Statistical Computing Using R S

Thank you unquestionably much for downloading Statistical Computing Using R S.Maybe you have knowledge that, people have see numerous times for their favorite books taking into consideration this Statistical Computing Using R S, but stop up in harmful downloads.

Rather than enjoying a good PDF with a mug of coffee in the afternoon, otherwise they juggled in the manner of some harmful virus inside their computer. Statistical Computing Using R S is simple in our digital library an online admission to it is set as public so you can download it instantly. Our digital library saves in complex countries, allowing you to get the most less latency epoch to download any of our books as soon as this one. Merely said, the Statistical Computing Using R S is universally compatible later than any devices to read.

Signal and Image Processing for Remote Sensing C.H. Chen 2006-10-09 Most data from satellites are in image form, thus most books in the remote sensing field deal exclusively with image processing. However, signal processing can contribute significantly in extracting information from the remotely sensed waveforms or time series data. Pioneering the combination of the two processes, Signal and Image Processing for Re
Remote Sensing of Precipitation Silas Michaelides 2019-07-23 Precipitation is a well-recognized pillar in global water and energy balances. An accurate and timely understanding of its characteristics at the global, regional, and local scales is indispensable for a clearer understanding of the mechanisms underlying the Earth's atmosphere–ocean complex system. Precipitation is one of the elements that is documented to be greatly affected by climate change. In its various forms, precipitation comprises a primary source of freshwater, which is vital for the sustainability of almost all human activities. Its socio-economic significance is fundamental in managing this natural resource effectively, in applications ranging from irrigation to industrial and household usage. Remote sensing of precipitation is pursued through a broad spectrum of continuously enriched and upgraded instrumentation, embracing sensors which can be ground-based (e.g., weather radars), satellite-borne (e.g., passive or active space-borne sensors), underwater (e.g., hydrophones), aerial, or ship-borne.
PC Mag 1989-03-14 PCMag.com is a leading authority on technology, delivering Labs-based, independent reviews of the latest products and services. Our expert industry analysis and practical solutions help you make better buying decisions and get more from technology.
Remote Sensing of Leaf Area Index (LAI) and Other Vegetation Parameters Francisco Javier García-Haro 2019-09-16 Monitoring of vegetation structure and functioning is critical to modeling terrestrial ecosystems and energy cycles. In particular, leaf area index (LAI) is an important structural property of vegetation used in many land surface vegetation, climate, and crop production models. Canopy structure (LAI, fCover, plant height, and biomass) and biochemical parameters (leaf pigmentation and water content) directly influence the radiative transfer process of sunlight in vegetation, determining the amount of radiation measured by passive sensors in the visible and infrared portions of the electromagnetic spectrum. Optical remote sensing (RS) methods build relationships exploiting in situ measurements and/or as outputs of physical canopy radiative transfer models. The increased availability of passive (radar and LiDAR) RS data has fostered their use in many applications for the analysis of land surface properties and processes, thanks also to their insensitivity to weather conditions and the capability to exploit rich structural and textural information. Data fusion and multi-sensor integration techniques are pressing topics to fully exploit the information conveyed by both optical and microwave bands.
Remote Sensing and GIS Accuracy Assessment Ross S. Lunetta 2004-07-27 Based upon a special symposium sponsored by the U.S. Environmental Protection Agency (EPA), Remote Sensing and GIS Accuracy Assessment evaluates the important scientific elements related to the performance of accuracy assessments for remotely sensed data, GIS data analysis, and integration products. Scientists from federal, state, and local governments, academia, and nongovernmental organizations present technical papers which examine sampling issues, reference data collection, edge and boundary effects, error matrix and fuzzy assessments, error budget analysis, and change detection accuracy assessment. This compilation contains 20 chapters that represent important symposium outcomes.
Operationalization of Remote Sensing Solutions for Sustainable Forest Management Gintautas Mozgeris 2021-06-02 The great potential of remote sensing technologies for operational use in sustainable forest management is addressed in this book, which is the reprint of papers published in the Remote Sensing Special Issue "Operationalization of Remote Sensing Solutions for Sustainable Forest Management". The studies come from three continents and cover multiple remote sensing systems (including terrestrial mobile laser scanning, unmanned aerial vehicles, airborne laser scanning, and satellite data acquisition) and a diversity of data processing algorithms, with a focus on machine learning approaches. The focus of the studies ranges from identification and characterization of individual trees to deriving national- or even continental-level forest attributes and maps. There are studies carefully describing exercises on the case study level, and there are also studies introducing new methodologies for transdisciplinary remote sensing applications. Even though most of the authors look forward to continuing their research, nearly all studies introduced are ready for operational use or have already been implemented in practical forestry.
Remote Sensing Image Classification in R Courage Kamusoko 2019-07-24 This book offers an introduction to remotely sensed image processing and classification in R using machine learning algorithms. It also provides a concise and practical reference tutorial, which equips readers to immediately start using the software platform and R packages for image processing and classification. This book is divided into five chapters. Chapter 1 introduces remote sensing digital image processing in R, while chapter 2 covers pre-processing. Chapter 3 focuses on image transformation, and chapter 4 addresses image classification. Lastly, chapter 5 deals with improving image classification. R is advantageous in that it is open source software, available free of charge and includes several useful features that are not available in commercial software packages. This book benefits all undergraduate and graduate students, researchers, university teachers and other remote- sensing practitioners interested in the practical implementation of remote sensing in R.
Remote Sensing of Protected Lands Yeqiao Wang 2016-04-19 National parks, wildlife refuges and sanctuaries, natural reserves, conservation areas, frontier lands, and marine-protected areas are increasingly recognized as essential providers of ecosystem services and biological resources. As debates about climate change and sustainability intensify, protected areas become more important as indicators of eco
Advances in Remote Sensing for Global Forest Monitoring Erkki Tomppo 2021-09-01 The topics of the book cover forest parameter estimation, methods to assess land cover and change, forest disturbances and degradation, and forest soil drought estimations. Airborne laser scanner data, aerial images, as well as data from passive and active sensors of different spatial, spectral and temporal resolutions have been utilized. Parametric and non-parametric methods including machine and deep learning methods have been employed. Uncertainty estimation is a key topic in each study. In total, 15 articles are included, of which one is a review article dealing with methods employed in remote sensing aided greenhouse gas inventories, and one is the Editorial summary presenting a short review of each article.
Uncertainty Management in Remote Sensing of Climate Data National Research Council 2009-10-01 Great advances have been made in our understanding of the climate system over the past few decades, and remotely sensed data have played a key role in supporting many of these advances. Improvements in satellites and in computational and data-handling techniques have yielded high quality, readily accessible data. However, rapid increases in data volume have also led to large and complex datasets that pose significant challenges in data analysis. Uncertainty characterization is needed for every satellite mission and scientists continue to be challenged by the need to reduce the uncertainty in remotely sensed climate records and projections. The approaches currently used to quantify the uncertainty in remotely sensed data lack an

overall mathematically based framework. An additional challenge is characterizing uncertainty in ways that are useful to a broad spectrum of end-users. In December 2008, the National Academies held a workshop, summarized in this volume, to survey how statisticians, climate scientists, and remote sensing experts might address the challenges of uncertainty management in remote sensing of climate data. The workshop emphasized raising and discussing issues that could be studied more intently by individual researchers or teams of researchers, and setting the stage for possible future collaborative activities.

Signal and Image Processing for Remote Sensing, Second Edition C.H. Chen 2012-02-22 Continuing in the footsteps of the pioneering first edition, Signal and Image Processing for Remote Sensing, Second Edition explores the most up-to-date signal and image processing methods for dealing with remote sensing problems. Although most data from satellites are in image form, signal processing can contribute significantly in extracting information from remotely sensed waveforms or time series data. This book combines both, providing a unique balance between the role of signal processing and image processing. Featuring contributions from worldwide experts, this book continues to emphasize mathematical approaches. Not limited to satellite data, it also considers signals and images from hydroacoustic, seismic, microwave, and other sensors. Chapters cover important topics in signal and image processing and discuss techniques for dealing with remote sensing problems. Each chapter offers an introduction to the topic before delving into research results, making the book accessible to a broad audience. This second edition reflects the considerable advances that have occurred in the field, with 23 of 27 chapters being new or entirely rewritten. Coverage includes new mathematical developments such as compressive sensing, empirical mode decomposition, and sparse representation, as well as new component analysis methods such as non-negative matrix and tensor factorization. The book also presents new experimental results on SAR and hyperspectral image processing. The emphasis is on mathematical techniques that will far outlast the rapidly changing sensor, software, and hardware technologies. Written for industrial and academic researchers and graduate students alike, this book helps readers connect the "dots" in image and signal processing. New in This Edition The second edition includes four chapters from the first edition, plus 23 new or entirely rewritten chapters, and 190 new figures. New topics covered include: Compressive sensing The mixed pixel problem with hyperspectral images Hyperspectral image (HSI) target detection and classification based on sparse representation An ISAR technique for refocusing moving targets in SAR images Empirical mode decomposition for signal processing Feature extraction for classification of remote sensing signals and images Active learning methods in classification of remote sensing images Signal subspace identification of hyperspectral data Wavelet-based multi/hyperspectral image restoration and fusion The second edition is not intended to replace the first edition entirely and readers are encouraged to read both editions of the book for a more complete picture of signal and image processing in remote sensing. See Signal and Image Processing for Remote Sensing (CRC Press 2006).

Learning to Understand Remote Sensing Images Qi Wang 2019-09-30 With the recent advances in remote sensing technologies for Earth observation, many different remote sensors are collecting data with distinctive properties. The obtained data are so large and complex that analyzing them manually becomes impractical or even impossible. Therefore, understanding remote sensing images effectively, in connection with physics, has been the primary concern of the remote sensing research community in recent years. For this purpose, machine learning is thought to be a promising technique because it can make the system learn to improve itself. With this distinctive characteristic, the algorithms will be more adaptive, automatic, and intelligent. This book introduces some of the most challenging issues of machine learning in the field of remote sensing, and the latest advanced technologies developed for different applications. It integrates with multi-source/multi-temporal/multi-scale data, and mainly focuses on learning to understand remote sensing images. Particularly, it presents many more effective techniques based on the popular concepts of deep learning and big data to reach new heights of data understanding. Through reporting recent advances in the machine learning approaches towards analyzing and understanding remote sensing images, this book can help readers become more familiar with knowledge frontier and foster an increased interest in this field.

Remote Sensing and Geospatial Technologies in Public Health Fazlay S. Faruque 2018-09-21 This book is a printed edition of the Special Issue "Remote Sensing and Geospatial Technologies in Public Health" that was published in IJGI

Information Processing for Remote Sensing

Remote Sensing of Volcanic Processes and Risk Francesca Cigna 2021-03-17 Remote sensing data and methods are increasingly being implemented in assessments of volcanic processes and risk. This happens thanks to their capability to provide a spectrum of observation and measurement opportunities to accurately sense the dynamics, magnitude, frequency, and impacts of volcanic activity. This book includes research papers on the use of satellite, aerial, and ground-based remote sensing to detect thermal features and anomalies, investigate lava and pyroclastic flows, predict the flow path of lahars, measure gas emissions and plumes, and estimate ground deformation. The multi-disciplinary character of the approaches employed for volcano monitoring and the combination of a variety of sensor types, platforms, and methods that come out from the papers testify to the current scientific and technology trends toward multi-data and multi-sensor monitoring solutions. The added value of the papers lies in the demonstration of how remote sensing can improve our knowledge of volcanoes that pose a threat to local communities; back-analysis and critical revision of recent volcanic eruptions and unrest periods; and improvement of modeling and prediction methods. Therefore, the selected case studies also demonstrate the societal impact that this scientific discipline can potentially have on volcanic hazard and risk management.

Algorithms -- ESA 2011 Camil Demetrescu 2011-09-06 This book constitutes the refereed proceedings of the 19th Annual European Symposium on Algorithms, ESA 2011, held in Saarbrücken, Germany, in September 2011 in the context of the combined conference ALGO 2011. The 67 revised full papers presented were carefully reviewed and selected from 255 initial submissions: 55 out of 209 in track design and analysis and 12 out of 46 in track engineering and applications. The papers are organized in topical sections on approximation algorithms, computational geometry, game theory, graph algorithms, stable matchings and auctions, optimization, online algorithms, exponential-time algorithms, parameterized algorithms, scheduling, data structures, graphs and games, distributed computing and networking, strings and sorting, as well as local search and set systems.

Computational Statistics with Environmental and Remote Sensing Applications Alexei Teterukovskiy 2003

Handbook of Fitting Statistical Distributions with R Zaven A. Karian 2016-04-19 With the development of new fitting methods, their increased use in applications, and improved computer languages, the fitting of statistical distributions to data has come a long way since the introduction of the generalized lambda distribution (GLD) in 1969. Handbook of Fitting Statistical Distributions with R presents the latest and best methods

Hyperspectral Remote Sensing of Vegetation Prasad S. Thenkabail 2016-04-19 Hyperspectral narrow-band (or imaging spectroscopy) spectral data are fast emerging as practical solutions in modeling and mapping vegetation. Recent research has demonstrated the advances in and merit of hyperspectral data in a range of applications including quantifying agricultural crops, modeling forest canopy biochemical properties, detecting crop stress and disease, mapping leaf chlorophyll content as it influences crop production, identifying plants affected by contaminants such as arsenic, demonstrating sensitivity to plant nitrogen content, classifying vegetation species and type, characterizing wetlands, and mapping invasive species. The need for significant improvements in quantifying, modeling, and mapping plant chemical, physical, and water properties is more critical than ever before to reduce uncertainties in our understanding of the Earth and to better sustain it. There is also a need for a synthesis of the vast knowledge spread throughout the literature from more than 40 years of research. Hyperspectral Remote Sensing of Vegetation integrates this knowledge, guiding readers to harness the capabilities of the most recent advances in applying hyperspectral remote sensing technology to the study of terrestrial vegetation. Taking a practical approach to a complex subject, the book demonstrates the experience, utility, methods and models used in studying vegetation using hyperspectral data. Written by leading experts, including pioneers in the field, each chapter presents specific applications, reviews existing state-of-the-art knowledge, highlights the advances made, and provides guidance for the appropriate use of hyperspectral data in the study of vegetation as well as its numerous applications, such as crop yield modeling, crop and vegetation biophysical and biochemical property characterization, and crop moisture assessment. This

comprehensive book brings together the best global expertise on hyperspectral remote sensing of agriculture, crop water use, plant species detection, vegetation classification, biophysical and biochemical modeling, crop productivity and water productivity mapping, and modeling. It provides the pertinent facts, synthesizing findings so that readers can get the correct picture on issues such as the best wavebands for their practical applications, methods of analysis using whole spectra, hyperspectral vegetation indices targeted to study specific biophysical and biochemical quantities, and methods for detecting parameters such as crop moisture variability, chlorophyll content, and stress levels. A collective "knowledge bank," it guides professionals to adopt the best practices for their own work.

3D Remote Sensing Applications in Forest Ecology Hooman Latifi 2019-11-19 Dear Colleagues, The composition, structure and function of forest ecosystems are the key features characterizing their ecological properties, and can thus be crucially shaped and changed by various biotic and abiotic factors on multiple spatial scales. The magnitude and extent of these changes in recent decades calls for enhanced mitigation and adaption measures. Remote sensing data and methods are the main complementary sources of up-to-date synoptic and objective information of forest ecology. Due to the inherent 3D nature of forest ecosystems, the analysis of 3D sources of remote sensing data is considered to be most appropriate for recreating the forest's compositional, structural and functional dynamics. In this Special Issue of Forests, we published a set of state-of-the-art scientific works including experimental studies, methodological developments and model validations, all dealing with the general topic of 3D remote sensing-assisted applications in forest ecology. We showed applications in forest ecology from a broad collection of method and sensor combinations, including fusion schemes. All in all, the studies and their focuses are as broad as a forest's ecology or the field of remote sensing and, thus, reflect the very diverse usages and directions toward which future research and practice will be directed.

UAV Remote Sensing for Plant Traits and Stress Alessandro Matese 2022-06-06

Remote Sensing Technology Applications in Forestry and REDD+ Kim Calders 2020-03-17 Advances in close-range and remote sensing technologies are driving innovations in forest resource assessments and monitoring on varying scales. Data acquired with airborne and spaceborne platforms provide high(er) spatial resolution, more frequent coverage, and more spectral information. Recent developments in ground-based sensors have advanced 3D measurements, low-cost permanent systems, and community-based monitoring of forests. The UNFCCC REDD+ mechanism has advanced the remote sensing community and the development of forest geospatial products that can be used by countries for the international reporting and national forest monitoring. However, an urgent need remains to better understand the options and limitations of remote and close-range sensing techniques in the field of forest degradation and forest change. Therefore, we invite scientists working on remote sensing technologies, close-range sensing, and field data to contribute to this Special Issue. Topics of interest include: (1) novel remote sensing applications that can meet the needs of forest resource information and REDD+ MRV, (2) case studies of applying remote sensing data for REDD+ MRV, (3) timeseries algorithms and methodologies for forest resource assessment on different spatial scales varying from the tree to the national level, and (4) novel close-range sensing applications that can support sustainable forestry and REDD+ MRV. We particularly welcome submissions on data fusion.

Proceedings of the Statistical Computing Section American Statistical Association. Statistical Computing Section 1998

Biomeasurement Dawn Hawkins 2019-03-28 Emphasizing why statistical techniques are essential tools for bioscientists, Biomeasurement removes the Emphasizing why statistical techniques are essential tools for bioscientists, Biomeasurement removes the stigma attached to statistics by giving students the confidence to use key techniques for themselves. Placing the role of data analysis in the context of the wider scientific method andintroducing students to key terms and common statistical concepts, the text demonstrates the power and importance of statistics throughout the study of bioscience.

Applications in Statistical Computing Nadja Bauer 2019-10-12 This volume presents a selection of research papers on various topics at the interface of statistics and computer science. Emphasis is put on the practical applications of statistical methods in various disciplines, using machine learning and other computational methods. The book covers fields of research including the design of experiments, computational statistics, music data analysis, statistical process control, biometrics, industrial engineering, and econometrics. Gathering innovative, high-quality and scientifically relevant contributions, the volume was published in honor of Claus Weihs, Professor of Computational Statistics at TU Dortmund University, on the occasion of his 66th birthday.

Resource Management Information Systems Keith R. McCloy 2005-12-21 Resource Management Information Systems: Remote Sensing, GIS and Modelling, Second Edition provides you with the knowledge and skill necessary to design, build, implement, and operate spatial resource management information systems for the management of physical resources. This volume promotes the use of these technologies in a spatial cont

Remote Sensing of Vegetation Christian Julian Bödinger 2019-01-24 How is the vegetation distribution influencing the erosion and surface formation in the different eco zones of Chile? To answer this question, it is mandatory to possess fundamental knowledge about plant species habitats, occurrence and their dynamics. In his study Christian Bödinger utilizes satellite imagery in combination with machine learning to derive maps of land use and land cover (LULC) in four study sites along a climatic gradient and to monitor vegetation using monthly Normalized Difference Vegetation Index (NDVI) time series. The findings contribute to a better understanding of climate impacts on Chilean vegetation and serve as a basis of landscape evolution models. About the Author: Christian Bödinger holds a M.Sc. in Physical Geography from the University of Tübingen, Germany. His focus in research lies on remote sensing and image analysis for environmental applications. He is currently working for a company focusing on aquatic remote sensing.

Environmental Remote Sensing in Egypt Salwa F. Elbeih 2020-03-30 This book presents a comprehensive selection of applications employed in environmental remote sensing using optical and thermal infrared satellite-sensors aiming to map natural resources, crops, groundwater, surface water, aquatic ecosystem, land degradation, air quality, renewable energy, regional resources, and climate-related geophysical processes. The technologies presented in this book also include satellite images, space-borne radar sensors focusing on the most versatile one, data from synthetic aperture radar (SAR), scatterometers and radar altimeters in Egypt. This volume also presents a thorough explanation of the remote sensing role showing physical fundamentals of the climate change phenomenon including gas emissions, and the impact on resources concerning the sustainable development of Egypt. Besides, the book includes an analysis of oil pollution in both Mediterranean and Red Seas This book is intended for environmental policymakers working in Egypt as well as scientists working with remote sensing technologies in highly populated arid regions.

Remote Sensing of Plant Biodiversity Jeannine Cavender-Bares 2020-01-01 This Open Access volume aims to methodologically improve our understanding of biodiversity by linking disciplines that incorporate remote sensing, and uniting data and perspectives in the fields of biology, landscape ecology, and geography. The book provides a framework for how biodiversity can be detected and evaluated--focusing particularly on plants--using proximal and remotely sensed hyperspectral data and other tools such as LiDAR. The volume, whose chapters bring together a large cross-section of the biodiversity community engaged in these methods, attempts to establish a common language across disciplines for understanding and implementing remote sensing of biodiversity across scales. The first part of the book offers a potential basis for remote detection of biodiversity. An overview of the nature of biodiversity is described, along with ways for determining traits of plant biodiversity through spectral analyses across spatial scales and linking spectral data to the tree of life. The second part details what can be detected spectrally and remotely. Specific instrumentation and technologies are described, as well as the technical challenges of detection and data synthesis, collection and processing. The third part discusses spatial resolution and integration across scales and ends with a vision for developing a global biodiversity monitoring system. Topics include spectral and functional variation across habitats and biomes, biodiversity variables for global scale assessment, and the prospects and pitfalls in remote sensing of biodiversity at the global scale.

Remote Sensing for Aquaculture

Pierre Gernez 2021-03-05
Statistics with Applications in Biology and Geology Preben Blaesild 2002-12-27 The use of statistics is fundamental to many endeavors in biology and geology. For students and professionals in these fields, there is no better way to build a statistical background than to present the concepts and techniques in a context relevant to their interests. Statistics with Applications in Biology and Geology provides a practical introduction to using fundamental parametric statistical models frequently applied to data analysis in biology and geology. Based on material developed for an introductory statistics course and classroom tested for nearly 10 years, this treatment establishes a firm basis in models, the likelihood method, and numeracy. The models addressed include one sample, two samples, one- and two-way analysis of variance, and linear regression for normal data and similar models for binomial, multinomial, and Poisson data. Building on the familiarity developed with those models, the generalized linear models are introduced, making it possible for readers to handle fairly complicated models for both continuous and discrete data. Models for directional data are treated as well. The emphasis is on parametric models, but the book also includes a chapter on the most important nonparametric tests. This presentation incorporates the use of the SAS statistical software package, which authors use to illustrate all of the statistical tools described. However, to reinforce understanding of the basic concepts, calculations for the simplest models are also worked through by hand. SAS programs and the data used in the examples and exercises are available on the Internet.
Machine Learning Techniques Applied to Geoscience Information System and Remote Sensing Hyung-Sup Jung 2019-09-03 As computer and space technologies have been developed, geoscience information systems (GIS) and remote sensing (RS) technologies, which deal with the geospatial information, have been rapidly maturing. Moreover, over the last few decades, machine learning techniques including artificial neural network (ANN), deep learning, decision tree, and support vector machine (SVM) have been successfully applied to geospatial science and engineering research fields. The machine learning techniques have been widely applied to GIS and RS research fields and have recently produced valuable results in the areas of geoscience, environment, natural hazards, and natural resources. This book is a collection representing novel contributions detailing machine learning techniques as applied to geoscience information systems and remote sensing.
Artificial Neural Networks and Evolutionary Computation in Remote Sensing Taskin Kavzoglu 2021-01-19 Artificial neural networks (ANNs) and evolutionary computation methods have been successfully applied in remote sensing applications since they offer unique advantages for the analysis of remotely-sensed images. ANNs are effective in finding underlying relationships and structures within multidimensional datasets. Thanks to new sensors, we have images with more spectral bands at higher spatial resolutions, which clearly recall big data problems. For this purpose, evolutionary algorithms become the best solution for analysis. This book includes eleven high-quality papers, selected after a careful reviewing process, addressing current remote sensing problems. In the chapters of the book, superstructural optimization was suggested for the optimal design of feedforward neural networks, CNN networks were deployed for a nanosatellite payload to select images eligible for transmission to ground, a new weight feature value convolutional neural network (WFCNN) was applied for fine remote sensing image segmentation and extracting improved land-use information, mask regional-convolutional neural networks (Mask R-CNN) was employed for extracting valley fill faces, state-of-the-art convolutional neural network (CNN)-based object detection models were applied to automatically detect airplanes and ships in VHR satellite images, a coarse-to-fine detection strategy was employed to detect ships at different sizes, and a deep quadruplet network (DQN) was proposed for hyperspectral image classification.
UAV Photogrammetry and Remote Sensing Fernando Carvajal-Ramírez 2021-09-06 The concept of remote sensing as a way of capturing information from an object without making contact with it has, until recently, been exclusively focused on the use of Earth observation satellites. The emergence of unmanned aerial vehicles (UAV) with Global Navigation Satellite System (GNSS) controlled navigation and sensor-carrying capabilities has increased the number of publications related to new remote sensing from much closer distances. Previous knowledge about the behavior of the Earth's surface under the incidence different wavelengths of energy has been successfully applied to a large amount of data recorded from UAVs, thereby increasing the special and temporal resolution of the products obtained. More specifically, the ability of UAVs to be positioned in the air at pre-programmed coordinate points; to track flight paths; and in any case, to record the coordinates of the sensor position at the time of the shot and at the pitch, yaw, and roll angles have opened an interesting field of applications for low-altitude aerial photogrammetry, known as UAV photogrammetry. In addition, photogrammetric data processing has been improved thanks to the combination of new algorithms, e.g., structure from motion (SfM), which solves the collinearity equations without the need for any control point, producing a cloud of points referenced to an arbitrary coordinate system and a full camera calibration, and the multi-view stereopsis (MVS) algorithm, which applies an expanding procedure of sparse set of matched keypoints in order to obtain a dense point cloud. The set of technical advances described above allows for geometric modeling of terrain surfaces with high accuracy, minimizing the need for topographic campaigns for georeferencing of such products. This Special Issue aims to compile some applications realized thanks to the synergies established between new remote sensing from close distances and UAV photogrammetry.
Remote Sensing of Agriculture and Land Cover/Land Use Changes in South and Southeast Asian Countries Krishna Prasad Vadrevu 2022-03-28 This book sheds new light on the remote sensing of agriculture in South/Southeast Asian (S/SEA) countries. S/SEA countries are growing rapidly in terms of population, industrialization, and urbanization. One of the critical challenges in the region is food security. In S/SEA, although total food production and productivity have increased in previous decades, in recent years, the growth rate of food production has slowed down, mostly due to land use change, market forces and policy interventions. Further, the weather and climate systems in the region driven primarily by monsoon variability are resulting in droughts or flooding, impacting agricultural production. Therefore, monitoring crops, including agricultural land cover changes at regular intervals, is essential to predict and prepare for disruptions in the food supply in the S/SEA countries. The current book captures the latest research on the remote sensing of agricultural land cover/ land use changes, including mapping and monitoring crops, crop yields, biophysical parameter retrievals, multi-source data fusion for agricultural applications, and chapters on decision making and early warning systems for food security. The authors of this book are international experts in the field, and their contributions highlight the use of remote sensing and geospatial technologies for agricultural research and applications in South/Southeast Asia.
Remote Sensing Applications for Agriculture and Crop Modelling Piero Toscano 2020-02-13 Crop models and remote sensing techniques have been combined and applied in agriculture and crop estimation on local and regional scales, or worldwide, based on the simultaneous development of crop models and remote sensing. The literature shows that many new remote sensing sensors and valuable methods have been developed for the retrieval of canopy state variables and soil properties from remote sensing data for assimilating the retrieved variables into crop models. At the same time, remote sensing has been used in a staggering number of applications for agriculture. This book sets the context for remote sensing and modelling for agricultural systems as a mean to minimize the environmental impact, while increasing production and productivity. The eighteen papers published in this Special Issue, although not representative of all the work carried out in the field of Remote Sensing for agriculture and crop modeling, provide insight into the diversity and the complexity of developments of RS applications in agriculture. Five thematic focuses have emerged from the published papers: yield estimation, land cover mapping, soil nutrient balance, time-specific management zone delineation and the use of UAV as agricultural aerial sprayers. All contributions exploited the use of remote sensing data from different platforms (UAV, Sentinel, Landsat, QuickBird, CBERS, MODIS, WorldView), their assimilation into crop models (DSSAT, AQUACROP, EPIC, DELPHI) or on the synergy of Remote Sensing and modeling, applied to cardamom, wheat, tomato, sorghum, rice, sugarcane and olive. The intended audience is researchers and postgraduate students, as well as those outside academia in policy and practice.
Elements of Statistical Computing R.A. Thisted 2017-10-19 Statistics and computing share many close relationships. Computing now permeates every aspect of statistics, from pure description to the development of statistical theory. At the same time, the computational methods used in statistical work span much of computer science. Elements of Statistical Computing covers the broad usage of computing in statistics. It provides a comprehensive account of the most important computational statistics. Included are discussions of numerical analysis,

numerical integration, and smoothing. The author give special attention to floating point standards and numerical analysis; iterative methods for both linear and nonlinear equation, such as Gauss-Seidel method and successive over-relaxation; and computational methods for missing data, such as the EM algorithm. Also covered are new areas of interest, such as the Kalman filter, projection-pursuit methods, density estimation, and other computer-intensive techniques.

Innovations in Remote Sensing and Photogrammetry Simon Jones 2009-10-14 Remote sensing of our environment is becoming increasingly accessible and important in today's society. This book aims to highlight some of the broad and multi-disciplinary applications, and emerging practices, that remote sensing and photogrammetric technologies lend themselves to. The papers have been selected from the 13th and 14th Australasian Remote Sensing and Photogrammetry Conferences given by experts in remote sensing, spatial analysis and photogrammetry from across the Asia Pacific region. They are presented here as a collection of peer reviewed papers covering research into areas such as data fusion techniques and their applications in environmental monitoring, synoptic monitoring and data processing, terrestrial and marine applications of remote sensing, and photogrammetry.

Computer and Computing Technologies in Agriculture IV Daoliang Li 2011-02-01 This book constitutes Part I of the refereed four-volume post-conference proceedings of the 4th IFIP TC 12 International Conference on Computer and Computing Technologies in Agriculture, CCTA 2010, held in Nanchang, China, in October 2010. The 352 revised papers presented were carefully selected from numerous submissions. They cover a wide range of interesting theories and applications of information technology in agriculture, including simulation models and decision-support systems for agricultural production, agricultural product quality testing, traceability and e-commerce technology, the application of information and communication technology in agriculture, and universal information service technology and service systems development in rural areas.

Remote Sensing of Environmental Changes in Cold Regions Jinyang Du 2019-11-14 This Special Issue gathers papers reporting recent advances in the remote sensing of cold regions. It includes contributions presenting improvements in modeling microwave emissions from snow, assessment of satellite-based sea ice concentration products, satellite monitoring of ice jam and glacier lake outburst floods, satellite mapping of snow depth and soil freeze/thaw states, near-nadir interferometric imaging of surface water bodies, and remote sensing-based assessment of high arctic lake environment and vegetation recovery from wildfire disturbances in Alaska. A comprehensive review is presented to summarize the achievements, challenges, and opportunities of cold land remote sensing.