interpret results, and provides worked examples. Topics include: describing and mapping data through exploratory spatial data analysis; analyzing geographic distributions and point patterns; spatial autocorrelation; spatial clustering; geographically weighted regression and OLS regression; and spatial econometrics. The worked examples link theory to practice through a single real-world case study, with software and illustrated guidance. Exercises are solved twice: first through ArcGIS, and then GeoDa. Through a simple methodological framework the book describes the dataset, explores spatial relations and associations, and builds models. Results are critically interpreted, and the advantages and pitfalls of using various spatial analysis methods are discussed. This is a valuable resource for graduate students and researchers analyzing geospatial data through a spatial analysis lens, including those using GIS in the environmental sciences, geography, and social sciences.

[A Primer for Spatial Econometrics](#) - G. Arbia 2014-06-30

This book aims at meeting the growing demand in the field by introducing the basic spatial econometrics methodologies to a wide variety of researchers. It provides a practical guide that illustrates the potential of spatial econometric modelling, discusses problems and solutions and interprets empirical results.

Quantitative Methods in Tourism Economics - Álvaro Matias 2012-12-13

Tourism economics is partly based on established principles from the economics discipline, but it also incorporates elements from sociology, psychology, organization theory and ecology. It has over the years turned into an appealing multi-disciplinary oriented approach to the understanding of the impacts of leisure time in a modern society, including cultural heritage, sustainable quality of life, and industrial organization of the hospitality industry. The increasing dynamics in the tourist industry and its worldwide effects will continue to attract the attention of both the research and the policy sector in the years to come. Rather than speculating on non-observed facts, there is a clear need for evidence-based research in order to map out the complex dynamics of the tourist industry. The present volume comprises novel studies - mainly of a quantitative-analytical nature - on the supply, demand and contextual aspects of modern tourism. It contains a sound mix of theory, methodology, policy and case studies on various tourism issues in different parts of the world.