

Big Data In Practice Use Cases How 45 Successful Companies Used Big Data Analytics To Deliver Extraordinary Results

See a Mesos-based big data stack created and the components used. You will use currently available Apache full and incubating systems. The components are introduced by example and you learn how they work together. In the Complete Guide to Open Source Big Data Stack, the author begins by creating a private cloud and then installs and examines Apache Brooklyn. After that, he uses each chapter to introduce one piece of the big data stack—sharing how to source the software and how to install it. You learn by simple example, step by step and chapter by chapter, as a real big data stack is created. The book concentrates on Apache-based systems and shares detailed examples of cloud storage, release management, resource management, processing, queuing, frameworks, data visualization, and more. What You'll Learn Install a private cloud onto the local cloud stack Source, install, and configure Apache: Brooklyn, Mesos, Kafka, and Zepplin See how Brooklyn can be used to install Mule ESB on a cluster and Cassandra in the cloud Install and use DCOS for big data processing Use Apache Spark for big data stack data processing Who This Book Is For Developers, architects, IT project managers, database administrators, and others charged with developing or supporting a big data system. It is also for anyone interested in Hadoop or big data, and those experiencing problems with data size.

Master the skills and tools needed to leverage data, create a data-driven strategy and gain the competitive advantage. 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 Kord 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 Big Data Analytics and Intelligence is essential reading for researchers and experts working in the fields of health care, data science, analytics, the internet of things, and information retrieval.

Data Science and Big Data Analytics
Big Data in the Arts and Humanities
Principles and Best Practices of Scalable Realtime Data Systems
A Practical Guide to Methods and Tools
How to Use Big Data to Win Customers, Beat Competitors, and Boost Profits
Summary Hadoop in Practice, Second Edition provides over 100 tested, instantly useful techniques that will help you conquer big data, using Hadoop. This revised new edition covers changes and new features in the Hadoop core architecture, including MapReduce 2. Brand new chapters cover YARN and integrating Kafka, Impala, and Spark SQL with Hadoop. You'll also get new and updated techniques for Flume, Sqoop, and Mahout, all of which have seen major new versions recently. In short, this is the most practical, up-to-date coverage of Hadoop available anywhere. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Book It's always a good time to upgrade your Hadoop skills! Hadoop in Practice, Second Edition provides a collection of 104 tested, instantly useful techniques for analyzing real-time streams, moving data securely, machine learning, managing large-scale clusters, and taming big data using Hadoop. This completely revised edition covers changes and new features in Hadoop core, including MapReduce 2 and YARN. You'll pick up hands-on best practices for integrating Spark, Kafka, and Impala with Hadoop, and get new and updated techniques for the latest versions of Flume, Sqoop, and Mahout. In short, this is the most practical, up-to-date coverage of Hadoop available. Readers need to know a programming language like Java and have basic familiarity with Hadoop. What's Inside Thoroughly updated for Hadoop 2 How to write YARN applications Integrate real-time technologies like Storm, Impala, and Spark Predictive analytics using Mahout and RR Readers need to know a programming language like Java and have basic familiarity with Hadoop. About the Author Alex Holmes works on tough big-data problems. He is a software engineer, author, speaker, and blogger specializing in large-scale Hadoop projects. Table of Contents PART 1 BACKGROUND AND FUNDAMENTALS Hadoop in a heartbeat Introduction to YARN PART 2 DATA LOGISTICS Data serialization—working with text and beyond Organizing and optimizing data in HDFS Moving data into and out of Hadoop PART 3 BIG DATA PATTERNS Applying MapReduce patterns to big data Utilizing data structures and algorithms at scale Tuning, debugging, and testing PART 4 BEYOND MAPREDUCE SQL on Hadoop Writing a YARN application

Both Traditional Students and Working Professionals Acquire the Skills to Analyze Social Problems. Big Data and Social Science: A Practical Guide to Methods and Tools shows how to apply data science to real-world problems in both research and the practice. The book provides practical guidance on combining methods and tools from computer science, statistics, and social science. This concrete approach to using an important national problem, the quantitative study of innovation. The text draws on the expertise of prominent leaders in statistics, the social sciences, data science, and computer science to teach students how to use modern social science research principles as well as the best analytical and computational tools. It uses a real-world challenge to introduce how these tools are used to identify and capture appropriate data, apply data science models and tools to that data, and recognize and respond to data errors and limitations. For more information, including sample chapters and news, please visit the author's website.

DATA SCIENCE IN THEORY AND PRACTICE EXPLORE THE FOUNDATIONS OF DATA SCIENCE WITH THIS INSIGHTFUL, NEW RESOURCE Data Science in Theory and Practice delivers a comprehensive treatment of the mathematical and statistical models useful for analyzing data sets arising in various disciplines, like banking, finance, health care, bioinformatics, security, education, and social services. Written in five parts, the book examines some of the most commonly used and fundamental mathematical and statistical concepts that form the basis of data science. The authors go on to analyze various data transformation techniques useful for extracting information from raw data, long memory behavior, and predictive modeling. The book offers readers a multitude of topics all relevant to the analysis of complex data sets. Along with a robust exploration of the theory underpinning data science, it contains numerous applications to specific and practical problems. The book also provides examples of code algorithms in R and Python and provides pseudo-algorithms to port the code to any other language. Ideal for students and practitioners without a strong background in data science, readers will also learn from topics like: Analyses of foundational theoretical subjects, including the history of data science, matrix algebra and random vectors, and multivariate analysis A comprehensive examination of time series forecasting, including the different components of time series and transformations to achieve stationarity Introductions to both the R and Python programming languages, including basic data types and sample manipulations for both languages An exploration of algorithms, including how to write one and how to perform an asymptotic analysis A comprehensive discussion of several techniques for analyzing and predicting complex data sets Perfect for advanced undergraduate and graduate students in Data Science, Business Analytics, and Statistics programs, Data Science in Theory and Practice will also earn a place in the libraries of practicing data scientists, data and business analysts, and statisticians in the private sector, government, and academia.

Leverage big data to add value to your business Social media analytics, web-tracking, and other technologies help companies acquire and handle massive amounts of data to better understand their customers, products, competition, and markets. Armed with the insights from big data, companies can improve customer experience and products, add value, and increase return on investment. The key is to have IT professionals and executives know how to get this done, and that's where this practical book comes in. Big Data: Understanding How Data Powers Big Business is a complete how-to guide to leveraging big data to drive business value. Full of practical techniques, real-world examples, and hands-on exercises, this book explores the technologies involved, as well as how to find areas of the organization that can take full advantage of big data. Shows how to decompose current business strategies in order to link big data initiatives to the organization's value creation process Explores different value creation processes and models Explains issues surrounding operationalizing big data, including organizational structures, education challenges, and new big data-related roles Provides methodology worksheets and exercises so readers can apply techniques Includes real-world examples from a variety of organizations leveraging big data Big Data: Understanding How Data Powers Big Business is written by one of Big Data's preeminent experts, William Schmarzo. Don't miss his invaluable insights and advice.

Big Data For Dummies
R for Data Science
A Roadmap for Usage and Exploitation of Big Data in Europe
Principles and Paradigms
The Big Data-Driven Business
Complete Guide to Open Source Big Data Stack

Promise, Application and Pitfalls
Learn how to use R to turn raw data into insight, knowledge, and understanding. This book introduces you to R, RStudio, and the tidyverse, a collection of R packages designed to work together to make data science fast, fluent, and fun. Suitable for readers with no previous programming experience, R for Data Science is designed to get you doing data science as quickly as possible. Authors Hadley Wickham and Garrett Grolemund guide you through the steps of importing, wrangling, exploring, and modeling your data and communicating the results. You'll get a complete, big-picture understanding of the data science cycle, along with basic tools you need to manage the details. Each section of the book is paired with exercises to help you practice what you've learned along the way. You'll learn how to: Wrangle—transform your datasets into a form convenient for analysis program—learn powerful R tools for solving data problems with greater clarity and ease Explore—examine your data, generate hypotheses, and quickly test them Model—provide a low-dimensional summary that captures true "signals" in your dataset Communicate—learn R Markdown for integrating prose, code, and results

Big Data: Principles and Paradigms captures the state-of-the-art research on the architectural aspects, technologies, and applications of Big Data. The book identifies potential future directions and technologies that facilitate insight into numerous scientific, business, and consumer applications. To help realize Big Data's full potential, the book addresses numerous challenges, offering the conceptual and technological solutions for tackling them. These challenges include life-cycle data management, large-scale storage, flexible processing infrastructure, data modeling, scalable machine learning, data analysis algorithms, sampling techniques, and privacy and ethical issues. Covers computational platforms supporting Big Data applications Addresses key principles underlying Big Data computing Examines key developments supporting next generation Big Data platforms Explores the challenges in Big Data computing and ways to overcome them Contains expert contributors from both academia and industry

This open access book presents the foundations of the Big Data research and innovation ecosystem and the associated enablers that facilitate delivering value from data for business and society. It provides insights into the key elements for research and innovation, technical architectures, business models, skills, and best practices to support the creation of data-driven solutions and organizations. The book is a compilation of selected high-quality chapters covering best practices, technologies, experiences, and practical recommendations on research and innovation for big data. The contributions are grouped into four parts: · Part I: Ecosystem Elements of Big Data Value focuses on establishing the big data value ecosystem using a holistic approach to make it attractive and valuable to all stakeholders. · Part II: Research and Innovation Elements of Big Data Value details the key technical and capability challenges to be addressed for delivering big data value. · Part III: Business, Policy, and Societal Elements of Big Data Value investigates the need to make more efficient use of big data and understanding that data is an asset that has significant potential for the economy and society. · Part IV: Emerging Elements of Big Data Value explores the critical elements to maximizing the future potential of big data value. Overall, readers are provided with insights which can support them in creating data-driven solutions, organizations, and productive data ecosystems. The material represents the results of a collective effort undertaken by the European data community as part of the Big Data Value Public-Private Partnership (PPP) between the European Commission and the Big Data Value Association (BDVA) to boost data-driven digital transformation.

New Technologies for Human Rights Law and Practice
How to Profit from a World of Big Data, Analytics and Artificial Intelligence
Key Business Analytics
How 45 Successful Companies Used Big Data Analytics to Deliver Extraordinary Results
Big Data Analytics and Intelligence
Promise, Application and Pitfalls

Convert the promise of big data into real world results There is so much buzz around big data. We all need to know what it is and how it works - that much is obvious. But is a basic understanding of the theory enough to hold your own in strategy meetings? Probably. But what will set you apart from the rest is actually knowing how to USE big data to get solid, real-world business results - and putting that in place to improve performance. Big Data will give you a clear understanding, blueprint, and step-by-step approach to building your own big data strategy. This is a well-needed practical introduction to actually putting the topic into practice. Illustrated with numerous real-world examples from a cross section of companies and organisations. Big Data will take you through the five steps of the SMART model: Start with Strategy, Measure Metrics and Data, Apply Analytics, Report Results, Transform. Discusses how companies need to clearly define what it is they need to know Outlines how companies can collect relevant data and measure the metrics that will help them answer their most important business questions Addresses how the results of big data analytics can be visualised and communicated to ensure key decisions-makers understand them Includes many high-profile case studies from the author's work with some of the world's best known brands
As digital technologies occupy a more central role in working and everyday human life, individual and social realities are increasingly constructed and communicated through digital objects, which are progressively replacing and representing physical objects. They are even shaping new forms of virtual reality. This growing digital transformation coupled with technological evolution and the development of computer computation is creating a cyber society whose working mechanisms are grounded upon the production, deployment, and exploitation of big data. In the arts and humanities, however, the notion of big data is still in its embryonic stage, and only in the last few years, have arts and cultural organizations and institutions, artists, and humanists started to investigate, explore, and experiment with the deployment and exploitation of big data as well as understand the possible forms of collaborations based on it. Big Data in the Arts and Humanities: Theory and Practice explores the meaning, properties, and applications of big data. This book examines the relevance of big data to the arts and humanities, digital humanities, and management of big data with and for the arts and humanities. It explores the reasons and opportunities for the arts and humanities to embrace the big data revolution. The book also delineates managerial implications to successfully shape a mutually beneficial partnership between the arts and humanities and the big data- and computational digital-based sciences. Big data and arts and humanities can be likened to the rational and emotional aspects of the human mind. This book attempts to integrate these two aspects of human thought to advance decision-making and enhance the expression of the best of human life.

Big Data and Social Science: Data Science Methods and Tools for Research and Practice, Second Edition shows how to apply data science to real-world problems, covering all stages of a data-intensive social science or policy project. Prominent leaders in the social sciences, statistics, and computer science as well as the field of data science provide a unique perspective on how to apply modern social science research principles and current analytical and computational tools. The text teaches you how to identify and collect appropriate data, apply data science methods and tools to the data, and recognize and respond to data errors, biases, and limitations. Features: Takes an accessible, hands-on approach to handling new types of data in the social sciences Presents the key data science tools in a non-intimidating way to both social and data scientists while keeping the focus on research questions and purposes Illustrates social science and data science principles through real-world problems Links computer science concepts to practical social science research Promotes good scientific practice Provides freely available workbooks with data, code, and practical programming exercises, through Binder and GitHub New to the Second Edition: Increased use of examples from different areas of social sciences New chapter on dealing with Bias and Fairness in Machine Learning models Expanded chapters focusing on Machine Learning and Text Analysis Revamped hands-on Jupyter notebooks to reinforce concepts covered in each chapter This classroom-tested book fills a major gap in graduate- and professional-level data science and social science education. It can be used to train a new generation of social data scientists to tackle real-world problems and improve the skills and competencies of applied social scientists and public policy practitioners. It empowers you to use the massive and rapidly growing amounts of available data to interpret economic and social activities in a scientific and rigorous manner. As more corporations turn to Hadoop to store and process their most valuable data, the risk of a potential breach of those systems increases exponentially. This practical book not only shows Hadoop administrators and security architects how to protect Hadoop data from unauthorized access, it also shows how to limit the ability of an attacker to corrupt or modify data in the event of a security breach. Authors Ben Spivey and Joey Echeverria provide in-depth information about the security features available in Hadoop, and organize them according to common computer security concepts. You'll also get real-world examples that demonstrate how you can apply these concepts to your use cases. Understand the challenges of securing distributed systems, particularly Hadoop Use best practices for preparing Hadoop cluster hardware as securely as possible Get an overview of the Kerberos network authentication protocol Delve into authorization and accounting principles as they apply to Hadoop Learn how to use mechanisms to protect data in a Hadoop cluster, both in transit and at rest Integrate Hadoop data ingest into enterprise-wide security architecture Ensure that security architecture reaches all the way to end-user access

Theory and Practice
How 50 Successful Companies Used AI and Machine Learning to Solve Problems
Artificial Intelligence in Practice
Big Data-Enabled Nursing
Analytics in a Big Data World
Big Data For Small Business For Dummies

BRONZE RUNNER UP: Axiom Awards 2018 - Business Technology Category Less than 0.5 per cent of all data is currently analyzed and used. However, business leaders and managers cannot afford to be unconcerned or sceptical about data. Data is revolutionizing the way we work and it is the companies that view data as a strategic asset that will survive and thrive. Data Strategy is a must-have guide to creating a robust data strategy. Explaining how to identify your strategic data needs, what methods to use to collect the data and, most importantly, how to translate your data into organizational insights For improved business decision-making and performance, this is essential reading for anyone aiming to leverage the value of their business data and gain competitive advantage. Packed with case studies and real-world examples, advice on how to build data competencies in an organization and a critical coverage of how to ensure your data doesn't become a liability. Data Strategy will equip any organization with the tools and strategies it needs to profit from Big Data, analytics and the Internet of Things (IoT). Key Business Analytics will help you turn data into insights that help them better understand their customers, optimize their internal processes and identify cost savings and growth opportunities. It includes analysis techniques within the following categories: Financial analytics - cashflow, profitability, sales forecasts Market analytics - market size, market trends, marketing channels Customer analytics - customer lifetime values, social media, customer needs Employee analytics - capacity, performance, leadership Operational analytics - supply chains, competencies, environmental impact Bare business analytics - sentiments, text, correlations Each tool will follow the bestselling key format of being 5-6 pages long, broken into short sharp advice on the essentials: What is it? When should I use it? How do I use it? Tips and pitfalls Further reading This essential toolkit also provides an invaluable section on how to gather original data yourself through surveys, interviews, focus groups, etc.

This book covers three major parts of Big Data: concepts, theories and applications. Written by world-renowned leaders in Big Data, this book explores the problems, possible solutions and directions for Big Data in research and practice. It also focuses on high level concepts such as definitions of Big Data from different angles; surveys in research and applications; and existing tools, mechanisms, and systems in practice. Each chapter is independent from the other chapters, allowing users to read any chapter directly. After examining the practical side of Big Data, this book presents theoretical perspectives. The theoretical research ranges from Big Data representation, modeling and topology to distribution and dimension reducing. Chapters also investigate the many disciplines that involve Big Data, such as statistics, data mining, machine learning, networking, algorithms, security and differential geometry. The last section of this book introduces Big Data applications from different communities, such as business, engineering and science. Big Data Concepts, Theories and Applications is designed as a reference for researchers and advanced level students in computer science, electrical engineering and mathematics. Practitioners who focus on information systems, big data, data mining, business analysis and other related fields will also find this material valuable.

Big Data and Small Business Written by bestselling author and big data expert Bernard Marr, Big Data For Small Business For Dummies helps you understand what big data actually is-and how you can analyse and use it to improve your business. Free of confusing jargon and complemented with lots of step-by-step guidance and helpful advice, it quickly and painlessly helps you get the most from using big data in a small business. Business data has been around for a long time. Unfortunately, it was trapped away in overcrowded filing cabinets and on archaic floppy disks. Now, thanks to technology and new tools that display complex databases in a much simpler manner, small businesses can benefit from the big data that's been hiding right under their noses. With the help of this friendly guide, you'll discover how to get your hands on big data to develop new offerings, products and services; understand technological change; create an infrastructure; develop strategies; and make smarter business decisions. Shows you how to use big data to make sense of user activity on social networks and customer transactions Demonstrates how to capture, store, search, share, analyse and visualise analytics Helps you turn your data into actionable insights Explains how to use big data to your advantage in order to transform your small business if you're a small business owner or employee, Big Data For Small Business For Dummies helps you harness the hottest commodity on the market today in order to take your company to new heights.

Protecting Your Big Data Platform
Big Data in Practice
Big Data
Big Data Concepts, Theories, and Applications
Preparing, Sharing, and Analyzing Complex Information
Hadoop in Practice

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. Get the expert perspective and practical advice on big data The Big Data-Driven Business: How to Use Big Data to Win Customers, Beat Competitors, and Boost Profits makes the case that big data is for real, and more than just big hype. The book uses real-life examples—from Nate Silver to Copernicus, and Apple to Blackberry—to demonstrate how the winners of the future will use big data to seek the truth. Written by a marketing journalist and the CEO of a multi-million-dollar B2B marketing platform that reaches more than 90% of the U.S. business population, this book is a comprehensive and accessible guide on how to win customers, beat competitors, and boost the bottom line with big data. The marketplace has entered an era where the customer holds all the cards. With unprecedented choice in both the consumer world and the B2B world, it's imperative that businesses gain a greater understanding of their customers and prospects. Big data is the key to this insight, because it provides a comprehensive view of a company's customers—who they are, and who they may be tomorrow. The Big Data-Driven Business is a complete guide to the future of business as seen through the lens of big data, with expert advice on real-world applications. Learn what big data is, and how it will transform the enterprise Explore why major corporations are betting their companies on marketing technology Read case studies of big data winners and losers Discover how to change privacy and security, and remodel marketing Better information allows for better decisions, better targeting, and better reach. Big data has become an indispensable tool for the most effective marketers in the business, and it's becoming less of a competitive advantage and more like an industry standard. Remaining relevant as the marketplace evolves requires a full understanding and application of big data, and The Big Data-Driven Business provides the practical guidance businesses need.

Principles of Big Data helps readers avoid the common mistakes that endanger all Big Data projects. By stressing simple, fundamental concepts, this book teaches readers how to organize large volumes of complex data, and how to achieve data permanence when the content of the data is constantly changing. General methods for data verification and validation, as specifically applied to Big Data, are stressed throughout the book. The book demonstrates how adept analysts can find relationships among data objects held in disparate Big Data resources, when the data objects are endowed with semantic support (i.e., organized in classes of uniquely identified data objects). Readers will learn how their data can be integrated with data from other resources, and how the data extracted from Big Data resources can be used for purposes beyond those imagined by the data creators. Learn general methods for specifying Big Data in a way that is understandable to humans and to computers Avoid the pitfalls in Big Data design and analysis Understand how to create and use Big Data safely and responsibly with a set of laws, regulations and ethical standards that apply to the acquisition, distribution and integration of Big Data resources Provides a roadmap for understanding the relationship between technology and human rights law and practice. This title is also available as Open Access.

Discovering, Analyzing, Visualizing and Presenting Data
Understanding How Data Powers Big Business
Developing a Successful Big Data Strategy for Your Business
Think Bigger
Ethics of Big Data
Data Strategy

Find the right data solution for your business or organization Big data management is one of the major challenges facing business, industry, and not-for-profit organizations. Data sets such as customer transactions for a mega-retailer, weather patterns monitored by meteorologists, or social network activity can quickly outpace the capacity of traditional data management tools. If you need to develop or manage big data solutions, you'll appreciate how these four experts define, explain, and guide you through this new and often confusing concept. You'll learn what it is, why it matters, and how to choose and implement solutions that work. Effectively managing big data is an issue of growing importance to businesses, not-for-profit organizations, government, and IT professionals. Authors are experts in information management, big data, and a variety of solutions. Explains big data in detail and discusses how to select and implement a solution. security concerns to consider, data storage and presentation issues, analytics, and much more Provides essential information in a no-nonsense, easy-to-understand style that is empowering Big Data For Dummies cuts through the confusion and helps you take charge of big data solutions for your organization. Cyber-solutions to real-world business problems Artificial Intelligence in Practice is a fascinating look into how companies use AI and machine learning to solve problems. Presenting 50 case studies of actual situations, this book demonstrates practical applications to issues faced by businesses around the globe. The rapidly evolving field of artificial intelligence has expanded beyond research labs and computer science departments and made its way into the mainstream business environment. Artificial intelligence and machine learning are cited as the most important modern business trends to drive success. It is used in areas ranging from banking and finance to social media and marketing. This technology continues to provide innovative solutions to businesses of all sizes, sectors and industries. This engaging and topical book explores a wide range of cases illustrating how businesses use AI to boost performance, drive efficiency, analyse market preferences and many others. Best-selling author and renowned AI expert Bernard Marr reveals how machine learning technology is transforming the way companies conduct business. This detailed examination provides an overview of each company, describes the specific problem and explains how AI facilitates resolution. Each case study provides a comprehensive overview, including some technical details as well as key learning summaries: Understand how specific business problems are addressed by innovative machine learning methods Explore how current artificial intelligence applications improve performance and increase efficiency in various situations Expand your knowledge of recent AI advancements in technology Gain insight on the future of AI and its increasing role in business and industry Artificial Intelligence in Practice: How 50 Successful Companies Used Artificial Intelligence to Solve Problems is an insightful and informative exploration of the transformative power of technology in 21st century commerce.

Big Data in Practice: How 45 Successful Companies Used Big Data Analytics to Deliver Extraordinary Results John Wiley & Sons
Applications of Big Data in Healthcare: Theory and Practice begins with the basics of Big Data analysis and introduces the tools, processes and procedures associated with Big Data analytics. The book unites healthcare with Big Data analysis and uses the advantages of the latter to solve the problems faced by the former. The authors present the challenges faced by the healthcare industry, including capturing, storing, searching, sharing and analyzing data. This book illustrates the challenges in the applications of Big Data and suggests ways to overcome them, with a primary emphasis on data repositories, challenges, and concepts for data scientists, engineers and clinicians. The applications of Big Data have grown tremendously within the past few years and its growth can not only be attributed to its competence to handle large data streams but also to its abilities to find insights from complex, noisy, heterogeneous, longitudinal and voluminous data. The main objectives of Big Data in the healthcare sector is to come up with ways to provide personalized healthcare to patients by taking into account the enormous amounts of already existing data. Provides case studies that illustrate the business processes underlying the use of big data and deep learning health analytics to improve health care delivery Supplies readers with a foundation for further specialized study in clinical analysis and data management Includes links to websites, videos, articles and other online content to expand and support the primary learning objectives for each major section of the book

Applications of Big Data in Healthcare
Balancing Risk and Innovation
Foundations of the Research and Innovation Ecosystem
Techniques and Technologies in Geoinformatics
Data Science in Theory and Practice
How to Profit from a World of Big Data, Analytics and the Internet of Things

Summary Big Data teaches you to build big data systems using an architecture that takes advantage of clustered hardware along with new tools designed specifically to capture and analyze web-scale data. It describes a scalable, easy-to-understand approach to big data systems that can be built and run by a small team. Following a realistic example, this book guides readers through the theory of big data systems, how to implement them in practice, and how to deploy and operate them once they're built. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Book Web-scale applications like social networks, real-time analytics, or e-commerce sites deal with a lot of data, whose volume and velocity are growing at an incredible rate. These applications require architectures built around clusters of machines to store and process data of any size, or speed. Fortunately, scale and simplicity are not mutually exclusive. Big Data teaches you to build big data systems using an architecture designed specifically to capture and analyze web-scale data. This book presents the Lambda Architecture—a scalable, easy-to-understand approach that can be built and run by a small team. You'll explore the theory of big data systems and how to implement them in practice. In addition to discovering a general framework for processing big data, you'll learn specific technologies like Hadoop, Storm, and NoSQL databases. This book requires no previous exposure to large-scale data analysis or NoSQL tools. Familiarity with traditional databases is helpful. What's Inside Introduction to big data systems Real-time processing of web-scale data tools like Hadoop, Cassandra, and Storm Extensions to traditional database skills About the Authors Nathan Marz is the creator of Apache Storm and the originator of the Lambda Architecture for big data systems. James Warren is an analytics architect with a background in machine learning and scientific computing. Table of Contents A new paradigm for Big Data PART 1 BATCH LAYER Data Models for Big Data PART 2 STREAM LAYER Data Models for Big Data PART 3 SPEED LAYER Realtime views Realtime views: Illustration Queuing and stream processing Queuing and stream processing: Illustration Micro-batch stream processing Micro-batch stream processing: Illustration Lambda Architecture in depth The best-selling author of Big Data is back, this time with a unique and in-depth insight into how specific companies use big data. Big data is on the tip of everyone's tongue. Everyone understands its power and importance, but many fail to grasp the actionable steps and resources required to utilise it effectively. This book fills the knowledge gap by showing how major companies are using big data every day, from an up-close, on-the-ground perspective. From technology, media and retail, to sport teams, government agencies and financial institutions, learn the actual strategies and processes being used to learn about customers, improve manufacturing, spur innovation, improve safety and so much more. Organised for easy dip-in navigation, each chapter follows the same structure to give you the information you need quickly. For each company profiled, learn what data was used, what problem it solved and the processes put in place to make it practical, as well as the technical details, challenges and lessons learned from each unique scenario. Learn how predictive analytics helps Amazon, Target, John Deere and Apple understand their customers Discover how big data is behind the success of Walmart, LinkedIn, Microsoft and more Learn how big data is changing medicine, law enforcement, hospitality, fashion, science and banking Develop your own big data strategy by accessing additional reading materials at the end of each chapter

In this book readers will find technological discussions on the existing and emerging technologies across the different stages of the big data value chain, the social impact, and about education needs and requirements. And they will discover the business perspective and how big data technology can be exploited to deliver value within different sectors of the economy. The book is structured in four parts: Part I "The Big Data Opportunity" explores the value potential of big data with a particular focus on the European context. It also describes the legal, business and social dimensions that need to be addressed, and briefly introduces the European Commission's BIG project. Part II "The Big Data Value Chain" details the complete big data lifecycle from a technical point of view, ranging from data acquisition, analysis, curation and storage, to data usage and exploitation. Next, Part III "Usage and Exploitation of Big Data" illustrates the value creation possibilities of big data applications in various sectors, including industry, healthcare, finance, energy, media and public services. Finally, Part IV "A Roadmap for Big Data Research" identifies and prioritizes the cross-sectorial requirements for big data research, and outlines the most urgent and challenging technological, economic, political and social issues for big data in Europe. This compendium summarizes more than two years of work performed by a leading group of major European research centers and industries in the context of the BIG project. It brings together research findings, forecasts and estimates related to this challenging technological context that is becoming the major axis of the new digitally transformed business environment. 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.

Data Science Methods and Tools for Research and Practice
Data Science in Theory and Practice
The 60+ Business Analysis Tools Every Manager Needs To Know
A Perspective for Health Care
The Elements of Big Data Value
A Revolution that Will Transform How We Live, Work, and Think

Historically, nursing, in all of its missions of research/scholarship, education and practice, has not had access to large patient databases. Nursing consequently adopted qualitative methodologies with small sample sizes, clinical trials and lab research. Historically, large data methods were limited to traditional biostatistical analyses. In the United States, large payer data has been amassed and structures/organizations have been created to welcome scientists to explore these large data to advance knowledge discovery. Health systems electronic health records (EHRs) have now matured to generate massive databases with longitudinal trending. This text reflects how the learning health system infrastructure is maturing, and being advanced by health information exchanges (HIEs) with multiple organizations blending their data, or enabling distributed computing. It educates the readers on the evolution of knowledge discovery methods that span qualitative as well as quantitative data mining, including the expanse of data visualization capacities, are enabling sophisticated discovery. New opportunities for nursing and call for new skills in research methodologies are being further enabled by new partnerships spanning all sectors.

Big data has always been a major challenge in geoinformatics as geospatial data come in various types and formats, new geospatial data are acquired very fast, and geospatial databases are inherently very large. And while there have been advances in hardware and software for handling big data, they often fall short of handling geospatial big data efficiently and effectively. Big Data: Techniques and Technologies in Geoinformatics tackles these challenges head on, integrating coverage of techniques and technologies for storing, managing, and computing geospatial big data. Providing a perspective based on analysis of time, applications, and resources, this book familiarizes readers with geospatial applications that fall under the category of big data. It explores new trends in geospatial data collection, such as geo-crowdsourcing and advanced data collection technologies such as LIDAR point cloud. The book features a range of topics on big data techniques and technologies in geoinformatics including distributed computing, geospatial data analytics, social media, and volunteered geographic information. With chapters contributed by experts in geoinformatics and in domains such as computing and engineering, the book provides an understanding of the challenges and issues of big data in geoinformatics applications. The book is a single collection of current and emerging techniques, technologies, and tools that are needed to collect, analyze, manage, process, and visualize geospatial big data.

The best-selling author of Big Data is back, this time with a unique and in-depth insight into how specific companies use big data. Big data is on the tip of everyone's tongue. Everyone understands its power and importance, but many fail to grasp the actionable steps and resources required to utilise it effectively. This book fills the knowledge gap by showing how major companies are using big data every day, from an up-close, on-the-ground perspective. From technology, media and retail, to sport teams, government agencies and financial institutions, learn the actual strategies and processes being used to learn about customers, improve manufacturing, spur innovation, improve safety and so much more. Organised for easy dip-in navigation, each chapter follows the same structure to give you the information you need quickly. For each company profiled, learn what data was used, what problem it solved and the processes put in place to make it practical, as well as the technical details, challenges and lessons learned from each unique scenario. Learn how predictive analytics helps Amazon, Target, John Deere and Apple understand their customers Discover how big data is behind the success of Walmart, LinkedIn, Microsoft and more Learn how big data is changing medicine, law enforcement, hospitality, fashion, science and banking Develop your own big data strategy by accessing additional reading materials at the end of each chapter. Data Science and Big Data Analytics is about harnessing the power of data for new insights. The book covers the breadth of activities and methods and tools that Data Scientists use. The content focuses on concepts, principles and practical applications that are applicable to any industry and technology environment, and the learning is supported and explained with examples that you can replicate using open-source software. This book will help you: Become a contributor on a data science team Deploy a structured lifecycle approach to data analytics problems Apply appropriate analytic techniques and tools to analyzing big data Learn how to tell a compelling story with data to drive business action Prepare for EMC Proven Professional Data Science Certification Corresponding data sets are available from the book's page at Wiley which you can find on the Wiley site by searching for the ISBN 9781118876138. Get started discovering, analyzing, visualizing, and presenting data in a meaningful way today!

Using SMART Big Data, Analytics and Metrics To Make Better Decisions and Improve Performance

Techniques for Big Data Analytics and Complex Data Sets

The Essential Guide to Data Science and Its Applications

The Digital Future of Learning, Policy and Practice

Big Data and Social Science

The guide to targeting and leveraging business opportunities using big data & analytics By leveraging big data & analytics, businesses create the potential to better understand, manage, and strategically exploiting the complex dynamics of customer behavior. Analytics in a Big Data World reveals how to tap into the powerful tool of data analytics to create a strategic advantage and identify new business opportunities. Designed to be an accessible resource, this essential book does not include exhaustive coverage of all analytical techniques, instead focusing on analytics techniques that really provide added value in business environments. The book draws on author Bart Baesens' expertise on the topics of big data, analytics and its applications in e.g. credit risk, marketing, and fraud to provide a clear roadmap for organizations that want to use data analytics to their advantage, but need a good starting point. Baesens has conducted extensive research on big data, analytics, customer relationship management, web analytics, fraud detection, and credit risk management, and uses this experience to bring clarity to a complex topic. Includes numerous case studies on risk management, fraud detection, customer relationship management, and web analytics

Offers the results of research and the author's personal experience in banking, retail, and government Contains an overview of the visionary ideas and current developments on the strategic use of analytics for business Covers the topic of data analytics in easy-to-understand terms without an undue emphasis on mathematics and the minutiae of statistical analysis For organizations looking to enhance their capabilities via data analytics, this resource is the go-to reference for leveraging data to enhance business capabilities. Every day, an increasing amount of our movements, transactions, and choices are becoming digitized and stored up into what has become known as "big data"--revolutionizing the way we do business today. And it's all there for your company to strategically utilize for giant profits! But where to begin? Think Bigger provides a roadmap for organizations looking to develop a profitable big data strategy. Sharing best practices from companies that have implemented a big data strategy including Walmart, InterContinental Hotel Group, Walt Disney, and Shell, this must-have resource for any business not wanting to fall far behind the competition covers the most important big data trends affecting organizations, as well as crucial types of analyses. Big data is changing the way businesses--and even governments--are operated and managed. And now, you too can revolutionize your business by learning how to properly employ the vast amount of digitalized information that is already available to you.

Import, Tidy, Transform, Visualize, and Model Data

Big Data in Education

New Horizons for a Data-Driven Economy