

Big Data: Does Size Matter?

Since long before computers were even thought of, data has been collected and organized by diverse cultures across the world. Once access to the Internet became a reality for large swathes of the world's population, the amount of data generated each day became huge, and continues to grow exponentially. It includes all our uploaded documents, video, and photos, all our social media traffic, our online shopping, even the GPS data from our cars. "Big Data" represents a qualitative change, not simply a quantitative one. The term refers both to the new technologies involved, and to the way it can be used by business and government. Dawn E. Holmes uses a variety of case studies to explain how data is stored, analyzed, and exploited by a variety of users from its original use to its current use in big data control. Big data is transforming the way businesses operate, and the way medical research can be carried out. At the same time, it raises important ethical issues. Holmes discusses cases such as the Snowden affair, data security, and domestic smart devices which can be hijacked by hackers. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These perfect little books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable.

What are your organization's policies for generating and using huge datasets full of personal information? This book examines ethical questions raised by the big data phenomenon, and explains why enterprises need to reconsider business decisions concerning privacy and identity. Authors Kori Davis and Doug Patterson provide methods and techniques to help your business engage in a transparent and productive ethical inquiry into your current data practices. Both individuals and organizations have legitimate interests in understanding how data is handled. Your use of data can directly affect brand quality and revenue—as Target, Apple, Netflix, and dozens of other companies have discovered. With this book, you'll learn how to align your actions with explicit company values and preserve the trust of customers, partners, and stakeholders. Review your data-handling practices and examine whether they reflect core organizational values. Express coherent and consistent positions on your organization's use of big data. Define tactical plans to close gaps between values and practices—and discover how to maintain

alignment as conditions change over time. Maintain a balance between the benefits of innovation and the risks of unintended consequences.

Substantially transforming into a digitally powered reality due to the increased dependence of computing technologies. The landscape of cyber threats is constantly evolving because of this, as hackers are finding improved methods of accessing essential data. Analyzing the historical evolution of cyberattacks can assist practitioners in predicting what future threats could be on the horizon. Real-Time and Retrospective Analyses of Cyber Security is a pivotal reference source that provides vital research on studying the development of cybersecurity practices through historical and sociological analyses. While highlighting topics such as zero trust networks, geopolitical analysis, and cyber warfare, this publication explores the evolution of cyber threats, as well as improving security methods and their socio-technological impact. This book is ideally designed for researchers, policymakers, strategists, officials, developers, educators, sociologists, and students seeking current research on the evolution of cybersecurity methods through historical analysis and future trends.

This cutting-edge overview explores big data and the related topic of computer code, examining the implications for education and schooling for today and the near future.

Victorians and Numbers
Ethics of Big Data

50 Essential Concepts
Second Symposium, SoMMA 2020, Chennai, India, October 14–17, 2020, Revised Selected Papers
Statistics and Society in Nineteenth Century Britain
How the Information Revolution Is Transforming Our Lives
Does Size Matter?

Though the exact nature and delineation of Big Data is still unclear, it seems likely that Big Data will have an enormous impact on our daily lives. "Exploring the Boundaries of Big Data" serves as preparatory work for The Netherlands Scientific Council for Government Policy's advice to the Dutch government, which has asked the Council to address questions regarding Big Data, security and privacy. It is divided into five parts, each part engaging with a different perspective on Big Data: the technical, empirical, legal, regulatory and international perspective. This volume explores the scientific frontiers and leading edges of research across the fields of anthropology, economics, political science, psychology, sociology, history, business, education, geography, law, and psychiatry, as well as the newer, more specialized areas of artificial intelligence, child development, cognitive science, communications, demography, linguistics, and management and decision science. It includes recommendations concerning new resources, facilities, and programs that may be needed over the next several years to ensure rapid progress and provide a high level of returns to basic research.

This revelatory exploration of big data, which refers to our newfound ability to crunch vast amounts of information, analyze it instantly and draw profound and surprising conclusions from it, discusses how it will change our lives and what we can do to protect ourselves from its hazards. 75,000 first printing.

Thinking Big Data in Geography offers a practical state-of-the-field overview of big data as both a means and an object of research, with essays from prominent and emerging scholars such as Rob Kitchin, Renee Sieber, and Mark Graham. Part 1 explores how the advent of geosweb technologies and big data sets has influenced some of geography 's major subdisciplines: urban politics and political economy, human-environment interactions, and geographic information sciences. Part 2 addresses how the geographic study of big data has implications for other disciplinary fields, notably the digital humanities and the study of social justice. The volume concludes with theoretical applications of the geosweb and big data

as they pertain to society as a whole, examining the ways in which user-generated data come into the world and are complicit in its unfolding. The contributors raise caution regarding the use of spatial big data, citing issues of accuracy, surveillance, and privacy.

The Next Frontier for Innovation, Competition, and Productivity
Big Data Approach to Firm Level Innovation in Manufacturing

Real-Time and Retrospective Analyses of Cyber Security
Business Intelligence and Big Data

Big Data in Astronomy
Creating a Data-Driven Organization

Measuring, Monitoring, and Managing Your Business
A new way of thinking about data science and data ethics that is informed by the ideas of intersectional feminism. Today, data science is a form of power. It has been used to expose injustice, improve health outcomes, and topple governments. But it has also been used to discriminate, police, and surveil. This potential for good, on the one hand, and harm, on the other, makes it essential to ask: Data science by whom? Data science for whom? Data science with whose

interests in mind? The narratives around big data and data science are overwhelmingly white, male, and techno-heroic. In Data Feminism, Catherine D'Ignazio and Lauren Klein present a new way of thinking about data science and data ethics—one that is informed by intersectional feminist thought. Illustrating data feminism in action, D'Ignazio and Klein show how challenges to the male/female binary can help challenge other hierarchical (and empirically wrong) classification systems. They explain how, for example, an understanding of emotion can expand our ideas about effective data visualization, and how the concept of invisible labor can expose the significant human efforts required by our automated systems. And they show why the data never, ever "speak for themselves." Data Feminism offers strategies for data scientists seeking to learn how feminism can help them work toward justice, and for feminists who want to focus their efforts on the growing field of data science. But Data Feminism is about much more than gender. It is about power, about who has it and who doesn't, and about how those differentials of power can be challenged and changed.

Authorship Attribution surveys the history and present state of the discipline, presenting some comparative results where available. It also provides a theoretical and empirically-validated basis for further work. Many modern techniques are described and evaluated, along with some insights for application for novices and experts alike.

Originally published in hardcover in 2016 by Bloomsbury Sigma.

The world is witnessing the growth of a global movement facilitated by technology and social media. Fueled by information, this movement contains enormous potential to create more accountable, efficient, responsive, and effective governments and businesses, as well as spurring economic growth. Big Data Governance and Perspectives in Knowledge Management is a collection of innovative research on the methods and applications of applying robust processes around data, and aligning organizations and skillsets around those processes. Highlighting a range of topics including data analytics, prediction analysis, and software development, this book is ideally designed for academicians, researchers, information science professionals, software developers, computer engineers, graduate-level computer science students, policymakers, and managers seeking current research on the convergence of big data and information governance as two major trends in information management.

Big Data Analytics
Highlighting the Importance of Big Data Management and Analysis for Various Applications

Exploring the Boundaries of Big Data
The Information Revolution in Modern Conflict

Size Does Matter
Data Feminism

Big Data: A Very Short Introduction
This book addresses the impacts of various types of services such as infrastructure, platforms, software, and business processes that cloud computing and Big Data have introduced into business. Featuring chapters which discuss effective and efficient approaches in dealing with the inherent complexity and increasing demands in data science, a variety of application domains are covered. Various case studies by data management and analysis experts are presented in these chapters. Covered applications include banking, social networks, bioinformatics, healthcare, transportation and criminology. Highlighting the Importance of Big Data Management and Analysis for Various Applications will provide the reader with an understanding of how data management and analysis are adapted to these applications. This book will appeal to researchers and professionals in the field.

This volume constitutes the proceedings of the 6th CCF Conference, Big Data 2018, held in Xi'an, China, in October 2018. The 32 revised full papers presented in this volume were carefully reviewed and selected from 880 submissions. The papers are organized in topical sections on natural language processing and text mining; big data analytics and smart computing; big data applications; the application of big data in machine learning; social networks and recommendation systems; parallel computing and storage of big data; data quality control and data governance; big data system and management.

"What do you need to become a data-driven organization? Far more than having big data or a crack team of unicorn data scientists, it requires establishing an effective, deeply-ingrained data culture. This practical book shows you how true data-drivenness involves processes that require genuine buy-in across your company ... Through interviews and examples from data scientists and analytics leaders in a variety of industries ... Anderson explains the analytics value chain you need to adopt when building predictive business models"—Publisher's description.

A defining feature of Victorian Britain was its fascination with statistics, and this study shows how data influenced every aspect of Victorian culture and thought, from the methods of natural science and the struggle against disease, to the development of social administration, and the arguments and conflicts between social classes.

Big Data Analytics, big Data Driven Business
Calculative Devices in the Age of Big Data

Practical Data Science for Information Professionals
Scientific Data Processing for Advanced Radio Telescopes

IoT-based Algorithms and Implementation
Practical Advice from the Trenches

Small Wars, Big Data
This book presents a step by step Asset Health Management Optimization Approach Using Internet of Things (IoT). The authors provide a comprehensive study which includes the descriptive, diagnostic, predictive, and prescriptive analysis in detail. The presentation focuses on the challenges of the parameter selection, statistical data analysis, predictive algorithms, big data storage and selection, data pattern recognition, machine learning techniques, asset failure distribution estimation, reliability and availability enhancement, condition based maintenance policy, failure detection, data driven optimization algorithm, and a multi-objective optimization approach, all of which can significantly enhance the reliability and availability of the system.

From predictive policing to self-surveillance to private security, the potential uses of big data in crime control pose serious legal and ethical challenges relating to privacy, discrimination, and the presumption of innocence. The book is about the impacts of the use of big data analytics on social and crime control and on fundamental liberties. Drawing on research from Europe and the US, this book identifies the various ways in which law and ethics intersect with the application of big data in social and crime control, considers potential challenges to human rights and democracy and recommends regulatory solutions and best practice. This book focuses on changes in knowledge production and the manifold sites of contemporary surveillance, ranging from self-surveillance to corporate and state surveillance. It tackles the implications of big data and predictive algorithmic analytics for social justice, social equality, and social power: concepts at the very core of crime and social control. This book will be of interest to scholars and students of criminology, sociology, politics and socio-legal studies.

A concise introduction to the emerging field of data science, explaining its evolution, relation to machine learning, current uses, data infrastructure issues, and ethical challenges. The goal of data science is to improve decision making through the analysis of data. Today data science determines the ads we see online, the books and movies that are recommended to us online, which emails are filtered into our spam folders, and even how much we pay for health insurance. This volume in the MIT Press Essential Knowledge series offers a concise introduction to the emerging field of data science, explaining its evolution, current uses, data infrastructure issues, and ethical challenges. It has never been easier for organizations to gather, store, and process data. Use of data science is driven by the rise of big data and social media, the development of high-performance computing, and the emergence of such powerful methods for data analysis and modeling as deep learning. Data science encompasses a set of principles, problem definitions, algorithms, and processes for extracting non-obvious and useful patterns from large datasets. It is closely related to the fields of data mining and machine learning, but broader in scope. This book offers a brief history of the field, introduces fundamental data concepts, and describes the stages in a data science project. It considers data infrastructure and the challenges posed by integrating data from multiple sources, introduces the basics of machine learning, and discusses how to link machine learning expertise with real-world problems. The book also reviews ethical and legal issues, developments in data regulation, and computational approaches to preserving privacy. Finally, it considers the future impact of data science and offers principles for success in data science projects.

A handy reference guide for data analysts and data scientists to help to obtain value from big data analytics using Spark on Hadoop clusters. About This Book This book is based on the latest 2.0 version of Apache Spark and 2.7 version of Hadoop integrated with most commonly used tools. Learn all Spark stack components including latest topics such as DataFrames, DataSets, GraphFrames, Structured Streaming, DataFrame based ML Pipelines and SparkR. Integrations with frameworks such as HDFS, YARN and tools such as Jupyter, Zeppelin, NIFI, Mahout, HBase Spark Connector, GraphFrames, H2O and Hivemall. Who This Book Is For Though this book is primarily aimed at data analysts and data scientists, it will also help architects, programmers, and practitioners. Knowledge of either Spark or Hadoop would be beneficial. It is assumed that you have basic programming background in Scala, Python, SQL, or R programming with basic Linux experience. Working experience within big data environments is not mandatory. What You Will Learn Find out and implement the tools and techniques of big data analytics using Spark on Hadoop clusters with wide variety of tools used with Spark and Hadoop Understand all the Hadoop and Spark ecosystem components Get to know all the Spark components: Spark Core, Spark SQL, DataFrames, DataSets, Conventional and Structured Streaming, MLLib, ML Pipelines and GraphX See batch and real-time data analytics using Spark Core, Spark SQL and Conventional and Structured Streaming Get to grips with data science and machine learning using MLLib, ML Pipelines, H2O, Hivemall, GraphX, SparkR and Hivemall. In Detail Big Data Analytics book aims at providing the fundamentals of Apache Spark and Hadoop. All Spark components – Spark Core, Spark SQL, DataFrames, Data Sets, Conventional Streaming, Structured Streaming, MLLib, GraphX and Hadoop core components – HDFS, MapReduce and Yarn are explored in greater depth with implementation examples on Spark + Hadoop clusters. It is moving away from MapReduce to Spark. So, advantages of Spark over MapReduce are explained at great depth to reap benefits of in-memory speeds, DataFrames API, Data Sources API and New Data set API are explained for building Big Data analytical applications. Real-time data analytics using Spark Streaming with Apache Kafka and HBase is covered to help building streaming applications. New Structured streaming concept is explained with an IOT (Internet of Things) use case. Machine learning techniques are covered using MLLib, ML Pipelines and SparkR and Graph Analytics are covered with GraphX and GraphFrames components of Spark. Readers will also get an opportunity to get started with web based notebook such as Jupyter, Apache Zeppelin and data flow tool Apache NIFI to analyze and visualize data. Style and approach This step-by-step pragmatic guide will make life easy no matter what your level of experience. You will deep dive into Apache Spark on Hadoop clusters through ample exciting real-life examples. Practical tutorial explains data science in simple terms to help programmers and data analysts get started with Data Science

The Digital Future of Learning, Policy and Practice
Big Data Governance and Perspectives in Knowledge Management

Computational and Statistical Methods for Analysing Big Data with Applications
Data Intensive Industrial Asset Management

Thinking Big Data in Geography
Big Data, Analytics, and the Future of Marketing & Sales

Big Data Does Size Matter? Bloomsbury Publishing
Is the Brexit vote successful big data politics or the end of democracy? Why do airlines overbook, and why do banks get it wrong so often? How does big data enable Netflix to forecast a hit, CERN to find the Higgs boson and medics to discover if red wine really is good for you? And how are companies using big data to benefit from smart meters, use advertising that spies on you and develop the gig economy, where workers are managed by the whim of an algorithm? The volumes of data we now access can give unparalleled abilities to make predictions, respond to customer demand and solve problems. But Big

brother's shadow hovers over it. Though big data can set us free and enhance our lives, it has the potential to create an underclass and a totalitarian state. With big data ever-present, you can't afford to ignore it. Acclaimed science writer Brian Clegg - a habitual early adopter of new technology (and the owner of the second-ever copy of Windows in the UK) - brings big data to life.

Unhindered by how to use dashboard technology to optimize business performance Business performance management is a hot new management disciplinethat delivers tremendous value when supported by informatontechnology. Through case studies and industry research, this bookshows how leading companies are using performance dashboards toexecute strategy, optimize business processes, and improveperformance. Wayne W. Eckerson (Hingham, MA) is the Director of Research for TheData Warehousing Institute (TDWI), the leading association ofbusiness intelligence and data warehousing professionals worldwide that provide high-quality, in-depth education, training, andresearch. He is a columnist for SearchCIO.com, DM Review,Application Development Trends, the Business Intelligence Journal, and TDWI Case Studies & Solution.

Due to the scale and complexity of data sets currently being collected in areas such as health, transportation, environmental science, engineering, information technology, business and finance, modern quantitative analysts are seeking improved and appropriate computational and statistical methods to explore, model and draw inferences from big data. This book aims to introduce suitable approaches for such endeavours, providing applications and case studies for the purpose of demonstration. Computational and Statistical Methods for Analysing Big Data with Applications starts with an overview of the era of big data. It then goes onto explain the computational and statistical methods which have been commonly applied in the big data revolution. For each of these methods, an example is provided as a guide to its application. Five case studies are presented next, focusing on computer vision with massive training data, spatial data analysis, advanced experimental design methods for big data, big data in clinical medicine, and analysing data collected from mobile devices, respectively. The book concludes with some final thoughts and suggested areas for future research in big data. Advanced computational and statistical methodologies for analysing big data are developed Experimental design methodologies are described and implemented to make the analysis of big data more computationally tractable Case studies are discussed to demonstrate the implementation of the developed methods Five high-impact areas of application are studied: computer vision, geosciences, commerce, healthcare and transportation Computing code/programs are provided where appropriate

Big Data Mining for Climate Change
Reinventing the Social Scientist and Humanist in the Era of Big Data

Machine Learning and Metaheuristics Algorithms, and Applications
Does Size Matter?

Performance Dashboards
Data Science

Big Data in Education
This book discusses utilizing Big Data and Machine Learning approaches in investigating five aspects of firm level innovation in manufacturing: (1) factors that determine the decision to innovate (2) the extent of innovation (3) characteristics of an innovating firm (4) types of innovation undertaken and (5) the factors that drive and enable different types of innovation. A conceptual model and a cost-benefit framework were developed to explain a firm's decision to innovate. To empirically demonstrate these aspects, Big data and machine learning approaches were introduced in the form of a case study. The result of Big data analysis as an inferior method to analyse innovation data was also compared with the results of conventional statistical methods. The implications of the findings of the study for increasing the pace of innovation are also discussed.

The twenty-first century is a time of intensifying competition and progressive digitization. Individual employees, managers, and entire organizations are under increasing pressure to succeed. The questions facing us today are: What does success mean? Is success a matter of chance and luck or perhaps is success a category that can be planned and properly supported? Business Intelligence and Big Data: Drivers of Organizational Success examines how the success of an organization largely depends on the ability to anticipate and quickly respond to challenges from the market, customers, and other stakeholders. Success is also associated with the potential to process and analyze a variety of information and the means to use modern information and communication technologies (ICTs). Success also requires creative behaviors and organizational cleverness from an organization. The book discusses business intelligence (BI) and Big Data (BD) issues in the context of modern management paradigms and organizational success. It presents a theoretically and empirically grounded investigation into BI and BD application in organizations and examines such issues as: Analysis and interpretation of the essence of BI and BD Decision support Potential areas of BI and BD utilization in organizations Factors determining success with using BI and BD The role of BI and BD in value creation for organizations Identifying barriers and constraints related to BI and BD design and implementation The book presents arguments and evidence confirming that BI and BD may be a trigger for making more effective decisions, improving business processes and business performance, and creating new business. The book proposes a comprehensive framework on how to design and use BI and BD to provide organizational success.

Big Data in Radio Astronomy: Scientific Data Processing for Advanced Radio Telescopes provides the latest research developments in big data methods and techniques for radio astronomy. Providing examples from such projects as the Square Kilometer Array (SKA), the world's largest radio telescope that generates over an Exabyte of data every day, the book offers solutions for coping with the challenges and opportunities presented by the exponential growth of astronomical data. Presenting state-of-the-art results and research, this book is a timely reference for both practitioners and researchers working in radio astronomy, as well as students looking for a basic understanding of big data in astronomy. Bridges the gap between radio astronomy and computer science Includes coverage of the observation lifecycle as well as data collection, processing and analysis Presents state-of-the-art research and techniques in big data related to radio astronomy Utilizes real-world examples, such as Square Kilometer Array (SKA) and Five-hundred-meter Aperture Spherical radio Telescope (FAST)

Over the last decade, Agile methods have changed the software development process in an unparalleled way. As opposed to traditional, plan-driven models of software development (e.g. waterfall model), where processes are organized in a series of sequentially ordered stages, Agile software development (ASD) entails collaborative development with swift and incremental iterations. As a result, adaptability to fre- quently changing requirements and a strong emphasis on delivering value to customers represent the crux of ASD and have driven its wide acceptance among software practitioners in the last years. Furthermore, this paradigm shift from plan-driven software development processes to ASD accorded with social and technological advances. Keywords: Big Data analytics in Agile software development big data facebook big data baseball big data analysis for green computing concepts and applications big data big climb big data systems big data healthcare big data aws big data science big data mba big data a big data dragon tank big data a revolution that will transform big data a revolution that will transform how we live work and think big data algorithms big data analysis big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data genomics big data glossary big data health analytics big data in education big data in finance big data in healthcare big data in practice big data integration big data interview big data lake big data management big data manning big data marketing big data marz big data mba big data mba diving business strategies with data science big data modeling big data on campus big data para ceos y directores de marketing big data platform big data policing big data design big data does size matter big data driven business big data engineer big data engineering big data espafiol big data finance big data for beginners big data frameworks big data fundamentals big data fundamentals concepts, drivers & techniques big data gen

In this textbook, basic mathematical models used in Big Data Analytics are presented and application-oriented references to relevant practical issues are made. Necessary mathematical tools are examined and applied to current problems of data analysis, such as brand loyalty, portfolio selection, credit investigation, quality control, product clustering, asset pricing etc. - mainly in an economic context. In addition, we discuss interdisciplinary applications to biology, linguistics, sociology, electrical engineering, computer science and artificial intelligence. For the models, we make use of a wide range of mathematics - from basic disciplines of numerical linear algebra, statistics and optimization to more specialized game, graph and even complexity theories. By doing so, we cover all relevant techniques commonly used in Big Data Analytics. Each chapter starts with a concrete practical problem whose primary aim is to motivate the study of a particular Big Data Analytics technique. Next, mathematical results follow - including important definitions, auxiliary statements and conclusions arising. Case-studies help to deepen the acquired knowledge by applying it in an interdisciplinary context. Exercises serve to improve understanding of the underlying theory. Complete solutions for exercises can be consulted by the interested reader at the end of the textbook; for some which have to be solved numerically, we provide descriptions of algorithms in Python code as supplementary material. This textbook has been recommended and developed for university courses in Germany, Austria and Switzerland.