

## Package Kmlshape R

The Federal Provincial Groundwater Working Group is an ad hoc committee composed of groundwater managers representing all provinces and several federal departments that evolved from national groundwater management workshops held over the past three years. These guidelines were developed taking into account all major existing groundwater databases in Canada and some that were under development. This document discusses the purposes of groundwater databanks, the objectives in establishing complicity between the databanks, the rationale for developing guidelines for groundwater data management, and the types of data likely to be exchanged. It summarizes the data fields related to site information, well construction details, formation logging, water levels, well performance, aquifer yield, pump test information, water quality sampling information, and water quality measurements, and standardizes the fields and terminology.

**THE MOST PRACTICAL, UP-TO-DATE GUIDE TO MODELLING AND ANALYZING TIME-TO-EVENT DATA—NOW IN A VALUABLE NEW EDITION** Since publication of the first edition nearly a decade ago, analyses using time-to-event methods have increase considerably in all areas of scientific inquiry mainly as a result of model-building methods available in modern statistical software packages. However, there has been minimal coverage in the available literature to9 guide researchers, practitioners, and students who wish to apply these methods to health-related areas of study. Applied Survival Analysis, Second Edition provides a comprehensive and up-to-date introduction to regression modeling for time-to-event data in medical, epidemiological, biostatistical, and other health-related research. This book places a unique emphasis on the practical and contemporary applications of regression modeling rather than the mathematical theory. It offers a clear and accessible presentation of modern modeling techniques supplemented with real-world examples and case studies. Key topics covered include: variable selection, identification of the scale of continuous covariates, the role of interactions in the model, assessment of fit and model assumptions, regression diagnostics, recurrent event models, frailty models, additive models, competing risk models, and missing data. Features of the Second Edition include: Expanded coverage of interactions and the covariate-adjusted survival functions The use of the Worcester Heart Attack Study as the main modeling data set for illustrating discussed concepts and techniques New discussion of variable selection with multivariable fractional polynomials Further exploration of time-varying covariates, complex with examples Additional treatment of the exponential, Weibull, and log-logistic parametric regression models Increased emphasis on interpreting and using results as well as utilizing subset imputation methods to analyze data with missing values New examples and exercises at the end of each chapter Analyses throughout the text are performed using Stata® Version 9, and an accompanying FTP site contains the data sets used in the book. Applied Survival Analysis, Second Edition is an ideal book for graduate-level courses in biostatistics, statistics, and epidemiologic methods. It also serves as a valuable reference for practitioners and researchers in any health-related field or for professionals in insurance and government.

Game-theoretic probability and finance come of age Glenn Shafer and Vladimir Vovk's Probability and Finance, published in 2001, showed that perfect-information games can be used to define mathematical probability. Based on fifteen years of further research, Game-Theoretic Foundations for Probability and Finance presents a mature view of the foundational role game theory can play. Its account of probability theory opens the way to new methods of prediction and testing and makes many statistical methods more transparent and widely usable. Its contributions to finance theory include purely game-theoretic accounts of Itô's stochastic calculus, the capital asset pricing model, the equity premium, and portfolio theory. Game-theoretic Probability and Finance is a book of research. It is also a teaching resource. Each chapter is supplemented with carefully designed exercises and notes relating the new theory to its historical context. Praise from early readers "Ever since Kolmogorov's Grundbegriffe, the standard mathematical treatment of probability theory has been measure-theoretic. In this ground-breaking work, Shafer and Vovk give a game-theoretic foundation instead. While being just as rigorous, the game-theoretic approach allows for vast and useful generalizations of classical measure-theoretic results, while also giving rise to new, radical ideas for prediction, statistics and mathematical finance without stochastic assumptions. The authors set out their theory in great detail, resulting in what is definitely one of the most important books on the foundations of probability to have appeared in the last few decades." – Peter Gr uwald, CWI and University of Leiden "Shafer and Vovk have thoroughly re-written their 2001 book on the game-theoretic foundations for probability and for finance. They have included an account of the tremendous growth that has occurred since, in the game-theoretic and pathwise approaches to stochastic analysis and in their applications to continuous-time finance. This new book will undoubtedly spur a better understanding of the foundations of these very important fields, and we should all be grateful to its authors." – Ioannis Karatzas, Columbia University

Up-to-Date Guidance from One of the Foremost Members of the R Core Team Written by John M. Chambers, the leading developer of the original S software, Extending R covers key concepts and techniques in R to support analysis and research projects. It presents the core ideas of R, provides programming guidance for projects of all scales, and introduces new, valuable techniques that extend R. The book first describes the fundamental characteristics and background of R, giving readers a foundation for the remainder of the text. It next discusses topics relevant to programming with R, including the apparatus that supports extensions. The book then extends R's data structures through object-oriented programming, which is the key technique for coping with complexity. The book also incorporates a new structure for interfaces applicable to a variety of languages. A reflection of what R is today, this guide explains how to design and organize extensions to R by correctly using objects, functions, and interfaces. It enables current and future users to add their own contributions and packages to R. A 2017 Choice Outstanding Academic Title

Effective Modeling in RDFS and OWL

Guidelines

Proceedings of MEDICON 2019, September 26-28, 2019, Coimbra, Portugal

Plan B 3.0: Mobilizing to Save Civilization

Introduction to Bayesian Statistics

Explanatory Model Analysis Explore, Explain and Examine Predictive Models is a set of methods and tools designed to build better predictive models and to monitor their behaviour in a changing environment. Today, the true bottleneck in predictive modelling is neither the lack of data, nor the lack of computational power, nor inadequate algorithms for model exploration (extraction of relationships learned by the model), model explanation (understanding the key factors influencing model decisions) and model examination (identifying model weaknesses and evaluation of model's performance). This book presents a collection of model agnostic methods that may be used for applications to classification and regression problems.

The Wiley-Interscience Paperback Series consists of selected books that have been made more accessible to consumers in an effort to increase global appeal and general circulation. With these new unabridged softcover volumes, Wiley hopes to extend the lives of these works by making them available to future generations of statisticians increasingly important and practical subject of finding groupings in data. The authors set out to write a book for the user who does not necessarily have an extensive background in mathematics. They succeed very well." —Mathematical Reviews "Finding Groups in Data [is] a clear, readable, and interesting presentation of a small number of some interesting innovations of applied value to clustering literature." —Journal of Classification "This is a very good, easy-to-read, and practical book. It has many nice features and is highly recommended for students and practitioners in various fields of study." —Technometrics An introduction to the practical application of cluster analysis can deal with most applications. These methods are chosen for their robustness, consistency, and general applicability. This book discusses various types of data, including interval-scaled and binary variables as well as similarity data, and explains how these can be transformed prior to clustering.

The current volume, Advances in Latent Variable Mixture Models, contains chapters by all of the speakers who participated in the 2006 CLVR conference, providing not just a snapshot of the event, but more importantly chronicling the state of the art in latent variable mixture model research. The volume starts with an overview chapter by offering a 'lay of the land' for latent variable mixture models before the volume moves to more specific constellations of topics. Part I, Multilevel and Longitudinal Systems, deals with mixtures for data that are hierarchical in nature either due to the data's sampling structure or to the repetition of measures (of varied types) over time. Part II, scenarios for making judgments about individuals' state of knowledge or development, and about the instruments used for making such judgments. Finally, Part III, Challenges in Model Evaluation, focuses on some of the methodological issues associated with the selection of models most accurately representing the processes and population volume is not intended to be a first exposure to latent variable methods. Readers lacking such foundational knowledge are encouraged to consult primary and/or secondary didactic resources in order to get the most from the chapters in this volume. Once armed with the basic understanding of latent variable methods, we believe readers of Applied Survival Analysis Using R covers the main principles of survival analysis, gives examples of how it is applied, and teaches how to put those principles to use to analyze data using R as a vehicle. Survival data, where the primary outcome is time to a specific event, arise in many areas of biomedical research, including clinical trials, epidemiological research, and survival methods are extensions of techniques used in linear regression and categorical data, while other aspects of this field are unique to survival data. This text employs numerous actual examples to illustrate survival curve estimation, comparison of survivals of different groups, proper accounting for censoring and truncation, model validation, explaining survival analysis requires more advanced mathematics than many other statistical topics. This book is organized with basic concepts and most frequently used procedures covered in earlier chapters, with more advanced topics near the end and in the appendices. A background in basic linear regression and categorical data analysis systems will help the reader to fully appreciate the information presented. Examples are simple and straightforward while still illustrating key points, shedding light on the application of survival analysis in a way that is useful for graduate students, researchers, and practitioners in biostatistics.

Explore, Explain, and Examine Predictive Models

Clustering Algorithms

XV Mediterranean Conference on Medical and Biological Engineering and Computing – MEDICON 2019

Bayesian Data Analysis, Third Edition

State of the Science

Geomorphometry

*The aim of this book is to document for the first time the dimensions and requirements of effective integrated groundwater management (IGM). Groundwater management is a formidable challenge, one that remains one of humanity's foremost priorities. It has become a largely non-renewable resource that is overexploited in many parts of the world. In the 21st century, the issue moves from how to simply obtain the water we need to how we manage it sustainably for future generations, future economies, and future ecosystems. The focus then becomes one of understanding the drivers and current state of the groundwater resource, and restoring equilibrium to at-risk aquifers. Many interrelated dimensions, however, come to bear when trying to manage groundwater effectively. An integrated approach to groundwater necessarily involves many factors beyond the aquifer itself, such as surface water, water use, water quality, and ec hydrology. Moreover, the science by itself can only define the fundamental bounds of what is possible; effective IGM must also engage the wider community of stakeholders to develop and support policy and other socioeconomic tools needed to realize effective IGM. In order to demonstrate IGM, this book covers theory and principles, embracing: 1) an overview of the dimensions and requirements of groundwater management from an international perspective; 2) the scale of groundwater issues internationally and its links with other sectors, principally energy and climate change; 3) groundwater governance with regard to principles, instruments and institutions available for IGM; 4) biophysical constraints and the capacity and role of hydroecological and hydrogeological science including water quality concerns; and 5) necessary tools including models, data infrastructures, decision support systems and the management of uncertainty. Examples of effective, and failed, IGM are given. Throughout, the importance of the socioeconomic context that connects all effective IGM is emphasized. Taken as a whole, this work relates the many facets of effective IGM, from the catchment to global perspective.*

*The domain of eHealth faces ongoing challenges to deliver 21st century healthcare. Digitalization, capacity building and user engagement with truly interdisciplinary and cross-domain collaboration are just a few of the areas which must be addressed. This book presents 190 full papers from the Medical Informatics Europe (MIE 2018) conference, held in Gothenburg, Sweden. The MIE conference aims to enable close interaction and networking between an international audience of academics, health professionals, patients and industry partners. The title of this year's conference is: Building Continents of Knowledge in Oceans of Data – The Future of Co-Created eHealth, and contributions cover a broad range of topics related to the digitalization of healthcare, citizen participation, data science, and changing health systems, addressed from the perspectives of citizens, patients and their families, healthcare professionals, service providers, developers and policy makers. The second part of the title in particular has attracted a large number of papers describing strategies to create, evaluate, adjust or deliver tools and services for improvements in healthcare organizations or to enable citizens to respond to the challenges of dealing with health systems. Papers are grouped under the headings: standards and interoperability, implementation and evaluation, knowledge management, decision support, modeling and analytics, health informatics education and learning systems, and patient-centered services. Attention is also given to development for sustainable use, educational strategies and workforce development, and the book will be of interest to both developers and practitioners of healthcare services.*

*Wir lassen sich soziale Zeit–Räume denken und erkunden? Ausgehend von dieser Fragestellung werden in einem ersten Schritt in Anlehnung an die Idee der Phänomentechnik die konzeptionellen Grundlagen des sozialen Zusammenhangs von Zeit und Raum theoretisch formuliert und methodologisch reflektiert. Es folgt in einem zweiten Schritt die forschungspraktische Anwendung der konzeptionellen Grundlegung anhand einer exemplarischen Analyse studentischer Zeit–Raum-Konstellationen. Hierzu wird auf eine innovative Kombination quantitativ-geometrischer und qualitativ-kartografischer Ansätze zurückgegriffen, die nicht nur dominante zeitlich-räumlichen Muster und deren Hintergründe sichtbar macht, sondern zugleich neue Perspektiven für die Hochschulforschung eröffnet.*

*Written for statisticians, computer scientists, geographers, research and applied scientists, and others interested in visualizing data, this book presents a unique foundation for producing almost every quantitative graphic found in scientific journals, newspapers, statistical packages, and data visualization systems. It was designed for a distributed computing environment, with special attention given to conserving computer code and system resources. While the tangible result of this work is a Java production graphics library, the text focuses on the deep structures involved in producing quantitative graphics from data. It investigates the rules that underlie pie charts, bar charts, scatterplots, function plots, maps, mosaics, and radar charts. These rules are abstracted from the work of Bertin, Cleveland, Kosslyn, MacEachren, Pinker, Tufte, Tukey, and other theorists of quantitative graphics.*

Multivariate Data Analysis in the Natural and Life Sciences

Applied Econometrics with R

Concepts, Software, Applications

Game-Theoretic Foundations for Probability and Finance

AASHTO Guidelines for Traffic Data Programs

Computational Movement Analysis

*The subject of this book is the analysis and processing of structural or quantitative data with emphasis on classification methods, new algorithms as well as applications in various fields related to data analysis and classification. The book presents the state of the art in world-wide research and application of methods from the fields indicated above and consists of survey papers as well as research papers.*

*Use Python modules such as ArcPy, ArcREST and the ArcGIS API for Python to automate the analysis and mapping of geospatial data. About This Book Perform GIS analysis faster by automating tasks. Access the spatial data contained within shapefiles and geodatabases and transform between spatial reference systems. Automate the mapping of geospatial analyses and production of map books. Who This Book Is For If you are a GIS student or professional who needs an understanding of how to use ArcPy to reduce repetitive tasks and perform analysis faster, this book is for you. It is also a valuable book for Python programmers who want to understand how to automate geospatial analyses and implement ArcGIS Online data management. What You Will Learn Understand how to integrate Python into ArcGIS and make GIS analysis faster and easier. Create Python scripts using ArcGIS ModelBuilder. Learn to use ArcGIS online feature services and the basics of the ArcGIS REST API Understand the unique Python environment that is new with ArcGIS Pro Learn about the new ArcGIS Python API and how to use Anaconda and Jupyter with it Learn to control ArcGIS Enterprise using ArcPy In Detail ArcGIS allows for complex analyses of geographic information. The ArcPy module is used to script these ArcGIS analyses, providing a productive way to perform geo-analyses and automate map production. The second edition of the book focuses on new Python tools, such as the ArcGIS API for Python. Using Python, this book will guide you from basic Python scripting to advanced ArcPy script tools. This book starts off with setting up your Python environment for ArcGIS automation. Then you will learn how to output maps using ArcPy in MXD and update feature class in a geodatabase using arcpy and ArcGIS Online. Next, you will be introduced to ArcREST library followed by examples on querying, updating and manipulating ArcGIS Online feature services. Further, you will be enabling your scripts in the browser and directly interacting with ArcGIS Online using Jupyter notebook. Finally, you can learn ways to use of ArcPy to control ArcGIS Enterprise and explore topics on deployments, data quality assurances, data updates, version control, and editing safeguards. By the end of the book, you will be equipped with the knowledge required to create automated analysis with administration reducing the time-consuming nature of GIS. Style and approach The book takes a pragmatic approach, showing ways to automate repetitive tasks and utilizing features of ArcPy with ArcGIS Pro and ArcGIS online.*

*Semantic Web for the Working Ontologist: Effective Modeling in RDFS and OWL, Second Edition, discusses the capabilities of Semantic Web modeling languages, such as RDFS (Resource Description Framework Schema) and OWL (Web Ontology Language). Organized into 16 chapters, the book provides examples to illustrate the use of Semantic Web technologies in solving common modeling problems, uses the life and work of William Shakespeare to demonstrate some of the most basic capabilities of the Semantic Web. The book first provides an overview of the Semantic Web and aspects of the Web. It then discusses semantic modeling and how it can support the development from chaotic information gathering to one organized by information sharing, cooperation, and collaboration. It also explains the use of RDF to implement the Semantic Web by allowing information to be distributed over the Web, along with the use of SPARQL web deployment and how they fit together, the concept of inferring in the Semantic Web, and how RDFS differs from other schema languages. Finally, the book considers the use of SKOS (Simple Knowledge Organization System) to manage vocabularies by taking advantage of the inferring structure of RDFS-Plus. This book is intended for the working ontologist who is trying to create a domain model on the Semantic Web. Updated with the latest developments and advances in Semantic Web technologies for organizing, querying, and processing information, including SPARQL, RDF and RDFS, OWL 2.0, and SKOS Detailed information on the ontologies used in today's key web applications, including ecommerce, social networking, data mining, using government data, and more Even more illustrative examples and case studies that demonstrate what semantic technologies are and how they work together to solve real-world problems*

*R is a language and environment for data analysis and graphics. It may be considered an implementation of S, an award-winning language initially -veloped at Bell Laboratories since the late 1970s. The R project was initiated by Robert Gentleman and Ross Ihaka at the University of Auckland, New Zealand, in the early 1990s, and has been developed by an international team since mid-1997. Historically, econometricians have favored other computing environments, some of which have fallen by the wayside, and also a variety of packages with canned routines. We believe that R has great potential in econometrics, both for research and for teaching. There are at least three reasons for this: (1) R is mostly platform independent and runs on Microsoft Windows, the Mac family of operating systems, and various ?avors of Unix/Linux, and also on some more exotic platforms. (2) R is free software that can be downloaded and installed at no cost from a family of mirror sites around the globe, the Comprehensive R Archive Network (CRAN); hence students can easily install it on their own machines. (3) R is open-source software, so that the full source code is available and can be inspected to understand what it really does, learn from it, and modify and extend it. We also like to think that platform independence and the open-source philosophy make R an ideal environment for reproducible econometric research.*

New Approaches in Classification and Data Analysis

Regression Modeling of Time-to-Event Data

Advances in Latent Variable Mixture Models

Longitudinal Data Analysis

Eine konzeptionelle und methodologische Grundlegung

R For Dummies

Published by the American Geophysical Union as part of the Geophysical Monograph Series, Volume 191. Rainfall: State of the Science offers the most up-to-date knowledge on the fundamental and practical aspects of rainfall. Each chapter, self-contained and written by prominent scientists in their respective fields, provides three forms of information: fundamental principles, detailed overview of current knowledge and description of existing methods, and emerging techniques and future research directions. The book discusses Rainfall microphysics: raindrop morphodynamics, interactions, size distribution, and evolution Rainfall measurement and estimation: ground-based direct measurement (disdrometer and rain gauge), weather radar, rainfall estimation, polarimetric radar, rainfall estimation, and satellite rainfall estimation Statistical analyses: intensity-duration-frequency curves, frequency analysis of extreme events, spatial analyses, simulation and disaggregation, ensemble approach for radar rainfall uncertainty, and uncertainty analysis of satellite rainfall products The book is tailored to be an immediately readable and practical reference for graduate students who study any aspect of rainfall or utilize rainfall information in various science and engineering disciplines. This Springer-Verlag discusses the characteristics of spatiotemporal movement data, including uncertainty and scale. It investigates three core aspects of Computational Movement Analysis: Conceptual modeling of movement and movement spaces, spatiotemporal analysis methods aiming at a better understanding of movement processes (with a focus on data mining for movement patterns), and using decentralized spatial computing methods in movement analysis. The author presents Computational Movement Analysis as an interdisciplinary umbrella for analyzing movement processes with methods from a range of fields including GIScience, spatiotemporal databases and data mining. Key challenges in Computational Movement Analysis include bridging the semantic gap, privacy issues when movement data involves people, incorporating big and open data, and opportunities for decentralized movement analysis arising from the internet of things. The interdisciplinary concepts of Computational Movement Analysis make this an important book for professionals and students in computer science, geographic information science and its application areas, especially movement ecology and transportation research.

Disruption often drives innovation, and 2020 was certainly an extraordinary year for all health professionals. Not only did it stretch individual providers and healthcare systems to their limits, it highlighted the urgent and rapid need to mobilize digital health technology, as well as pressure-testing digital health in ways and under timeframes not previously imagined. Many saw rapid development of telehealth services, partly out of necessity to maintain continuity of care, but also to ensure that those who needed healthcare were still able to access it no matter what their situation or location. This book presents 17 selected papers from the Australian Health Informatics Conference (HIC 2020) – Healthier Lives, Digitally Enabled, held online from 5 - 25 November 2020. This annual conference usually marks the coming together of the nation's digital health community to discuss, share and showcase current and future initiatives that support the progression of digital health, but in 2020, it took the form of satellite events, culminating with an online Digital Health Institute Summit. The papers presented here reflect highly topical themes across various areas and disciplines, including: digital health in the care of the elderly, mental health, COVID-19, public health, and workforce. Familiar topics, such as wearables, mobile health and remote monitoring, interoperability, and data privacy are also covered, as well as telehealth, automation, bots, and other AI applications. The book will be of interest to all health professionals, especially those working in the fields of digital health informatics and telemedicine. Shortlisted for the British Psychological Society Book Award 2017 Shortlisted for the British Book Design and Production Awards 2016 Shortlisted for the Association of Learned & Professional Society Publishers Award for Innovation in Publishing 2016 An Adventure in Statistics: The Reality Enigma by best-selling author and award-winning teacher Andy Field offers a better way to learn statistics. It combines rock-solid statistics coverage with compelling visual storytelling to address the conceptual difficulties that students learning statistics for the first time often encounter in introductory courses – guiding students away from rote memorization and toward critical thinking and problem solving. Field masterfully weaves in a unique, action-packed story starring Zach, a character who thinks like a student, processing information, and the challenges of understanding it. In the same way a statistics novice would. Illustrated with stunning graphic novel-style art and featuring Socratic dialogue, the story captivates readers as it introduces them to concepts, eliminating potential statistics anxiety. The book assumes no previous statistics knowledge nor does it require the use of data analysis software. It covers the material you would expect for an introductory level statistics course that Field's other books (Discovering Statistics Using IBM SPSS Statistics and Discovering Statistics Using R) only touch on, but with a contemporary twist, laying down strong foundations for understanding classical and Bayesian approaches to data analysis. In doing so, it provides an unrivalled launch pad to further study, research, and inquisitiveness about the real world, equipping students with the skills to succeed in their chosen degree and which they can go on to apply in the workplace. The Story and Main Characters The Reality Revolution in the City of Elpis, in the year 2100, there has been a reality revolution. Prior to the revolution, Elpis citizens were unable to see their flaws and limitations, believing themselves talented and special. This led to a self-absorbed society in which hard work and the collective good were undervalued and eroded. To combat this, Professor Milton Grey invented the reality prism, a hat that allowed its wearers to see themselves as they really were – flaws and all. Faced with the truth, Elpis citizens revolted and destroyed and banned all reality prisms. The Mysterious Disappearance Zach and Alice are born soon after all the prisms have been destroyed. Zach, a musician who doesn't understand statistics, and Alice, a geneticist who is also a whiz at statistics, are in love. One night, after a stormy night, the two disappear. The next day, Zach is found, but Alice is nowhere to be seen. In order to overcome a number of deadly challenges and find the love of his life, As Zach and his pocket watch, The Head, embark on their quest to find Alice, they meet Professor Milton Grey and Celia, battle zombies, cross a probability bridge, and encounter Jig-Saw, a mysterious corporation that might have something to do with Alice's disappearance... Author News "Eight years ago I had the idea to write a fictional story through which the student learns statistics via a shared adventure with the main character..." Read the complete article from Andy Field on writing his new book Times Higher Education article "Andy Field takes statistics adventure to a new level" Stay Connected Connect with us on Facebook and share your experiences with Andy's texts, check out news, access free stuff, see photos, watch videos, learn about competitions, and much more. Video Links Go behind the scenes and learn more about the man behind the book: Watch Andy talk about why he created a statistics book using the framework of a novel and illustrations by one of the illustrators for the show, Doctor Who. See more videos on Andy's YouTube channel Available with Perusal—an eBook that makes it easier to prepare for class Perusal is an award-winning eBook platform featuring social annotation tools that allow students and instructors to collaboratively mark up and discuss their SAGE textbook. Backed by research and supported by technological innovations developed at Harvard University, this Building Continents of Knowledge in Oceans of Data: The Future of Co-Created eHealth

An Introduction to Cluster Analysis

How Journalists Can Use Data to Improve the News

Landslide Dynamics: ISDR-ICL Landslide Interactive Teaching Tools

Integrated Groundwater Management

Healthier Lives, Digitally Enabled

Himalaya, one of the globe's biodiversity hotspots, is the abode of a variety of flora and fauna. The Himalayan ecosystems have immense ecological, socioeconomic, and aesthetic significance as they provide a wide range of ecosystem services. The northwest Himalaya (NWH), covering three states of India viz., Uttarakhand, Himachal Pradesh, and Jammu and Kashmir, starts from the foothills of Shivaliks in the south and extends to the greater Himalaya in the north. This region is also the source of some of the major rivers of India. With the increase in population, the NWH ecosystems have been under threat due to deforestation, loss of biodiversity, expansion of agriculture and settlement, overexploitation of natural resources, habitat loss and fragmentation, poaching, mining, construction of roads and large dams, and unplanned tourism. The Himalaya being young and geotectonically active, remains inherently unstable, fragile, and prone to natural disasters. Climate change is also likely to impact the Himalayan cryosphere drastically. Recognizing the importance of the Himalaya, a National Mission for Sustaining the Himalayan Ecosystem, one of the eight missions under the National Action Plan on Climate Change (NAPCC) of Govt. of India, to conserve biodiversity, forest cover and other ecological values in the Himalayan region has been taken up. Spacetime remote sensing with its ability to provide synoptic and repetitive coverage has emerged as a powerful tool for assessment and monitoring of the Himalayan resources and phenomena. Indian Institute of Remote Sensing, Dehradun has taken up a number of studies in the fields of geology, water resources, forestry, agriculture, urban settlement, etc., over the last decade. The book summarises the work carried out in different disciplines, illustrated with tables and figures and a host of relevant references. It is hoped that the book serves as an excellent reference of immense value to the students, researchers, professors, scientists, professionals, and decision makers working in the NWH region.

This book offers readers an accessible introduction to the world of multivariate statistics in the life sciences, providing a comprehensive description of the general data analysis paradigm, from exploratory analysis (principal component analysis, self-organizing maps and clustering) to modeling (classification, regression) and validation (including variable selection). It also includes a special section discussing several more specific topics in the area of chemometrics, such as outlier detection, and biomarker identification. The corresponding R code is provided for all the examples in the book; and scripts, functions and data are available in a separate R package. This second revised edition features not only updates on many of the topics covered, but also several sections of new material (e.g., on handling missing values in PCA, multivariate process monitoring and batch correction).

Geomorphometry is the science of quantitative land-surface analysis. It draws upon mathematical, statistical, and image-processing techniques to quantify the shape of earth's topography at various spatial scales. The focus of geomorphometry is the calculation of surface-form measures (land-surface parameters) and features (objects), which may be used to improve the mapping and modelling of landforms to assist in the evaluation of soils, vegetation, land use, natural hazards, and other information. This book provides a practical guide to preparing Digital Elevation Models (DEM) for analysis and extracting land-surface parameters and objects from DEMs through a variety of software. It further offers detailed instructions on applying parameters and objects in soil, agricultural, environmental and earth sciences. This is a manual of state-of-the-art methods to serve the various researchers who use geomorphometry. Soil scientists will use this book to further learn the methods for classifying and measuring the chemical, biological, and fertility properties of soils and gain a further understanding of the role of soil as a natural resource. Geologists will find value in the instruction this book provides for measuring the physical features of the soil such as elevation, porosity, and structure which geologists use to predict natural disasters such as earthquakes, volcanoes, and flooding. \* Technical details on a variety of software packages allow researchers to solve real-life mapping issues \* Provides soil and agronomy researchers best practice techniques for soil data analysis to assist in enhanced land-use and planning \* Offers geologists essential tactics for better environmental management by providing a comprehensive analysis of the physical features of soil \* Companion website includes access to the latest technological advancements previously unpublished in any other comprehensive source: geomorphometry software, DEM data practices, and applications

This book gathers the proceedings of MEDICON 2019 – the XV Mediterranean Conference on Medical and Biological Engineering and Computing – which was held in September 26-28, 2019, in Coimbra, Portugal. A special emphasis has been given to practical findings, techniques and methods, aimed at fostering an effective patient empowerment, i.e. to position the patient at the heart of the health system and encourages them to be actively involved in managing their own healthcare needs. The book reports on research and development in electrical engineering, computing, data science and instrumentation, and on many topics at the interface between these disciplines. It provides academics and professionals with extensive knowledge on cutting-edge techniques and tools for detection, prevention, treatment and management of diseases. A special emphasis is given to effective advances, as well as new directions and challenges towards improving healthcare through holistic patient empowerment.

Probability Theory I

Applied Survival Analysis Using R

Zeit-Raum Analyse des Studiums

Groundwater Data Management

UAV Sensors for Environmental Monitoring

Concepts, Approaches and Challenges

This book provides the reader with a basic understanding of the formal concepts of the cluster, clustering, partition, cluster analysis etc. The book explains feature-based, graph-based and spectral clustering methods and discusses their formal similarities and differences. Understanding the related formal concepts is particularly vital in the epoch of Big Data; due to the volume and characteristics of the data, it is no longer feasible to predominantly rely on merely viewing the data when facing a clustering problem. Usually clustering involves choosing similar objects and grouping them together. To facilitate the choice of similarity measures for complex and big data, various measures of object similarity, based on quantitative (like numerical measurement results) and qualitative features (like text), as well as combinations of the two, are described, as well as graph-based similarity measures or (hyper) linked objects and measures for multilayered graphs. Numerous variants demonstrating how such similarity measures can be exploited when defining clustering cost functions are also presented. In addition, the book provides an overview of approaches to handling large collections of objects in a reasonable time. In particular, it addresses grid-based methods, sampling methods, parallelization via Map-Reduce, usage of tree-structures, random projections and various heuristic approaches, especially those used for community detection. This interactive book presents comprehensive information on the fundamentals of landslide types and dynamics, while also providing a set of PPT, PDF, and text tools for education and capacity development. As the core activity of the Sendai Partnerships, the International Consortium of Landslides has created this two-volume work, which will be regularly updated and improved over the coming years, based on responses from users and lessons learned during its application.

If you want to increase Tableau's value to your organization, this practical book has your back. Authors Ann Jackson and Luke Stanke guide data analysts through strategies for solving real-world analytics problems using Tableau. Starting with the basics and building toward advanced topics such as multidimensional analysis and user experience, you'll explore pragmatic and creative examples that you can apply to your own data. Staying competitive today requires the ability to quickly analyze and visualize data and make data-driven decisions. With this guide, data practitioners and leaders alike will learn strategies for building compelling and purposeful visualizations, dashboards, and data products. Every chapter contains the why behind the solution and the technical knowledge you need to make it work. Use this book as a high-value on-the-job reference guide to Tableau Visualize different data types and tackle specific data challenges Create compelling data visualizations, dashboards, and data products Learn how to generate industry-specific analytics Explore categorical and quantitative analysis and comparisons Understand geospatial, dynamic, statistical, and multivariate analysis Communicate the value of the Tableau platform to your team and to stakeholders

Shows how Galileo, Newton, and Einstein tried to explain gravity. Discusses the concept of microgravity and NASA's research on gravity and microgravity.

An Adventure in Statistics

Rainfall

Applied Survival Analysis

Extending R

The Grammar of Graphics

Tableau Strategies

When you combine the sheer scale and range of digital information now available with a journalist's "nose for news" and her ability to tell a compelling story, a new world of possibility opens up. With The Data Journalism Handbook, you'll explore the potential, limits, and applied uses of this new and fascinating field. This valuable handbook has attracted scores of contributors since the European Journalism Centre and the Open Knowledge Foundation launched the project at MozFest 2011. Through a collection of tips and techniques from leading journalists, professors, software developers, and data analysts, you'll learn how data can be either the source of data journalism or a tool with which the story is told/or both. Examine the use of data journalism at the BBC, the Chicago Tribune, the Guardian, and other news organizations Explore in-depth case studies on elections, riots, school performance, and corruption Learn how to find data from the Web, through freedom of information laws, and by "crowd sourcing" Extract information from raw data with tips for working with numbers and statistics and using data visualization Deliver data through infographics, news apps, open data platforms, and download links

This addition is useful and effective in teaching Bayesian inference at both elementary and intermediate levels. It is a well-written book on elementary Bayesian inference, and the material is easily accessible. It is both concise and timely, and provides a good collection of overviews and reviews of important tools used in Bayesian statistical methods." There is a strong emphasis in the use of Bayesian methods in applied statistical analysis, yet most introductory statistics texts only present frequentist methods. Bayesian statistics has many important advantages that students should learn about if they are going into fields where statistics will be used. In this third edition, four newly-added chapters address topics that reflect the rapid advances in the field of Bayesian statistics. The authors continue to provide a Bayesian treatment of introductory statistical topics, such as scientific data gathering, discrete random variables, robust Bayesian methods, and Bayesian approaches to inference for discrete random variables, binomial proportions, Poisson, and normal means, and simple linear regression. In addition, more advanced topics in the field are presented in four new chapters: Bayesian inference for a normal with unknown mean and variance; Bayesian inference for a Multivariate Normal mean vector; Bayesian inference for the Multiple Linear Regression Model; and Computational Bayesian Statistics including Markov Chain Monte Carlo. The inclusion of these topics will facilitate readers' ability to advance from a minimal understanding of Statistics to the ability to tackle topics in more applied, advanced level books. Minitab macros and R functions are available on the book's related website to assist with chapter exercises. Introduction to Bayesian Statistics, Third Edition also features: Topics including the Joint Likelihood function and inference using independent Jeffreys priors and joint conjugate prior The cutting-edge topic of computational Bayesian Statistics in a new chapter, with a unique focus on Markov Chain Monte Carlo methods Exercises throughout the book that have been updated to reflect new applications and the latest software applications Detailed appendices that guide readers through the use of R and Minitab software for Bayesian analysis and Monte Carlo simulations, with all related macros available on the book's website Introduction to Bayesian Statistics, Third Edition is a textbook for upper-undergraduate or first-year graduate level courses on introductory statistics course with a Bayesian emphasis. It can also be used as a reference work for statisticians who require a working knowledge of Bayesian statistics.

Although many books currently available describe statistical models and methods for analyzing longitudinal data, they do not highlight connections between various research threads in the statistical literature. Responding to this void, Longitudinal Data Analysis provides a clear, comprehensive, and unified overview of state-of-the-art theory and applications. It also focuses on the assorted challenges that arise in analyzing longitudinal data. After discussing historical aspects, leading researchers explore four broad themes: parametric modeling, nonparametric and semiparametric methods, joint models, and incomplete data. Each of these sections begins with an introductory chapter that provides useful background material and a broad outline to set the stage for subsequent chapters. Rather than focus on a narrowly defined topic, chapters integrate important research discussions from the statistical literature. They seamlessly blend theory with applications and include examples and case studies from various disciplines. Destined to become a landmark publication in the field, this carefully edited collection emphasizes statistical models and methods likely to endure in the future.

While the adoption of digital health is becoming more common, and it seems likely that all these changes will continue to influence healthcare in the longer-term, this book presents the proceedings of dHealth 2021 | the 15th annual conference on Health Informatics Meets Digital Health | held as a virtual conference on 11 & 12 May 2021. The dHealth conference is where research and application meet as equals, and the conference series has been contributing to scientific exchange and networking since 2007. The 2021 edition is the second that has been organized virtually. Each year, this event attracts 300+ participants from academia, industry, government and healthcare organizations, and provides a platform for researchers, practitioners, decision makers and vendors to discuss innovative health informatics and dHealth solutions with the aim of improving the quality and efficiency of healthcare. The 24 papers included here offer an insight into the research on digital health conducted during the COVID-19 crisis, and topics include the management of infectious diseases, telehealth services, standardization and interoperability in healthcare, nursing informatics, data analytics, predictive modeling and digital tools for rare-disease research. The book provides new healthcare insights from both science and practice, and will be of interest to all those working in healthcare.

Modern Algorithms of Cluster Analysis

Finding Groups in Data

Explanatory Model Analysis

Applied Logistic Regression

The Data Journalism Handbook

Selected Papers from the Digital Health Institute Summit 2020

This book is a printed edition of the Special Issue "UAV Sensors for Environmental Monitoring" that was published in Sensors

Provides alternative solutions to such global problems as population control, emerging water shortages, eroding soil, and global warming, outlining a detailed survival strategy for the civilization of the future.

The objective of these AASHTO Guidelines is to improve the quality of the traffic information that supports decisions at all levels of the transportation profession. The Guidelines provide a reference for professional traffic monitoring and establish a process for adoption of national traffic monitoring standards. They specifically address concerns of state transportation agencies.

This fourth edition contains several additions. The main ones concern three closely related topics: Brownian motion, functional limit distributions, and random walks. Besides the power and ingenuity of their methods and the depth and beauty of their results, their importance is fast growing in Analysis as well as in theoretical and applied Probability. These additions increased the book to an unwieldy size and it had to be split into two volumes. About half of the first volume is devoted to an elementary introduction, then to mathematical foundations and basic probability concepts and tools. The second half is devoted to a detailed study of Independence which played and continues to play a central role both by itself and as a catalyst. The main additions consist of a section on convergence of probabilities on metric spaces and a chapter whose first section on domains of attraction completes the study of the Central limit problem, while the second one is devoted to random walks.

About a third of the second volume is devoted to conditioning and properties of sequences of various types of dependence. The other two thirds are devoted to random functions; the last Part on Elements of random analysis is more sophisticated. The main addition consists of a chapter on Brownian motion and limit distributions.

Navigating Healthcare Through Challenging Times

Semantic Web for the Working Ontologist

ArcPy and ArcGIS – Geospatial Analysis with Python

ArcPy and ArcGIS

Remote Sensing of Northwest Himalayan Ecosystems

Volume 1: Fundamentals, Mapping and Monitoring

Now in its third edition, this classic book is widely considered the leading text on Bayesian methods, lauded for its accessible, practical approach to analyzing data and solving research problems. Bayesian Data Analysis, Third Edition continues to take an applied approach to analysis using up-to-date Bayesian methods. The authors—all leaders in the statistics community—introduce basic concepts from a data-analytic perspective before presenting advanced methods. Throughout the text, numerous worked examples drawn from real applications and research emphasize the use of Bayesian inference in practice. New to the Third Edition Four new chapters on nonparametric modeling Coverage of weakly informative priors and boundary-avoiding priors Updated discussion of cross-validation and predictive information criteria Improved convergence monitoring and effective sample size calculations for iterative simulation Presentations of Hamiltonian Monte Carlo, variational Bayes, and expectation propagation New and revised software code The book can be used in three different ways. For undergraduate students, it introduces Bayesian inference starting from first principles. For graduate students, the text presents effective current approaches to Bayesian modeling and computation in statistics and related fields. For researchers, it provides an assortment of Bayesian methods in applied statistics. Additional materials, including data sets used in the examples, solutions to selected exercises, and software instructions, are available on the book's web page.

Master the programming language of choice among statisticians and data analysts worldwide Coming to grips with R can be tough, even for seasoned statisticians and data analysts. Enter R For Dummies, the quick, easy way to master all the R you'll ever need. Requiring no prior programming experience and packed with practical examples, easy, step-by-step exercises, and sample code, this extremely accessible guide is the ideal introduction to R for complete beginners. It also covers many concepts that intermediate-level programmers will find extremely useful. Master your R ABCs ? get up to speed in no time with the basics, from installing and configuring R to writing simple scripts and performing simultaneous calculations on many variables Put data in its place ? get to know your way around lists, data frames, and other R data structures while learning to interact with other programs, such as Microsoft Excel Make data dance to your tune ? learn how to reshape and manipulate data, merge data sets, split and combine data, perform calculations on vectors and arrays, and much more Visualize it ? learn to use R's powerful data visualization features to create beautiful and informative graphical presentations of your data Get statistical ? find out how to do simple statistical analysis, summarize your variables, and conduct classic statistical tests, such as t-tests Expand and customize R ? get the lowdown on how to find, install, and make the most of add-on packages created by the global R community for a wide variety of purposes Open the book and find: Help downloading, installing, and configuring R Tips for getting data in and out of R Ways to use data frames and lists to organize data How to manipulate and process data Advice on fitting regression models and ANOVA

Helpful hints for working with graphics How to code in R What R mailing lists and forums can do for you

Navigating Healthcare Through Challenging TimesProceedings of DHealth 2021 - Health Informatics Meets Digital HealthIOS Press

If you are a GIS student or professional who needs an understanding of how to use ArcPy to reduce repetitive tasks and perform analysis faster, this book is for you. It is also a valuable book for Python programmers who want to understand how to automate geospatial analyses.

Chemometrics with R

The Reality Enigma

Proceedings of DHealth 2021 - Health Informatics Meets Digital Health