Erdas Imagine 2015

Bearing Capacity of Roads, Railways and Airfields includes the contributions to the 10th International Conference on the Bearing Capacity of Roads, Railways and Airfields (BCRRA 2017, 28-30 June 2017, Athens, Greece). The papers cover aspects related to materials, laboratory testing, design, construction, maintenance and management systems of transport infrastructure, and focus on roads, railways and airfields. Additional aspects that concern new materials and characterization, alternative rehabilitation techniques, technological advances as well as pavement and railway track substructure sustainability are included. The contributions discuss new concepts and innovative solutions, and are concentrated but not limited on the following topics: · Unbound aggregate materials and soil properties · Bound materials characteritics, mechanical properties and testing · Effect of traffic loading · In-situ measurements techniques and monitoring · Structural evaluation · Pavement serviceability condition · Rehabilitation and maintenance issues · Geophysical assessment · Stabilization and reinforcement · Performance modeling · Environmental challenges · Life cycle assessment and sustainability Bearing Capacity of Roads, Railways and Airfields is essential reading for academics and professionals involved or

interested in transport infrastructure systems, in particular roads, railways and airfields.

Water is a finite resource, and the demand for clean water is constantly growing. Clean freshwater is needed to meet irrigation demands for agriculture, for consumption, and for industrial uses. The world produces billions of tons of wastewater every year. This volume looks at a multitude of ways to capture, treat, and reuse wastewater and how to effectively manage watersheds. It presents a selection of new technologies and methods to recycle, reclaim, and reuse water for agricultural, industrial, and environmental purposes. The editor states that more than 75–80% of the wastewater we produce goes back to nature without being properly treated, leading to pollution and all sorts of negative health and productivity consequences. Topics cover a wide selection of research, including molluscs as a tool for river health assessment, flood risk modeling, biological removal of toxins from groundwater, saline water intrusion into coastal areas, urban drainage simulations, rainwater harvesting, irrigation topics, and more. Key features: • explores the existing methodologies in the field of reuse of wastewater • looks at different approaches in integrated water resources management • examines the issues of groundwater management and development • discusses saline water intrusion in coastal areas • presents various watershed management

approaches • includes case studies and analyses of various water management efforts
Ethnopharmacology and Biodiversity of Medicinal Plants provides a multitude of contemporary views on the diversity of medicinal plants, discussing both their traditional uses and therapeutic claims. This book emphasizes the importance of cataloging ethnomedical information as well as examining and preserving the diversity of traditional medicines. It also discusses the challenges present with limited access to modern medicine and the ways in which research can be conducted to enhance these modern practices. The book also explores the conservation procedures for endangered plant species and discusses their relevance to ethnopharmacology. Each chapter of this book relays the research of experts in the field who conducted research in diverse landscapes of India, providing a detailed account of the basic and applied approaches of ethnobotany and ethnopharmacology. The book reviews multiple processes pertaining to medicinal plants, such as collecting the traditional therapeutic values and validation methods. It also explores developments in the field such as the diversity and medicinal potential of unexplored plant species and applications in drug formulation to fight against anti-microbial resistance (AMR).
En este informe se presentan los resultados de los estudios sobre el cultivo de amapola

correspondientes a los períodos de monitoreo 2015-2016 y 2016-2017, realizados conjuntamente por el gobierno de México y la Oficina de las Naciones Unidas contra la Droga y el Delito (UNODC, por sus siglas en inglés) en el marco del proyecto MEXK54, Sistema de Monitoreo de Cultivos Ilícitos en el Territorio Mexicano. El informe demuestra el compromiso de las instituciones participantes con la comunidad internacional de mejorar los datos basados en evidencia para comprender mejor las tendencias del cultivo y la producción de drogas en el territorio nacional. Estas evidencias pueden contribuir a diseñar mejor las políticas públicas para abordar el problema de las drogas.

Abstract : This thesis provides an overview of oil spill scenarios and the remote sensing methods used for detection and mapping the spills. It also discusses the different kinds of thermal sensors used in oil spills detection. As UAS is becoming an important player in the oil and gas industry for the low operating costs involved, this research involved working with a cheap thermal airborne sensor mounted on DJI Phantom 4 system. Data was collected in two scenarios, first scenario is collecting data in Michigan's Upper Peninsula at a petroleum company location and the second scenario was an indoor experiment simulating an offshore spill. The aim of this research is to inspect the capability of

Lepton LWIR inexpensive sensor to detect the areas contaminated with oil. Data processing to create classification maps involved using ArcGIS 10.5.1, ERDAS Imagine 2015 and ENVI 5.3. Depending accuracy assessment (confusion matrices) for the classified images and comparing classified images with ground truth, results shows the Lepton thermal sensor worked well in differentiating oil from water and was not a good option when there are many objects in the area of interest. Future research recommendations are presented in this document.
This book provides information essential for anyone interested in climate and environmental change of the Himalayan region, including land and resource managers, environmental planners, conservationists, environmentalists, geographers, climatologists, ecologists, and students. The book is unique in its coverage of the current understanding of the science of climate change in the Himalayan mountain system and of the major impacts on physical systems and ecosystems. The book gives an overview of the physical science basis of climate change and explains drivers and processes of glacier and vegetation dynamics. The book covers relevant aspects of accelerated climate change observed in the Himalayan mountain system, and highlights the regional differentiation of climatic changes and associated environmental modifications. The focus is on climate variability and change, and how physical

systems and ecosystems respond to climate change impacts. Consequences include impacts on physical systems such as glacier shrinkage, glacial lake outburst floods, altered hydrological characteristics, permafrost warming and thawing, and mass movements on slopes. Climate change is also a powerful stressor on ecosystems and induces range shifts of plant and animal species and alterations in terms of phenology, biomass, plant cover, plant group dominance and species composition. Thus, ecosystem structure and functioning will be strongly affected. The book has an introductory chapter followed by a section on climate change, a section on impacts on glaciers and hydrology, and a section on vegetation dynamics. Each section has several chapters presenting key concepts, major drivers and key processes of environmental change in the Himalayan region from different perspectives. Climate change impacts in the Himalaya have not been studied in much detail, and respective findings were not presented so far in a comprehensive overview. This book summarizes the current knowledge of interactions between climate change and the dynamics of glaciers, hydrology, and vegetation.

Advanced imaging spectral technology and hyperspectral analysis techniques for multiple applications are the key features of the book. This book will present in one volume complete solutions

from concepts, fundamentals, and methods of acquisition of hyperspectral data to analyses and applications of the data in a very coherent manner. It will help readers to fully understand basic theories of HRS, how to utilize various field spectrometers and bioinstruments, the importance of radiometric correction and atmospheric correction, the use of analysis, tools and software, and determine what to do with HRS technology and data.

This Special Issue is a collection of papers addressing the scientific use of data acquired in the course of the TerraSAR-X mission 10 years after launch. The articles deal with the mission itself, the accuracy of the products, with differential interferometry, and with applications in the domains cryosphere, oceans, wetlands, and urban areas.

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.

Gum Arabic: Structure, Properties, Application and Economics explores the management practices of gum Arabic producing trees and their environmental role, the characteristics and properties of the gum, and presents current and developing uses in food, feed, and medicinal applications. The book provides insight into regulatory aspects of production and quality control as well as underscoring some of the geographically based differences in gum Arabic trees, production, and regulation of products. Written by experts in the field, the book provides current research and developments in gum Arabic. It is an important resource for researchers in industry and academia interested in the advances in this area. Written by leading experts from key gum Arabic producing regions of the world Explores the management practices of gum Arabic, from the environmental role of the tree to uses in food, feed, and medicinal applications Provides nanoscience and nanotechnology applications using gum Arabic

Discusses applications of gum Arabic in medicine and health Presents new research and trends in gum Arabic, investigating the physical properties, such as electric, optical, thermal, and magnetic

The 3rd International Conference on Foundations and Frontiers in Computer, Communication and Electrical Engineering is a notable event which brings together academia, researchers, engineers and students in the fields of Electronics and Communication, Computer and Electrical Engineering making the conference a perfect platform to share experience, f

Map Librarianship identifies basic geoliteracy concepts and enhances reference and instruction skills by providing details on finding, downloading, delivering, and assessing maps, remotely sensed imagery, and other geospatial resources and services, primarily from trusted government sources. By offering descriptions of traditional maps, geographic information systems (GIS), remote sensing, and other geospatial technologies, the book provides a timely and practical guide for the map and geospatial librarian to blend confidence in traditional library skill sets. Includes rarely discussed concepts of citing and referencing maps and geospatial data, fair use and copyright Creates an awareness and appreciation of existing print map collections, while building digital stewardship with surrogate map and aerial imagery collections Provides an introduction to the theory and applications of GIS, remote sensing, participatory neogeography and neocartography practices, and other geospatial technologies Includes a list of geospatial resources with descriptions and illustrations of commonly

used map types and formats, online geospatial data sources, and an introduction to the most commonly used geospatial software packages available, on both desktop and mobile platforms

This book is designed for a widely diverse audience, from those new to geoprocessing to veteran industry users. For newcomers, the Guide "provides a brief history of the field, an extensive glossary of terms, and notes about applications for the different processes described." For more experienced users, the Guide "includes the formulas and algorithms that are used in the code," so that exactly how each operation works can be readily seen. -- from Introduction.

This book provides a comprehensive discussion on urban growth and sprawl, and how they can be analyzed using remote sensing imageries. It compiles views of numerous researchers that help in understanding the urban growth and sprawl; their patterns, process, causes, consequences, and countermeasures; how remote sensing data and geographic information system techniques can be used in mapping, monitoring, measuring, analyzing, and simulating the urban growth and sprawl and what are the merits and demerits of available methods and models. This book will be of value for the scientists and researchers engaged in urban geographic research, especially using remote sensing imageries. This book will serve as a rigours literature review for them. Post graduate students of urban geography or urban/regional planning may refer this book as additional studies. This book may help the academicians for preparing lecture notes and delivering

lectures. Industry professionals may also be benefited from the discussed methods and models along with numerous citations.

This book provides an overview of the ecological indicators of landscape dynamics in the context of geographical landscape integration. Landscape dynamics depicts every change that occurs in the physical, biological, and cognitive assets of a landscape. To understand and interpret the complex physical, biological, and cognitive phenomena of landscapes, it is necessary to operate conceptually and practically on a broad range of spatial and temporal scales. Rapid land use changes have become a concern to environmentalists and planners because of their impacts on the natural ecosystem, which further determines socioeconomic dynamics. In this regard, the book discusses case studies that share new insights into how landscape patterns and processes impact small creatures, and how small creatures in turn influence landscape structure and composition. In turn, the relevant aspects of land use and land cover dynamics are covered, and the multi-faceted relationship between the substrata and ecological community is highlighted. The book is unique in its focus on the application of spatial informatics such as automatic building extraction from high-resolution imagery; a soil resource inventory for meeting the challenges of land degradation; hydrological modeling; the temporal variation analysis of glacier area and the identification and mapping of glacial lakes; morphometric analysis of river basins; and the monitoring and modeling of urban sprawl, among other

features.

This book contains a selection of papers accepted for presentation and discussion at ROBOT 2015: Second Iberian Robotics Conference, held in Lisbon, Portugal, November 19th-21th, 2015. ROBOT 2015 is part of a series of conferences that are a joint organization of SPR – “Sociedade Portuguesa de Robótica/ Portuguese Society for Robotics”, SEIDROB – Sociedad Española para la Investigación y Desarrollo de la Robótica/ Spanish Society for Research and Development in Robotics and CEA-GTRob – Grupo Temático de Robótica/ Robotics Thematic Group. The conference organization had also the collaboration of several universities and research institutes, including: University of Minho, University of Porto, University of Lisbon, Polytechnic Institute of Porto, University of Aveiro, University of Zaragoza, University of Malaga, LIACC, INESC-TEC and LARSyS. Robot 2015 was focussed on the Robotics scientific and technological activities in the Iberian Peninsula, although open to research and delegates from other countries. The conference featured 19 special sessions, plus a main/general robotics track. The special sessions were about: Agricultural Robotics and Field Automation; Autonomous Driving and Driver Assistance Systems; Communication Aware Robotics; Environmental Robotics; Social Robotics: Intelligent and Adaptable AAL Systems; Future Industrial Robotics Systems; Legged Locomotion Robots; Rehabilitation and Assistive Robotics; Robotic Applications in Art and Architecture; Surgical Robotics; Urban Robotics; Visual Perception for Autonomous Robots; Machine Learning in

Robotics; Simulation and Competitions in Robotics; Educational Robotics; Visual Maps in Robotics; Control and Planning in Aerial Robotics, the XVI edition of the Workshop on Physical Agents and a Special Session on Technological Transfer and Innovation.

This book presents fundamental and applied research aimed at the development of smart cities across India. Based on the exploration of an extensive array of multidisciplinary literature, this book discusses critical factors of smart city initiatives: management and organization, technology, governance, policy, people and communities, economy, infrastructure, and natural environment. These factors are broadly covered under the integrative framework of the book to examine the vision and challenges of smart city initiatives. The book suggests directions and agendas for smart city research and outlines practical implications for government professionals, students, research scholars and policy makers. A lot of work is happening on smart cities as it is an upcoming area of research and development. At international level, and even in India, the concept of smart cities concept is a hot topic at universities, research centers, ministries, transport departments, civic bodies, environment, energy and disaster organizations, town planners and policy makers. This book provides ideas and information to government officials, investors, experts and research students.

This book covers several themes related to forestry, agriculture, water, soil, urban, and atmospheric research. GIScience technology systems have increased in significance in recent decades and have the ability to

acquire information at ground level with a higher spectral resolution using a field radio-spectrometer, which is a great improvement compared to other remote sensing systems. GIScience technology systems are widely used for solving and understanding the concept of forestry, crop, water resources, and related research themes. This book aims to advance the scientific understanding of GIScience technology and applications. The chapters present GIScience data integration with other sources such as LiDAR, Multi-spectral data and their applications in forestry, crop assessment, soil assessment, mineral mapping and related themes. The book will be of interest to geospatial experts, modellers, foresters, agricultural scientists, hyperspectral remote sensing and space community, ecologists and conservation communities, environmental consultants, big data compilers, and computing experts.

This book discusses various issues relating to water resources, climate change and sustainable development. Water is the main driving force behind three major pillars of sustainable development: environmental, social and economic. As stated in the United Nations Sustainable Development Goals, development of these pillars rests on the availability and management of resources to fulfill the demand for water. By identifying the various challenges in the context of water resources and climate change, the book offers insights into achieving a better and more sustainable future. It provides a unique forum for practitioners and academics to exchange ideas on emerging issues, approaches, and practices in the area of water resources, climate change, and sustainability,

while also presenting valuable information for policymakers on the changing contours of water management and climate change mitigation. As such it is a useful resource for decision-makers at the local as well as the global level.

Climate change has emerged as one of the predominant global concerns of the 21st century. Statistics show that the average surface temperature of the Earth has increased by about 1.18°C since the late 19th century and the sea levels are rising due to the melting of glaciers. Further rise in the global temperature will have dire consequences for the survival of humans on the planet Earth. There is a need to monitor climatic data and associated drivers of changes to develop sustainable planning. The anthropogenic activities that are linked to climate change need scientific evaluation and must be curtailed before it is too late. This book contributes significantly in the field of sustainable natural resource management linked to climate change. Up to date research findings from developing and developed countries like India, Indonesia, Japan, Malaysia, Sri Lanka and the USA have been presented through selected case studies covering different thematic areas. The book has been organised into six major themes of sustainable natural resource management, determinants of forest productivity, agriculture and climate change, water resource management and riverine health, climate change threat on natural resources, and linkages between natural resources and biotic-abiotic stressors to develop the concept and to present the findings in a way that is useful for a wide range of readers. While the

range of applications and innovative techniques is constantly increasing, this book provides a summary of findings to provide the updated information. This book will be of interest to researchers and practitioners in the field of environmental sciences, remote sensing, geographical information system, meteorology, sociology and policy studies related to natural resource management and climate change.

This book offers the scientific basis for the ample evaluation of badland management in India and some surrounding regions. It examines the processes operating in the headwaters and main channels of ephemeral rivers in lateritic environments of India. In particular, the book covers a range of vital topics in the areas of gully erosion and water to soil erosion at lateritic uplands regions of India and other regions in Asia. It explores the probable gully erosion modeling through Remote Sensing & GIS Techniques. It is divided into three units. Unit I deals with the introduction of badland, types of badland and the process of badland formation. Unit II is devoted to a description of quantitative measurements. Unit III deals with the control and management processes related to various issues from different regions. As such this book serves as a reference book for research activities in this area. It is an efficient guide for aspiring researchers in applied geography, explaining advanced techniques to help students recognize both simple and complex concepts.

This book comprises select proceedings of the International Conference on Smart Technologies for Energy, Environment, and Sustainable Development

(ICSTEESD 2018). The chapters are broadly divided into three focus areas, viz. energy, environment, and sustainable development, and discusses the relevance and applications of smart technologies in these fields. A wide variety of topics such as renewable energy, energy conservation and management, energy policy and planning, environmental management, marine environment, green building, smart cities, smart transportation are covered in this book. Researchers and professionals from varied engineering backgrounds contribute chapters with an aim to provide economically viable solutions to sustainable development challenges. The book will prove useful for academics, professionals, and policy makers interested in sustainable development.

The Niger delta with its gentle slope and low elevation is extremely sensitive to effects of climate change. Its adaptive capacity is the second lowest in terms of socio-economic development in Nigeria. Quantitative studies on developing measures for coastal planning and management in the lower Niger delta have been limited by data availability and inaccessibility of parts of the delta. The use of satellite data can help bridge the data gap by providing ancillary data (imagery, elevation, altimetry etc.) that can be used to quantify the effects of SLR in the Niger delta. This thesis uses satellite data as the main source for hydrodynamic modelling and GIS analysis. Until recently such data might not have the accuracy and precision of directly measured data. However recent innovative approaches have enabled better exploitation of satellite data to overcome these

limitations and produce adequate results to assess the impact of SLR on the Niger delta in an integrated way that will lead to practical recommendations for adaptation. Using projected global eustatic SLR values in combination with land subsidence, this thesis estimated SLR levels for the Niger delta and its effect on inundation areas and flood extent. The results indicate that the Niger delta is very vulnerable to inundation and that even minimal SLR will affect flooding in the lower Niger delta since the area continues to subside. A new coastal vulnerability index was developed in this thesis by evaluating physical, social and human influence indicators of exposure, susceptibility and resilience. The results show that parts of the Niger delta are highly vulnerable to SLR and need adequate mitigation/adaptation measures to protect them. It is recommended that sustainable local resilience practices already being used in parts of the Niger delta should be included in adaptation planning.

This exciting new volume will provide a comprehensive overview of the applications of geoinformatics technology for engineers, scientists, and students to become more productive, more aware, and more responsive to global climate change issues and how to manage sustainable development of Earth's resources. Over the last few years, the stress on natural resources has increased enormously due to anthropogenic activities especially through urbanization and industrialization processes. Sustainable development while protecting the Earth's environment involves the best possible management of natural resources, subject to the availability of reliable,

accurate and timely information on regional and global scales. There is an increasing demand for an interdisciplinary approach and sound knowledge on each specific resource, as well as on the ecological and socio-economic perspectives related to their use. Geoinformatics, including Remote Sensing (RS), Geographical Information System (GIS), and Global Positioning System (GPS), is a groundbreaking and advanced technology for acquiring information required for natural resource management and addressing the concerns related to sustainable development. It offers a powerful and proficient tool for mapping, monitoring, modeling, and management of natural resources. There is, however, a lack of studies in understanding the core science and research elements of geoinformatics, as well as larger issues of scaling to use geoinformatics in sustainable development and management practices of natural resources. There is also a fundamental gap between the theoretical concepts and the operational use of these advance techniques. Sustainable Development Practices Using Geoinformatics, written by well-known academicians, experts and researchers provides answers to these problems, offering the engineer, scientist, or student the most thorough, comprehensive, and practical coverage of this subject available today, a must-have for any library.

This book focuses on international research in flood-related areas and sustainable management. It consists of a compilation of innovative works, demonstrating best practices in flood management and recommend flood solutions. The selected papers cover the fundamentals

and latest advances in the area, complete with illustrations, diagrams and tables. These proceedings serve as a source of information and state-of-the-art technology in managing floods to improve quality of life.
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.
In the 1960s, the governments of Colombia, Peru, and Bolivia launched agricultural settlement programs in

each country's vast Amazonian frontier lowlands. Two decades later, these exact same zones had transformed into the centers of the illicit cocaine boom of the Americas. Drawing on concepts from both history and anthropology, The Origins of Cocaine explores how three countries with divergent different mid-century political trajectories ended up with parallel outcomes in illicit frontier economies and cocalero cultures. Bringing together transnational, national, and local analyses, the volume provides an in-depth examination of the deep origins of drug economics in the Americas. As the first substantial study on the shift from agrarian colonization to narcotization, The Origins of Cocaine will appeal to scholars and postgraduate students of Latin American history, anthropology, globalization, development and environmental studies.

Combining versatile data sets from multiple satellite sensors with advanced thematic information retrieval is a powerful way for studying complex earth systems. The book Multisensor Data Fusion and Machine Learning for Environmental Remote Sensing offers complete understanding of the basic scientific principles needed to perform image processing, gap filling, data merging, data fusion, machine learning, and feature extraction. Written by two experts in remote sensing, the book presents the required basic concepts, tools, algorithms, platforms, and technology hubs toward advanced integration. By merging and fusing data sets collected from different satellite sensors with common features, we are enabled to utilize the strength of each satellite sensor to the maximum extent. The inclusion of machine learning or

data mining techniques to aid in feature extraction after gap filling, data merging and/or data fusion further empowers earth observation, leading to confirm the whole is greater than the sum of its parts. Contemporary applications discussed in this book make all essential knowledge seamlessly integrated by an interdisciplinary manner. These case-based engineering practices uniquely illustrate how to improve such an emerging field of importance to cope with the most challenging real-world environmental monitoring issues.

This book presents recent findings on virtually every aspect of wireless IoT and analytics for agriculture. It discusses IoT-based monitoring systems for analyzing the crop environment, and methods for improving the efficiency of decision-making based on the analysis of harvest statistics. In turn, it addresses the latest innovations, trends, and concerns, as well as practical challenges encountered and solutions adopted in the fields of IoT and analytics for agriculture. In closing, it explores a range of applications, including: intelligent field monitoring, intelligent data processing and sensor technologies, predictive analysis systems, crop monitoring, and weather data-enabled analysis in IoT agro-systems.

A volume in the three-volume Remote Sensing Handbook series, Remote Sensing of Water Resources, Disasters, and Urban Studies documents the scientific and methodological advances that have taken place during the last 50 years. The other two volumes in the series are Remotely Sensed Data Characterization, Classification, and Accuracies, and Land Reso

This book identifies the need for modeling auxiliary knowledge of the terrain to enhance the prediction accuracy of meteorological parameters. The spatial and spatio-temporal prediction of these parameters are important for the scientific community, and the semantic kriging (SemK) and its variants facilitate different types of prediction and forecasting, such as spatial and spatio-temporal, a-priori and a-posterior, univariate and multivariate. As such, the book also covers the process of deriving the meteorological parameters from raw satellite remote sensing imagery, and helps understanding different prediction method categories and the relation between spatial interpolation methods and other prediction methods. The book is a valuable resource for researchers working in the area of prediction of meteorological parameters, semantic analysis (ontology-based reasoning) of the terrain, and improving predictions using auxiliary knowledge of the terrain.

This book addresses the various challenges in achieving sustainable groundwater development, management, and planning in semi-arid regions, with a focus on India, and discusses advanced remote sensing and GIS techniques for the estimation and management of groundwater resources. The book is timely as there is a need for a better understanding of the various tools and methods required to efficiently and sustainably meet the growing demand for clean surface and groundwater in developing countries, and how these tools can be combined with other strategies in a multi-disciplinary fashion to achieve this goal in water-scarce regions. To

wit, the book combines remote sensing and GIS techniques, runoff modeling, aquifer mapping, land use and land cover analyses, evapotranspiration estimation, crop coefficients, and water policy approaches. This will be of use to academics, policymakers, social scientists, and professionals involved in the various aspects of sustainable groundwater development, planning, and management.

Image Processing and Data Analysis with ERDAS IMAGINE®CRC Press

Shelving Guide: This book will present new research regarding the interdisciplinary applications of spatial information sciences for identification, assessment, monitoring, and modeling issues related to natural resources and environmental management. It will focus on the creation, collection, storage, processing, modeling, interpretation, display and dissemination of spatio-temporal data, which could greatly aid with environmental management issues including ecosystem change, resource utilization, land use management, and environmental pollution. The positive environmental impacts of information technology advancements with regard to global environmental and climate change will also be discussed. Features Explains how geospatial information can best serve environmental management needs, including ecosystem change, resource utilization, land use management, and environmental pollution. Examines the environmental

impacts of information technology advancements with regard to global environmental and climate change. Focuses on the creation, collection, storage, processing, modeling, interpretation, display and dissemination of environmental spatio-temporal data. Presents examples of applications for spatial information sciences regarding the assessment, monitoring, and modeling of natural resources. Includes practical case studies in every chapter. High spatial resolution remote sensing is an area of considerable current interest and builds on developments in object-based image analysis, commercial high-resolution satellite sensors, and UAVs. It captures more details through high and very high resolution images (10 to 100 cm/pixel). This unprecedented level of detail offers the potential extraction of a range of multi-resource management information, such as precision farming, invasive and endangered vegetative species delineation, forest gap sizes and distribution, locations of highly valued habitats, or sub-canopy topographic information. Information extracted in high spatial remote sensing data right after a devastating earthquake can help assess the damage to roads and buildings and aid in emergency planning for contact and evacuation. To effectively utilize information contained in high spatial resolution imagery, High Spatial Resolution Remote Sensing: Data, Analysis, and Applications addresses some key questions: What are the

challenges of using new sensors and new platforms? What are the cutting-edge methods for fine-level information extraction from high spatial resolution images? How can high spatial resolution data improve the quantification and characterization of physical-environmental or human patterns and processes? The answers are built in three separate parts: (1) data acquisition and preprocessing, (2) algorithms and techniques, and (3) case studies and applications. They discuss the opportunities and challenges of using new sensors and platforms and high spatial resolution remote sensing data and recent developments with a focus on UAVs. This work addresses the issues related to high spatial image processing and introduces cutting-edge methods, summarizes state-of-the-art high spatial resolution applications, and demonstrates how high spatial resolution remote sensing can support the extraction of detailed information needed in different systems. Using various high spatial resolution data, the third part of this book covers a range of unique applications, from grasslands to wetlands, karst areas, and cherry orchard trees.

This book comprises select proceedings of the First International Conference on Geomatics in Civil Engineering (ICGCE 2018). This book presents latest research on applications of geomatics engineering in different domains of civil engineering, like structural engineering, geotechnical engineering,

hydraulic and water resources engineering, environmental engineering and transportation engineering. It also covers miscellaneous applications of geomatics in a wide range of technical and societal problems making use of geospatial information, engineering principles, and relational data structures involving measurement sciences. The book proves to be very useful for the scientific and engineering community working in the field of geomatics and geospatial technology.
Globally, a wide variety of organizations rely on ERDAS IMAGINE® daily, including local, state and national mapping agencies, transportation departments, defense organizations, engineering and utility companies and many more. ERDAS IMAGINE® is a powerful software package used to collect, process, analyze and understand raw geospatial data, it has become the industry standard in digital image processing. This book provides the first comprehensive guide to develop a proficiency in digital image processing of remotely sensed data from a research/real-world application perspective, along with robust hands-on, start-to-finish examples that represent the most commonly/traditionally used methods.
The volume contains 75 papers presented at International Conference on Communication and Networks (COMNET 2015) held during February 19–20, 2016 at Ahmedabad Management

Association (AMA), Ahmedabad, India and organized by Computer Society of India (CSI), Ahmedabad Chapter, Division IV and Association of Computing Machinery (ACM), Ahmedabad Chapter. The book aims to provide a forum to researchers to propose theory and technology on the networks and services, share their experience in IT and telecommunications industries and to discuss future management solutions for communication systems, networks and services. It comprises of original contributions from researchers describing their original, unpublished, research contribution. The papers are mainly from 4 areas – Security, Management and Control, Protocol and Deployment, and Applications. The topics covered in the book are newly emerging algorithms, communication systems, network standards, services, and applications.

If you are a GIS professional, a consultant, a student, or perhaps a fast learner who wants to go beyond the basics of QGIS, then this book is for you. It will prepare you to realize the full potential of QGIS.