

Data Analytics Framework R And Hadoop Geo Location Based

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Distributed and Parallel Architectures for Spatial Data

- Alberto Belussi 2021-01-20

This book aims at promoting new and innovative studies, proposing new architectures or innovative evolutions of existing ones, and illustrating experiments on current technologies in order to improve the efficiency and effectiveness of distributed and cluster systems when they deal with spatiotemporal data.

Big Data Science and Analytics for Smart Sustainable Urbanism

- Simon Elias Bibri 2019-05-30

We are living at the dawn of what has been termed 'the fourth paradigm of science,' a scientific revolution that is marked by both the emergence of big data science and analytics, and by the increasing adoption of the underlying technologies in scientific and scholarly research practices. Everything about science development or knowledge production is fundamentally changing thanks to the ever-increasing deluge of data. This is the primary fuel of the new age, which powerful computational processes or analytics algorithms are using to generate valuable knowledge for enhanced

decision-making, and deep insights pertaining to a wide variety of practical uses and applications. This book addresses the complex interplay of the scientific, technological, and social dimensions of the city, and what it entails in terms of the systemic implications for smart sustainable urbanism. In concrete terms, it explores the interdisciplinary and transdisciplinary field of smart sustainable urbanism and the unprecedented paradigmatic shifts and practical advances it is undergoing in light of big data science and analytics. This new era of science and technology embodies an unprecedentedly transformative and constitutive power—manifested not only in the form of revolutionizing science and transforming knowledge, but also in advancing social practices, producing new discourses, catalyzing major shifts, and fostering societal transitions. Of particular relevance, it is instigating a massive change in the way both smart cities and sustainable cities are studied and understood, and in how they are planned, designed, operated, managed, and governed in the face of

urbanization. This relates to what has been dubbed data-driven smart sustainable urbanism, an emerging approach based on a computational understanding of city systems and processes that reduces urban life to logical and algorithmic rules and procedures, while also harnessing urban big data to provide a more holistic and integrated view or synoptic intelligence of the city. This is increasingly being directed towards improving, advancing, and maintaining the contribution of both sustainable cities and smart cities to the goals of sustainable development. This timely and multifaceted book is aimed at a broad readership. As such, it will appeal to urban scientists, data scientists, urbanists, planners, engineers, designers, policymakers, philosophers of science, and futurists, as well as all readers interested in an overview of the pivotal role of big data science and analytics in advancing every academic discipline and social practice concerned with data-intensive science and its application, particularly in relation to sustainability.

Innovations in Digital Research Methods - Peter Halfpenny 2015-05-18

Vast amounts of digital data are now generated daily by people as they go about their lives, yet social researchers are struggling to exploit it. At the same time, the challenges faced by society in the 21st century are growing ever more complex, and demands research that is bigger in scale, more collaborative and multi-disciplinary than ever before. This cutting-edge volume provides an accessible introduction to innovative digital social research tools and methods that harness this 'data deluge' and successfully tackle key research challenges. Contributions from leading international researchers cover topics such as: Qualitative,

quantitative and mixed methods research Data management Social media and social network analysis Modeling and simulation Survey methods Visualizing social data Ethics and e-research The future of social research in the digital age This vibrant introduction to innovative digital research methods is essential reading for anyone conducting social research today.

ICIDC 2022 - Zuriati Ahmad Zukarnain 2022-10-13

The 2022 International Conference on Information Economy, Data Modeling and Cloud Computing (ICIDC 2022) was successfully held in Qingdao, China from June 17 to 19, 2022. Under the impact of COVID-19, ICIDC 2022 was held adopting a combination of online and offline conference. During this conference, we were greatly honored to have Prof Datuk Dr Hj Kasim Hj Md Mansur from Universiti Malaysia Sabah, Malaysia to serve as our Conference Chairman. And there were 260 individuals attending the conference. The conference agenda was composed of keynote speeches, oral presentations, and online Q&A discussion. The proceedings of ICIDC 2022 cover various topics, including Big Data Finance, E-Commerce and Digital Business, Modeling Method, 3D Modeling, Internet of Things, Cloud Computing Platform, etc. All the papers have been checked through rigorous review and processes to meet the requirements of publication. Data modeling allows us to obtain the dynamic change trend of various indicator data, so how to use big data information to model and study the development trend of economic operation plan is of great significance. And that is exactly the purpose of this conference, focusing on the application of big data in the economic field as well as conducting more profound research in combination with cloud computing.

Advanced Multimedia and Ubiquitous Engineering - James

J. (Jong Hyuk) Park 2017-05-11

This book presents the proceedings of the 11th International Conference on Multimedia and Ubiquitous Engineering (MUE2017) and the 12th International Conference on Future Information Technology (FutureTech2017), held in Seoul, South Korea on May 22–24, 2017. These two conferences provided an opportunity for academic and industrial professionals to discuss recent advances in the area of multimedia and ubiquitous environments including models and systems, new directions, and novel applications associated with the utilization and acceptance of ubiquitous computing devices and systems. The resulting papers address the latest technological innovations in the fields of digital convergence, multimedia convergence, intelligent applications, embedded systems, mobile and wireless communications, bio-inspired computing, grid and cloud computing, semantic web, user experience, HCI, and security and trust computing. The book offers a valuable resource for a broad readership, including students, academic researchers, and professionals. Further, it provides an overview of current research and a “snapshot” for those new to the field.

Manual of Digital Earth - Huadong Guo 2019-11-18

This open access book offers a summary of the development of Digital Earth over the past twenty years. By reviewing the initial vision of Digital Earth, the evolution of that vision, the relevant key technologies, and the role of Digital Earth in helping people respond to global challenges, this publication reveals how and why Digital Earth is becoming vital for acquiring, processing, analysing and mining the rapidly growing volume of global data sets about the Earth. The main aspects of Digital Earth covered here include: Digital

Earth platforms, remote sensing and navigation satellites, processing and visualizing geospatial information, geospatial information infrastructures, big data and cloud computing, transformation and zooming, artificial intelligence, Internet of Things, and social media. Moreover, the book covers in detail the multi-layered/multi-faceted roles of Digital Earth in response to sustainable development goals, climate changes, and mitigating disasters, the applications of Digital Earth (such as digital city and digital heritage), the citizen science in support of Digital Earth, the economic value of Digital Earth, and so on. This book also reviews the regional and national development of Digital Earth around the world, and discusses the role and effect of education and ethics. Lastly, it concludes with a summary of the challenges and forecasts the future trends of Digital Earth. By sharing case studies and a broad range of general and scientific insights into the science and technology of Digital Earth, this book offers an essential introduction for an ever-growing international audience.

Comprehensive Geographic Information Systems - 2017-07-21

Geographical Information Systems is a computer system used to capture, store, analyze and display information related to positions on the Earth's surface. It has the ability to show multiple types of information on multiple geographical locations in a single map, enabling users to assess patterns and relationships between different information points, a crucial component for multiple aspects of modern life and industry. This 3-volumes reference provides an up-to-date account of this growing discipline through in-depth reviews authored by leading experts in the field. VOLUME

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Covers a rapidly expanding discipline, providing readers with a detailed overview of all aspects of geographic information systems, principles and applications Emphasizes the practical, socioeconomic applications of GIS Provides readers with a reliable, one-stop comprehensive guide, saving them time in searching for the information they need from different sources

Spatial Synthesis - Xinyue Ye 2020-11-30

This book describes how powerful computing technology, emerging big and open data sources, and theoretical perspectives on spatial synthesis have revolutionized the way in which we investigate social sciences and humanities. It summarizes the principles and applications of human-centered computing and spatial social science and humanities research, thereby providing fundamental information that will help shape future research. The book illustrates how big spatiotemporal socioeconomic data facilitate the modelling of individuals' economic behavior in space and time and how the outcomes of such models can reveal information about economic trends across spatial scales. It describes how spatial social science and humanities research has shifted from a data-scarce to a data-rich environment. The chapters also describe how a powerful analytical framework for identifying space-time research

gaps and frontiers is fundamental to comparative study of spatiotemporal phenomena, and how research topics have evolved from structure and function to dynamic and predictive. As such this book provides an interesting read for researchers, students and all those interested in computational and spatial social sciences and humanities.

Human Centred Intelligent Systems - Alfred Zimmermann 2022-06-15

The volume includes papers presented at the International KES Conference on Human Centred Intelligent Systems 2022 (KES HCIS 2022), held in Rhodes, Greece on June 20–22, 2022. This book highlights new trends and challenges in intelligent systems, which play an important part in the digital transformation of many areas of science and practice. It includes papers offering a deeper understanding of the human-centred perspective on artificial intelligence, of intelligent value co-creation, ethics, value-oriented digital models, transparency, and intelligent digital architectures and engineering to support digital services and intelligent systems, the transformation of structures in digital businesses and intelligent systems based on human practices, as well as the study of interaction and the co-adaptation of humans and systems.

Big Data Computing for Geospatial Applications - Zhenlong Li 2020-11-23

The convergence of big data and geospatial computing has brought forth challenges and opportunities to Geographic Information Science with regard to geospatial data management, processing, analysis, modeling, and visualization. This book highlights recent advancements in integrating new computing approaches, spatial methods, and data management strategies to tackle

geospatial big data challenges and meanwhile demonstrates opportunities for using big data for geospatial applications. Crucial to the advancements highlighted in this book is the integration of computational thinking and spatial thinking and the transformation of abstract ideas and models to concrete data structures and algorithms.

Networking for Big Data - Shui Yu 2015-07-28

Networking for Big Data supplies an unprecedented look at cutting-edge research on the networking and communication aspects of Big Data. Starting with a comprehensive introduction to Big Data and its networking issues, it offers deep technical coverage of both theory and applications. The book is divided into four sections: introduction to Big Data, networking theory and design for Big Data, networking security for Big Data, and platforms and systems for Big Data applications. Focusing on key networking issues in Big Data, the book explains network design and implementation for Big Data. It examines how network topology impacts data collection and explores Big Data storage and resource management. Addresses the virtual machine placement problem Describes widespread network and information security technologies for Big Data Explores network configuration and flow scheduling for Big Data applications Presents a systematic set of techniques that optimize throughput and improve bandwidth for efficient Big Data transfer on the Internet Tackles the trade-off problem between energy efficiency and service resiliency The book covers distributed Big Data storage and retrieval as well as security, trust, and privacy protection for Big Data collection, storage, and search. It discusses the use of cloud infrastructures and highlights its benefits to

overcome the identified issues and to provide new approaches for managing huge volumes of heterogeneous data. The text concludes by proposing an innovative user data profile-aware policy-based network management framework that can help you exploit and differentiate user data profiles to achieve better power efficiency and optimized resource management.

Data Mining - Ciza Thomas 2018-08-22

This book on data mining explores a broad set of ideas and presents some of the state-of-the-art research in this field. The book is triggered by pervasive applications that retrieve knowledge from real-world big data. Data mining finds applications in the entire spectrum of science and technology including basic sciences to life sciences and medicine, to social, economic, and cognitive sciences, to engineering and computers. The chapters discuss various applications and research frontiers in data mining with algorithms and implementation details for use in real-world. This can be through characterization, classification, discrimination, anomaly detection, association, clustering, trend or evolution prediction, etc. The intended audience of this book will mainly consist of researchers, research students, practitioners, data analysts, and business professionals who seek information on the various data mining techniques and their applications.

Exploratory Data Analytics for Healthcare - R. Lakshmana Kumar 2021-12-24

Exploratory data analysis helps to recognize natural patterns hidden in the data. This book describes the tools for hypothesis generation by visualizing data through graphical representation and provides insight into advanced analytics concepts in an easy way. The

book addresses the complete data visualization technologies workflow, explores basic and high-level concepts of computer science and engineering in medical science, and provides an overview of the clinical scientific research areas that enables smart diagnosis equipment. It will discuss techniques and tools used to explore large volumes of medical data and offers case studies that focus on the innovative technological upgradation and challenges faced today. The primary audience for the book includes specialists, researchers, graduates, designers, experts, physicians, and engineers who are doing research in this domain.

Proceedings of 3rd International Conference on Computing Informatics and Networks - Ajith Abraham 2021-03-14

This book is a collection of high-quality peer-reviewed research papers presented in the Third International Conference on Computing Informatics and Networks (ICCIN 2020) organized by the Department of Computer Science and Engineering (CSE), Bhagwan Parshuram Institute of Technology (BPIT), Delhi, India, during 29–30 July 2020. The book discusses a wide variety of industrial, engineering and scientific applications of the emerging techniques. Researchers from academic and industry present their original work and exchange ideas, information, techniques and applications in the field of artificial intelligence, expert systems, software engineering, networking, machine learning, natural language processing and high-performance computing.

Deep Learning and Parallel Computing Environment for Bioengineering Systems - Arun Kumar Sangaiah 2019-07-26
Deep Learning and Parallel Computing Environment for Bioengineering Systems delivers a significant forum for the technical advancement of deep learning in parallel computing environment across bio-engineering diversified

domains and its applications. Pursuing an interdisciplinary approach, it focuses on methods used to identify and acquire valid, potentially useful knowledge sources. Managing the gathered knowledge and applying it to multiple domains including health care, social networks, mining, recommendation systems, image processing, pattern recognition and predictions using deep learning paradigms is the major strength of this book. This book integrates the core ideas of deep learning and its applications in bio engineering application domains, to be accessible to all scholars and academicians. The proposed techniques and concepts in this book can be extended in future to accommodate changing business organizations' needs as well as practitioners' innovative ideas. Presents novel, in-depth research contributions from a methodological/application perspective in understanding the fusion of deep machine learning paradigms and their capabilities in solving a diverse range of problems. Illustrates the state-of-the-art and recent developments in the new theories and applications of deep learning approaches applied to parallel computing environment in bioengineering systems. Provides concepts and technologies that are successfully used in the implementation of today's intelligent data-centric critical systems and multi-media Cloud-Big data *Analytic Methods in Systems and Software Testing* - Ron S. Kenett 2018-06-20

A comprehensive treatment of systems and software testing using state of the art methods and tools. This book provides valuable insights into state of the art software testing methods and explains, with examples, the statistical and analytic methods used in this field. Numerous examples are used to provide understanding in

applying these methods to real-world problems. Leading authorities in applied statistics, computer science, and software engineering present state-of-the-art methods addressing challenges faced by practitioners and researchers involved in system and software testing. Methods include: machine learning, Bayesian methods, graphical models, experimental design, generalized regression, and reliability modeling. Analytic Methods in Systems and Software Testing presents its comprehensive collection of methods in four parts: Part I: Testing Concepts and Methods; Part II: Statistical Models; Part III: Testing Infrastructures; and Part IV: Testing Applications. It seeks to maintain a focus on analytic methods, while at the same time offering a contextual landscape of modern engineering, in order to introduce related statistical and probabilistic models used in this domain. This makes the book an incredibly useful tool, offering interesting insights on challenges in the field for researchers and practitioners alike. Compiles cutting-edge methods and examples of analytical approaches to systems and software testing from leading authorities in applied statistics, computer science, and software engineering Combines methods and examples focused on the analytic aspects of systems and software testing Covers logistic regression, machine learning, Bayesian methods, graphical models, experimental design, generalized regression, and reliability models Written by leading researchers and practitioners in the field, from diverse backgrounds including research, business, government, and consulting Stimulates research at the theoretical and practical level Analytic Methods in Systems and Software Testing is an excellent advanced reference directed toward industrial and academic readers whose work in systems and software development

approaches or surpasses existing frontiers of testing and validation procedures. It will also be valuable to post-graduate students in computer science and mathematics.

Predictive Analytics For Dummies - Anasse Bari
2014-03-06

Combine business sense, statistics, and computers in a new and intuitive way, thanks to Big Data Predictive analytics is a branch of data mining that helps predict probabilities and trends. Predictive Analytics For Dummies explores the power of predictive analytics and how you can use it to make valuable predictions for your business, or in fields such as advertising, fraud detection, politics, and others. This practical book does not bog you down with loads of mathematical or scientific theory, but instead helps you quickly see how to use the right algorithms and tools to collect and analyze data and apply it to make predictions. Topics include using structured and unstructured data, building models, creating a predictive analysis roadmap, setting realistic goals, budgeting, and much more. Shows readers how to use Big Data and data mining to discover patterns and make predictions for tech-savvy businesses Helps readers see how to shepherd predictive analytics projects through their companies Explains just enough of the science and math, but also focuses on practical issues such as protecting project budgets, making good presentations, and more Covers nuts-and-bolts topics including predictive analytics basics, using structured and unstructured data, data mining, and algorithms and techniques for analyzing data Also covers clustering, association, and statistical models; creating a predictive analytics roadmap; and applying predictions to the web, marketing, finance, health care, and

elsewhere Propose, produce, and protect predictive analytics projects through your company with Predictive Analytics For Dummies.

Data Science and Human-Environment Systems - Steven M. Manson 2023-01-31

Transformation of the Earth's social and ecological systems is occurring at a rate and magnitude unparalleled in human experience. Data science is a revolutionary new way to understand human-environment relationships at the heart of pressing challenges like climate change and sustainable development. However, data science faces serious shortcomings when it comes to human-environment research. There are challenges with social and environmental data, the methods that manipulate and analyze the information, and the theory underlying the data science itself; as well as significant legal, ethical and policy concerns. This timely book offers a comprehensive, balanced, and accessible account of the promise and problems of this work in terms of data, methods, theory, and policy. It demonstrates the need for data scientists to work with human-environment scholars to tackle pressing real-world problems, making it ideal for researchers and graduate students in Earth and environmental science, data science and the environmental social sciences.

Data Science - Qurban A Memon 2019-09-26

The aim of this book is to provide an internationally respected collection of scientific research methods, technologies and applications in the area of data science. This book can prove useful to the researchers, professors, research students and practitioners as it reports novel research work on challenging topics in the area surrounding data science. In this book, some of the chapters are written in tutorial style concerning

machine learning algorithms, data analysis, information design, infographics, relevant applications, etc. The book is structured as follows: • Part I: Data Science: Theory, Concepts, and Algorithms This part comprises five chapters on data Science theory, concepts, techniques and algorithms. • Part II: Data Design and Analysis This part comprises five chapters on data design and analysis. • Part III: Applications and New Trends in Data Science This part comprises four chapters on applications and new trends in data science.

The Data Science Framework - Juan J. Cuadrado-Gallego 2020-10-01

This edited book first consolidates the results of the EU-funded EDISON project (Education for Data Intensive Science to Open New science frontiers), which developed training material and information to assist educators, trainers, employers, and research infrastructure managers in identifying, recruiting and inspiring the data science professionals of the future. It then deepens the presentation of the information and knowledge gained to allow for easier assimilation by the reader. The contributed chapters are presented in sequence, each chapter picking up from the end point of the previous one. After the initial book and project overview, the chapters present the relevant data science competencies and body of knowledge, the model curriculum required to teach the required foundations, profiles of professionals in this domain, and use cases and applications. The text is supported with appendices on related process models. The book can be used to develop new courses in data science, evaluate existing modules and courses, draft job descriptions, and plan and design efficient data-intensive research teams across scientific disciplines.

Big Data Analytics with R and Hadoop - Vignesh Prajapati
2013-11-25

Big Data Analytics with R and Hadoop is a tutorial style book that focuses on all the powerful big data tasks that can be achieved by integrating R and Hadoop. This book is ideal for R developers who are looking for a way to perform big data analytics with Hadoop. This book is also aimed at those who know Hadoop and want to build some intelligent applications over Big data with R packages. It would be helpful if readers have basic knowledge of R.

Proceedings of the International Conference on Advanced Intelligent Systems and Informatics 2017 - Aboul Ella Hassanien 2017-08-30

This book gathers the proceedings of the 3rd International Conference on Advanced Intelligent Systems and Informatics 2017 (AISI2017), which took place in Cairo, Egypt from September 9 to 11, 2017. This international and interdisciplinary conference, which highlighted essential research and developments in the field of informatics and intelligent systems, was organized by the Scientific Research Group in Egypt (SRGE). The book's content is divided into five main sections: Intelligent Language Processing, Intelligent Systems, Intelligent Robotics Systems, Informatics, and the Internet of Things.

Big Data Analytics Methods - Peter Ghavami 2019-12-16
Big Data Analytics Methods unveils secrets to advanced analytics techniques ranging from machine learning, random forest classifiers, predictive modeling, cluster analysis, natural language processing (NLP), Kalman filtering and ensembles of models for optimal accuracy of analysis and prediction. More than 100 analytics techniques and methods provide big data professionals,

business intelligence professionals and citizen data scientists insight on how to overcome challenges and avoid common pitfalls and traps in data analytics. The book offers solutions and tips on handling missing data, noisy and dirty data, error reduction and boosting signal to reduce noise. It discusses data visualization, prediction, optimization, artificial intelligence, regression analysis, the Cox hazard model and many analytics using case examples with applications in the healthcare, transportation, retail, telecommunication, consulting, manufacturing, energy and financial services industries. This book's state of the art treatment of advanced data analytics methods and important best practices will help readers succeed in data analytics.

Big Data Analytics - Anirban Mondal 2018-12-11

This book constitutes the refereed proceedings of the 6th International Conference on Big Data analytics, BDA 2018, held in Warangal, India, in December 2018. The 29 papers presented in this volume were carefully reviewed and selected from 93 submissions. The papers are organized in topical sections named: big data analytics: vision and perspectives; financial data analytics and data streams; web and social media data; big data systems and frameworks; predictive analytics in healthcare and agricultural domains; and machine learning and pattern mining.

Adaptive Health Management Information Systems: Concepts, Cases, and Practical Applications - Joseph Tan 2019-09-17

Adaptive Health Management Information Systems, Fourth Edition is a thorough resource for a broad range of healthcare professionals—from informaticians, physicians and nurses, to pharmacists, public health and allied health professionals—who need to keep pace the digital

transformation of health care. Wholly revised, updated, and expanded in scope, the fourth edition covers the latest developments in the field of health management information systems (HMIS) including big data analytics and machine learning in health care; precision medicine; digital health commercialization; supply chain management; informatics for pharmacy and public health; digital health leadership; cybersecurity; and social media analytics.

GIS Applications in the Tourism and Hospitality Industry
- Chaudhuri, Somnath 2018-04-13

Geographic information systems (GIS) provide information that can be useful across many disciplines. One of these disciplines is the travel and hospitality industry. *GIS Applications in the Tourism and Hospitality Industry* is a vital scholarly publication that explores the applications of GIS to the leisure travel industry, specifically the importance of GIS in trip planning, online bookings, and location-based services.

Highlighting coverage on a wide range of topics such as cultural heritage tourism, geospatial collaborative tourism recommender systems, and decision support systems, this book is geared toward business managers, academicians, researchers, graduate-level students, and professionals looking for current research on the impact of GIS on recreational travel.

Springer Handbook of Geographic Information - Wolfgang Kresse 2022-06-24

This handbook provides an exhaustive, one-stop reference and a state-of-the-art description of geographic information and its use. This new, substantially updated edition presents a complete and rigorous overview of the fundamentals, methods and applications of the multidisciplinary field of geographic information

systems. Designed to be a useful and readable desk reference book, but also prepared in various electronic formats, this title allows fast yet comprehensive review and easy retrieval of essential reliable key information. The *Springer Handbook of Geographic Information* is divided into three parts. Part A, Basics and Computer Science, provides an overview on the fundamentals, including descriptions of databases and encoding of geographic information. It also covers the underlying mathematical and statistics methods and modeling. A new chapter exemplifies the emerging use and analysis of big data in a geographic context. Part B offers rigorous descriptions of gathering, processing and coding of geographic information in a standardized way to allow interoperable use in a variety of systems; from traditional methods such as geodesy and surveying to state-of-the-art remote sensing and photogrammetry; from cartography to geospatial web services. Discussions on geosemantic interoperability and security of open distributed geospatial information systems complete the comprehensive coverage. The final part describes a wide array of applications in science, industry and society at large, such as agriculture, defense, transportation, energy and utilities, health and human services. The part is enhanced by new chapters on smart cities and building information modeling, as well as a complete overview of the currently available open-source geographic information systems. Using standardized international terminology, in accordance with ISO/TC 211 and INSPIRE, this handbook facilitates collaboration between different disciplines and is a must have for practitioners and new comers in industry and academia.

Knowledge Discovery in Big Data from Astronomy and Earth Observation - Petr Skoda 2020-04-23

Knowledge Discovery in Big Data from Astronomy and Earth Observation: Astrogeoinformatics bridges the gap between astronomy and geoscience in the context of applications, techniques and key principles of big data. Machine learning and parallel computing are increasingly becoming cross-disciplinary as the phenomena of Big Data is becoming common place. This book provides insight into the common workflows and data science tools used for big data in astronomy and geoscience. After establishing similarity in data gathering, pre-processing and handling, the data science aspects are illustrated in the context of both fields. Software, hardware and algorithms of big data are addressed. Finally, the book offers insight into the emerging science which combines data and expertise from both fields in studying the effect of cosmos on the earth and its inhabitants. Addresses both astronomy and geosciences in parallel, from a big data perspective Includes introductory information, key principles, applications and the latest techniques Well-supported by computing and information science-oriented chapters to introduce the necessary knowledge in these fields

System Analysis and Modeling: Theory and Practice - Oystein Haugen 2013-02-11

This book constitutes revised papers of the proceedings of the 7th International Workshop on System Analysis and Modeling, SAM 2012, held in Innsbruck, Austria, in October 2012. The 12 papers presented were carefully reviewed and selected from 27 submissions. In addition, the book contains two keynote speeches in full-paper length. The contributions are organized in topical sections named: test and analysis, language enhancements, fuzzy subjects, components and composition, and configuring and product lines.

Research Anthology on Architectures, Frameworks, and Integration Strategies for Distributed and Cloud Computing - Management Association, Information Resources 2021-01-25

Distributed systems intertwine with our everyday lives. The benefits and current shortcomings of the underpinning technologies are experienced by a wide range of people and their smart devices. With the rise of large-scale IoT and similar distributed systems, cloud bursting technologies, and partial outsourcing solutions, private entities are encouraged to increase their efficiency and offer unparalleled availability and reliability to their users. The Research Anthology on Architectures, Frameworks, and Integration Strategies for Distributed and Cloud Computing is a vital reference source that provides valuable insight into current and emergent research occurring within the field of distributed computing. It also presents architectures and service frameworks to achieve highly integrated distributed systems and solutions to integration and efficient management challenges faced by current and future distributed systems. Highlighting a range of topics such as data sharing, wireless sensor networks, and scalability, this multi-volume book is ideally designed for system administrators, integrators, designers, developers, researchers, academicians, and students.

Advances in Data Mining. Applications and Theoretical Aspects - Petra Pernert 2017-06-30

This book constitutes the refereed proceedings of the 17th Industrial Conference on Advances in Data Mining, ICDM 2017, held in New York, NY, USA, in July 2017. The 27 revised full papers presented were carefully reviewed and selected from 71 submissions. The topics range from

theoretical aspects of data mining to applications of data mining, such as in multimedia data, in marketing, in medicine, and in process control in industry and society.

Multimedia Big Data Computing for IoT Applications - Sudeep Tanwar 2019-07-17

This book considers all aspects of managing the complexity of Multimedia Big Data Computing (MMBD) for IoT applications and develops a comprehensive taxonomy. It also discusses a process model that addresses a number of research challenges associated with MMBD, such as scalability, accessibility, reliability, heterogeneity, and Quality of Service (QoS) requirements, presenting case studies to demonstrate its application. Further, the book examines the layered architecture of MMBD computing and compares the life cycle of both big data and MMBD. Written by leading experts, it also includes numerous solved examples, technical descriptions, scenarios, procedures, and algorithms.

High Performance Computing for Geospatial Applications - Wenwu Tang 2020-07-20

This volume fills a research gap between the rapid development of High Performance Computing (HPC) approaches and their geospatial applications. With a focus on geospatial applications, the book discusses in detail how researchers apply HPC to tackle their geospatial problems. Based on this focus, the book identifies the opportunities and challenges revolving around geospatial applications of HPC. Readers are introduced to the fundamentals of HPC, and will learn how HPC methods are applied in various specific areas of geospatial study. The book begins by discussing theoretical aspects and methodological uses of HPC

within a geospatial context, including parallel algorithms, geospatial data handling, spatial analysis and modeling, and cartography and geovisualization. Then, specific domain applications of HPC are addressed in the contexts of earth science, land use and land cover change, urban studies, transportation studies, and social science. The book will be of interest to scientists and engineers who are interested in applying cutting-edge HPC technologies in their respective fields, as well as students and faculty engaged in geography, environmental science, social science, and computer science.

Research Anthology on Big Data Analytics, Architectures, and Applications - Management Association, Information Resources 2021-09-24

Society is now completely driven by data with many industries relying on data to conduct business or basic functions within the organization. With the efficiencies that big data bring to all institutions, data is continuously being collected and analyzed. However, data sets may be too complex for traditional data-processing, and therefore, different strategies must evolve to solve the issue. The field of big data works as a valuable tool for many different industries. The Research Anthology on Big Data Analytics, Architectures, and Applications is a complete reference source on big data analytics that offers the latest, innovative architectures and frameworks and explores a variety of applications within various industries. Offering an international perspective, the applications discussed within this anthology feature global representation. Covering topics such as advertising curricula, driven supply chain, and smart cities, this research anthology is ideal for data scientists, data analysts, computer

engineers, software engineers, technologists, government officials, managers, CEOs, professors, graduate students, researchers, and academicians.

Smart Data - Kuan-Ching Li 2019-03-19

Smart Data: State-of-the-Art Perspectives in Computing and Applications explores smart data computing techniques to provide intelligent decision making and prediction services support for business, science, and engineering. It also examines the latest research trends in fields related to smart data computing and applications, including new computing theories, data mining and machine learning techniques. The book features contributions from leading experts and covers cutting-edge topics such as smart data and cloud computing, AI for networking, smart data deep learning, Big Data capture and representation, AI for Big Data applications, and more. Features Presents state-of-the-art research in big data and smart computing Provides a broad coverage of topics in data science and machine learning Combines computing methods with domain knowledge and a focus on applications in science, engineering, and business Covers data security and privacy, including AI techniques Includes contributions from leading researchers

Transactions on Large-Scale Data- and Knowledge-Centered Systems XLVII - Abdelkader Hameurlain 2021-01-16

The LNCS journal *Transactions on Large-Scale Data- and Knowledge-Centered Systems* focuses on data management, knowledge discovery, and knowledge processing, which are core and hot topics in computer science. Since the 1990s, the Internet has become the main driving force behind application development in all domains. An increase in the demand for resource sharing across different sites connected through networks has led to an

evolution of data- and knowledge-management systems from centralized systems to decentralized systems enabling large-scale distributed applications providing high scalability. This, the 47th issue of *Transactions on Large-Scale Data- and Knowledge-Centered Systems*, constitutes a special issue focusing on Digital Ecosystems and Social Networks. The 9 revised selected papers cover topics that include Social Big Data, Data Analysis, Cloud-Based Feedback, Experience Ecosystems, Pervasive Environments, and Smart Systems.

Advanced Machine Learning Technologies and Applications - Aboul-Ella Hassanien 2021-03-04

This book presents the refereed proceedings of the 6th International Conference on Advanced Machine Learning Technologies and Applications (AMLTA 2021) held in Cairo, Egypt, during March 22–24, 2021, and organized by the Scientific Research Group of Egypt (SRGE). The papers cover current research Artificial Intelligence Against COVID-19, Internet of Things Healthcare Systems, Deep Learning Technology, Sentiment analysis, Cyber-Physical System, Health Informatics, Data Mining, Power and Control Systems, Business Intelligence, Social media, Control Design, and Smart Systems.

Big Data Analytics for Healthcare - Pantea Keikhosrokiani 2022-05-19

Big Data Analytics and Medical Information Systems presents the valuable use of artificial intelligence and big data analytics in healthcare and medical sciences. It focuses on theories, methods and approaches in which data analytic techniques can be used to examine medical data to provide a meaningful pattern for classification, diagnosis, treatment, and prediction of diseases. The book discusses topics such as theories and concepts of the field, and how big medical data mining techniques

and applications can be applied to classification, diagnosis, treatment, and prediction of diseases. In addition, it covers social, behavioral, and medical fake news analytics to prevent medical misinformation and myths. It is a valuable resource for graduate students, researchers and members of biomedical field who are interested in learning more about analytic tools to support their work. Presents theories, methods and approaches in which data analytic techniques are used for medical data Brings practical information on how to use big data for classification, diagnosis, treatment, and prediction of diseases Discusses social, behavioral, and medical fake news analytics for medical information systems

Big Data Analytics with R - Simon Walkowiak 2016-07-29
Utilize R to uncover hidden patterns in your Big Data About This Book Perform computational analyses on Big Data to generate meaningful results Get a practical knowledge of R programming language while working on Big Data platforms like Hadoop, Spark, H2O and SQL/NoSQL databases, Explore fast, streaming, and scalable data analysis with the most cutting-edge technologies in the market Who This Book Is For This book is intended for Data Analysts, Scientists, Data Engineers, Statisticians, Researchers, who want to integrate R with their current or future Big Data workflows. It is assumed that readers have some experience in data analysis and understanding of data management and algorithmic processing of large quantities of data, however they may lack specific skills related to R. What You Will Learn Learn about current state of Big Data processing using R programming language and its powerful statistical capabilities Deploy Big Data analytics platforms with selected Big Data tools supported by R in

a cost-effective and time-saving manner Apply the R language to real-world Big Data problems on a multi-node Hadoop cluster, e.g. electricity consumption across various socio-demographic indicators and bike share scheme usage Explore the compatibility of R with Hadoop, Spark, SQL and NoSQL databases, and H2O platform In Detail Big Data analytics is the process of examining large and complex data sets that often exceed the computational capabilities. R is a leading programming language of data science, consisting of powerful functions to tackle all problems related to Big Data processing. The book will begin with a brief introduction to the Big Data world and its current industry standards. With introduction to the R language and presenting its development, structure, applications in real world, and its shortcomings. Book will progress towards revision of major R functions for data management and transformations. Readers will be introduced to Cloud based Big Data solutions (e.g. Amazon EC2 instances and Amazon RDS, Microsoft Azure and its HDInsight clusters) and also provide guidance on R connectivity with relational and non-relational databases such as MongoDB and HBase etc. It will further expand to include Big Data tools such as Apache Hadoop ecosystem, HDFS and MapReduce frameworks. Also other R compatible tools such as Apache Spark, its machine learning library Spark MLlib, as well as H2O. Style and approach This book will serve as a practical guide to tackling Big Data problems using R programming language and its statistical environment. Each section of the book will present you with concise and easy-to-follow steps on how to process, transform and analyse large data sets.

Pro Hadoop Data Analytics - Kerry Koitzsch 2016-12-29

Learn advanced analytical techniques and leverage existing tool kits to make your analytic applications more powerful, precise, and efficient. This book provides the right combination of architecture, design, and implementation information to create analytical systems that go beyond the basics of classification, clustering, and recommendation. Pro Hadoop Data Analytics emphasizes best practices to ensure coherent, efficient development. A complete example system will be developed using standard third-party components that consist of the tool kits, libraries, visualization and reporting code, as well as support glue to provide a working and extensible end-to-end system. The book also highlights the importance of end-to-end, flexible, configurable, high-performance data pipeline systems

with analytical components as well as appropriate visualization results. You'll discover the importance of mix-and-match or hybrid systems, using different analytical components in one application. This hybrid approach will be prominent in the examples. What You'll Learn Build big data analytic systems with the Hadoop ecosystem Use libraries, tool kits, and algorithms to make development easier and more effective Apply metrics to measure performance and efficiency of components and systems Connect to standard relational databases, noSQL data sources, and more Follow case studies with example components to create your own systems Who This Book Is For Software engineers, architects, and data scientists with an interest in the design and implementation of big data analytical systems using Hadoop, the Hadoop ecosystem, and other associated technologies.