Big Data A Revolution That Will Transform How We Live Work And Think

The amount of data in our world has been exploding, and analyzing large data sets—so called big data—will become a key basis of competition in business. Statisticians and researchers will be updating their analytic approaches, methods and research to meet the demands created by the availability of big data. The goal of this book is to show how advances in data science have the ability to fundamentally influence and improve organizational science and practice. This book is primarily designed for researchers and advanced undergraduate and graduate students in psychology, management and statistics.

Explore big data concepts, platforms, analytics, and their applications using the power of Hadoop 3 Key Features Learn Hadoop 3 to build effective big data analytics solutions on-premise and on cloud Integrate Hadoop with other big data tools such as R, Python, Apache Spark, and Apache Flink Exploit big data using Hadoop 3 with real-world examples Book Description Apache Hadoop is the most popular platform for big data processing, and can be combined with a host of other big data tools to build powerful analytics solutions. Big Data Analytics with Hadoop 3 shows you how to do just that, by providing insights into the software as well as its benefits with the help of practical examples. Once you have taken a tour of Hadoop 3's latest features, you will get an overview of HDFS, MapReduce, and YARN, and how they enable faster, more efficient big data processing. You will then move on to learning how to integrate Hadoop with the open source tools, such as Python and R, to analyze and visualize data and perform statistical computing on big data. As you get acquainted with all this, you will explore how to use Hadoop 3 with Apache Spark and Apache Flink for real-time data analytics and stream processing. In addition to this, you will understand how to use Hadoop to build analytics solutions on the cloud and an end-to-end pipeline to perform big data analysis using practical use cases. By the end of this book, you will be well-versed with the analytical capabilities of the Hadoop ecosystem. You will be able to build powerful solutions to perform big data analytics and get insight effortlessly. What you will learn Explore the new features of Hadoop 3 along with HDFS, YARN, and MapReduce Get well-versed with the analytical capabilities of Hadoop ecosystem using practical examples Integrate Hadoop with R and Python for more efficient big data processing Learn to use Hadoop with Apache Spark and Apache Flink for real-time data analytics Set up a Hadoop cluster on AWS cloud Perform big data analytics on AWS using Elastic Map Reduce Who this book is for Big Data Analytics with Hadoop 3 is for you if you are looking to build high-performance analytics solutions for your enterprise or business using Hadoop 3's powerful features, or you're new to big data analytics. A basic understanding of the Java programming language is required.

Our newly digital world is generating an almost unimaginable amount of data about all of us. Such a vast amount of data is useless without plans and strategies that are designed to cope with its size and complexity, and which enable organisations to leverage the information to create value. This book is a refreshingly practical, yet theoretically sound roadmap to leveraging big data and analytics. Creating Value with Big Data Analytics provides a nuanced view of big data development, arguing that big data in itself is not a revolution but an evolution of the increasing availability of data that has been observed in recent times. Building on the authors' extensive academic and practical knowledge, this book aims to provide managers and analysts with strategic directions and practical analytical solutions on how to create value from existing and new big data. By tying data and analytics to specific goals and processes for implementation, this is a much-needed book that will be essential reading for students and specialists of data analytics, marketing research, and customer relationship management.

Big DataA Revolution that Will Transform how We Live, Work, and ThinkHoughton Mifflin Harcourt

Exploit the power and potential of Big Data to revolutionizebusiness outcomes Big Data Revolution is a guide to improving performance,making better decisions, and transforming business through theeffective use of Big Data. In this collaborative work by an IBMVice President of Big Data Products and an Oxford Research Fellow,this book presents inside stories that demonstrate the power andpotential of Big Data within the business realm. Readers are guidedthrough tried-and-true methodologies for getting more out of data,and using it to the utmost advantage. This book describes the majortrends emerging in the field, the pitfalls and triumphs beingexperienced, and the many considerations surrounding Big Data, allwhile guiding readers toward better decision making from theperspective of a data scientist. Companies are generating data faster than ever before, andmanaging that data has become a major challenge. With the rightstrategy, Big Data can be a powerful tool for creating effectivebusiness solutions – but deep understanding is key whenapplying it to individual business needs. Big DataRevolution provides the insight executives need to incorporateBig Data into a better business strategy, improving outcomes withinnovation and efficient use of technology. Examine the major emerging patterns in Big Data Consider the debate surrounding the ethical use of data Recognize patterns and improve personal and organizationalperformance Make more informed decisions with quantifiable results In an information society, it is becoming increasingly importantto make sense of data in an economically viable way. It can drivenew revenue streams and give companies a competitive advantage,providing a way forward for businesses navigating an increasinglycomplex marketplace. Big Data Revolution provides expertinsight on the tool that can revolutionize industries.

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 tricky part for busy IT professionals and executives is 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 processes 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.

In today's fast growing digital world, the web, mobile, social networks and other digital platforms are producing enormous amounts of data that hold intelligence and valuable information. Correctly used it has the power to create sustainable value in different forms for businesses. The commonly used term for this data is Big Data, which includes structured, unstructured and hybrid structured data. However, Big Data is of limited value unless insightful information can be extracted from the sources of data. The

solution is Big Data analytics, and how managers and executives can capture value from this vast resource of information and insights. This book develops a simple framework and a non-technical approach to help the reader understand, digest and analyze data, and produce meaningful analytics to make informed decisions. It will support value creation within businesses, from customer care to product innovation, from sales and marketing to operational performance. The authors provide multiple case studies on global industries and business units, chapter summaries and discussion questions for the reader to consider and explore. Big Data for Managers also presents small cases and challenges for the reader to work on – making this a thorough and practical guide for students and managers.

Unique prospective on the big data analytics phenomenon for both business and IT professionals The availability of Big Data, low-cost commodity hardware and new information management and analytics software has produced a unique moment in the history of business. The convergence of these trends means that we have the capabilities required to analyze astonishing data sets quickly and cost-effectively for the first time in history. These capabilities are neither theoretical nor trivial. They represent a genuine leap forward and a clear opportunity to realize enormous gains in terms of efficiency, productivity, revenue and profitability. The Age of Big Data is here, and these are truly revolutionary times. This timely book looks at cutting-edge companies supporting an exciting new generation of business analytics. Learn more about the trends in big data and how they are impacting the business world (Risk, Marketing, Healthcare, Financial Services, etc.) Explains this new technology and how companies can use them effectively to gather the data that they need and glean critical insights Explores relevant topics such as data privacy, data visualization, unstructured data, crowd sourcing data scientists, cloud computing for big data, and much more.

This book presents and discusses the main strategic and organizational challenges posed by Big Data and analytics in a manner relevant to both practitioners and scholars. The first part of the book analyzes strategic issues relating to the growing relevance of Big Data and analytics for competitive advantage, which is also attributable to empowerment of activities such as consumer profiling, market segmentation, and development of new products or services. Detailed consideration is also given to the strategic impact of Big Data and analytics on innovation in domains such as government and education and to Big Data-driven business models. The second part of the book addresses the impact of Big Data and analytics on management and organizations, focusing on challenges for governance, evaluation, and change management, while the concluding part reviews real examples of Big Data and analytics innovation at the global level. The text is supported by informative illustrations and case studies, so that practitioners can use the book as a toolbox to improve understanding and exploit business opportunities related to Big Data and analytics.

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.

The main purpose of this book is to investigate, explore and describe approaches and methods to facilitate data understanding through analytics solutions based on its principles, concepts and applications. But analyzing data is also about involving the use of software. For this, and in order to cover some aspect of data analytics, this book uses software (Excel, SPSS, Python, etc) which can help readers to better understand the analytics process in simple terms and supporting useful methods in its application.

The hazards of perfect memory in the digital age Delete looks at the surprising phenomenon of perfect remembering in the digital age, and reveals why we must reintroduce our capacity to forget. Digital technology empowers us as never before, yet it has unforeseen consequences as well. Potentially humiliating content on Facebook is enshrined in cyberspace for future employers to see. Google remembers everything we've searched for and when. The digital realm remembers what is sometimes better forgotten, and this has profound implications for us all. In Delete, Viktor Mayer-Schönberger traces the important role that forgetting has played throughout human history, from the ability to make sound decisions unencumbered by the past to the possibility of second chances. The written word made it possible for humans to remember across generations and time, yet now digital technology and global networks are overriding our natural ability to forget—the past is ever present, ready to be called up at the click of a mouse. Mayer-Schönberger examines the technology that's facilitating the end of forgetting—digitization, cheap storage and easy retrieval, global access, and increasingly powerful software—and describes the dangers of everlasting digital memory, whether it's outdated information taken out of context or compromising photos the Web won't let us forget. He explains why information privacy rights and other fixes can't help us, and proposes an ingeniously simple solution—expiration dates on information—that may. Delete is an eye-opening book that will help us remember how to forget in the digital age.

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.

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 shaping 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 therelevance 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 to enhance the expression of the best of human life.

A revelatory exploration of the hottest trend in technology and the dramatic impact it will have on the economy, science, and society at large. Which paint color is most likely to tell you that a used car is in good shape? How can officials identify the most dangerous New York City manholes before they explode? And how did Google searches predict the spread of the H1N1 flu outbreak? The key to answering these questions, and many more, is big data. "Big data" refers to our burgeoning ability to crunch vast collections of information, analyze it instantly, and draw sometimes profoundly surprising conclusions from it. This emerging science can translate myriad phenomena—from the price of airline tickets to the text of millions of books—into searchable form, and uses our increasing computing power to unearth epiphanies that we never could have seen before. A revolution on par with the Internet or perhaps even the printing press, big data will change the way we think about business, health, politics, education, and innovation in the years to come. It also poses fresh threats, from the inevitable end of privacy as we know it to the prospect of being penalized for things we haven't even done yet, based on big data's ability to predict our future behavior. In this brilliantly clear, often surprising work, two leading experts explain what big data is, how it will change our lives, and what we can do to protect ourselves from its hazards. Big Data is the first big book about the next big thing. www.big-data-book.com

The data lake is a daring new approach for harnessing the power of big data technology and providing convenient self-service capabilities. But is it right for your company? This book is based on discussions with practitioners and executives from more than a hundred organizations, ranging from data-driven companies such as Google, LinkedIn, and Facebook, to governments and traditional corporate enterprises. You'll learn what a data lake is, why enterprises need one, and how to build one successfully with the best practices in this book. Alex Gorelik, CTO and founder of Waterline Data, explains why old systems and processes can no longer support data needs in the enterprise. Then, in a collection of essays about data lake implementation, you'll examine data lake initiatives, analytic projects, experiences, and best practices from data experts working in various industries. Get a succinct introduction to data warehousing, big data, and data science Learn various paths enterprises take to build a data lake Explore how to build a self-service model and best practices for providing analysts access to the data Use different methods for architecting your data lake Discover ways to implement a data lake from experts in different industries

We create more data in a day then we did from the dawn of man through 2003 and approximately 90% of all the world's data has been created in the past 2 years. What does this mean to you? In The Big Data Revolution we explore this very question and reveal the data secrets your competitors don't want you to know. Our world is transforming as the data deluge knocks us out of our old ways and into the data driven reality. Some companies are winning by taking advantages of the opportunities in this evolving world while others are falling behind. Pioneers like Amazon, Target, and Google are blazing a trail that we can follow, and in The Big Data Revolution we help you do just that. Big Data promises to give us a world driven by information and solid data, bringing far greater productivity, increased profits, and lower costs; and in The Big Data Revolution we explore those winning strategies and techniques and the tools behind them. Want to learn how companies like Amazon, Target, and IBM use data to gain competitive advantages? Or how Obama used Big Data tools to better utilize his resources? The Big Data Revolution was written for the non-or-only-slightly-technical business person in mind--but in a way that gives you enough meat behind the ideas so that you have a road map that tells you how to get where you want to go. It uses real-world examples and case studies to illustrates the concepts and explore the technology that makes them happen. The Big Data Revolution is comprised of four parts: Part 1: Data Science In Part 1 we first introduce you to the world of data science and analytics. These are the tools companies and governments use to refine their crude data into valuable insights. In this section, we'll look at the magic behind Amazon's success, and see how data is leading towards a near Minority Report future. Part 2: Big Data Data is growing at an exceptional rate, we produce more data now in a day than we did from the dawn of man till 2003. This explosion of data creates many unique struggles as well as opportunities. In this section we'll look at how Obama invested in Big Data during his presidential campaign, and explore how startups are revealing data that saves their clients substantial capital. Part 3: Tools of the trade Data Scientists cannot just look at big data and get value from it, it doesn't matter how good they are. The data is just too big. So companies like IBM and Microsoft build tools that help people make sense of data, and hopefully discover new useful insights from it. The two primary categories of tools you need to be aware of are Business Intelligence and Data Discovery. In this section we explore these broad terms, and show how companies are designing more specialized tools for specific purposes. Part 4: Gazing into the Future In order to position yourself well for what is to come you need to know where we are now and almost more importantly where we are going to be in the near future. In this section we explore the trends that are going to matter as we move forward in this emerging technology industry. Computerized Data Analytics is truly still in its early stages of development, and things are going to change as new innovations come to the forefront. If we are serious about gaining the data advantage, we need to stay ahead of this curve. The Big Data Revolution is your tool to understanding this complex new reality of your world. Get it today and don't miss out on the data driven future. The world is changing. Are you ready?

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

Written in clear, accessible prose, the Fourth edition ofComputer Ethics brings together philosophy, law, and technology. The text provides an in-depth exploration and analysis of a broad range of topics regarding the ethical implications of widespread use of computer technology. The approach is normative while also exposing the student to alternative ethical stances.

By one estimate, 90 percent of all of the data in history was created in the last two years. In 2014, International Data Corporation calculated the data universe at 4.4 zettabytes, or 4.4 trillion gigabytes. That much information, in volume, could fill enough slender iPad Air tablets to create a stack two-thirds of the way to the moon. Now, that's Big Data. Coal, iron ore, and oil were the key productive assets that fueled the Industrial Revolution. The vital raw material of today's information economy is data. In Data-ism, New York Times reporter Steve Lohr explains how big-data technology is ushering in a revolution in proportions that promise to be the basis of the next wave of efficiency and innovation across the economy. But more is at work here than technology. Big data is also the vehicle for a point of view, or philosophy, about how decisions will be—and perhaps should be—made in the future. Lohr investigates the benefits of data while also examining its dark side. Data-ism is about this next phase, in which vast Internet-scale data sets are used for discovery and prediction in virtually every field. It shows how this new revolution will change decision making—by relying more on data and analysis, and less on intuition and experience—and transform the nature of leadership and management. Focusing on young entrepreneurs at the forefront of data science as well as on giant companies such as IBM that are making big bets on data science for the future of their businesses, Data-ism is a field guide to what is ahead, explaining how individuals and institutions will need to exploit, protect, and manage data to stay competitive in the coming years. With rich examples of how the rise of big data is affecting everyday life, Data-ism also raises provocative questions about policy and practice that have wide implications for everyone. The age of data-ism is here. But are we ready to handle its consequences, good and bad?

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 bodies from big companies to organizations concerned with disease 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 pocket-sized 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.

This book brings together an impressive range of academic and intelligence professional perspectives to interrogate the social, ethical and security upheavals in a world increasingly driven by data. Written in a clear and accessible style, it offers fresh insights to the deep reaching implications of Big Data for communication, privacy and organisational decision-making. It seeks to demystify developments around Big Data before evaluating their current and likely future implications for areas as diverse as corporate innovation, law enforcement, data science, journalism, and food security. The contributors call for a rethinking of the legal, ethical and philosophical frameworks that inform the responsibilities and behaviours of state, corporate, institutional and individual actors in a more networked, data-centric society. In doing so, the book addresses the real world risks, opportunities and potentialities of Big Data.

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

Lead your organization into the industrial revolution of analytics with The Analytics Revolution The topics of big data and analytics continue to be among the most discussed and pursued in the business world today. While a decade ago many people still questioned whether or not data and analytics would help improve their businesses, today virtually no one questions the value that analytics brings to the table. The Analytics Revolution focuses on how this evolution has come to pass and explores the next wave of evolution that is underway. Making analytics operational involves automating and embedding analytics directly into business processes and allowing the analytics to prescribe and make decisions. It is already occurring all around us whether we know it or not. The Analytics Revolution delves into the requirements for laying a solid technical and organizational foundation that is capable of supporting operational analytics at scale, and covers factors to consider if an organization is to succeed in making analytics

operational. Along the way, you'll learn how changes in technology and the business environment have led to the necessity of both incorporating big data into analytic processes and making them operational. The book cuts straight through the considerable marketplace hype and focuses on what is really important. The book includes: An overview of what operational analytics are and what trends lead us to them Tips on structuring technology infrastructure and analytics organizations to succeed A discussion of how to change corporate culture to enable both faster discovery of important new analytics and quicker implementation cycles of what is discovered Guidance on how to justify, implement, and govern operational analytics The Analytics Revolution gives you everything you need to implement operational analytic processes with big data.

Perspectives on the varied challenges posed by big data for health, science, law, commerce, and politics. Big data is ubiquitous but heterogeneous. Big data can be used to tally clicks and traffic on web pages, find patterns in stock trades, track consumer preferences, identify linguistic correlations in large corpuses of texts. This book examines big data not as an undifferentiated whole but contextually, investigating the varied challenges posed by big data for health, science, law, commerce, and politics. Taken together, the chapters reveal a complex set of problems, practices, and policies. The advent of big data methodologies has challenged the theory-driven approach to scientific knowledge in favor of a data-driven one. Social media platforms and self-tracking tools change the way we see ourselves and others. The collection of data by corporations and government threatens privacy while promoting transparency. Meanwhile, politicians, policy makers, and ethicists are ill-prepared to deal with big data's ramifications. The contributors look at big data's effect on individuals as it exerts social control through monitoring, mining, and manipulation; big data and society, examining both its empowering and its constraining effects; big data and science, considering issues of data governance, provenance, reuse, and trust; and big data and organizations, discussing data responsibility, "data harm," and decision making. Contributors Ryan Abbott, Cristina Alaimo, Kent R. Anderson, Mark Andrejevic, Diane E. Bailey, Mike Bailey, Mark Burdon, Fred H. Cate, Jorge L. Contreras, Simon DeDeo, Hamid R. Ekbia, Allison Goodwell, Jannis Kallinikos, Inna Kouper, M. Lynne Markus, Michael Mattioli, Paul Ohm, Scott Peppet, Beth Plale, Jason Portenoy, Julie Rennecker, Katie Shilton, Dan Sholler, Cassidy R. Sugimoto, Isuru Suriarachchi, Jevin D. West

Data availability is surpassing existing paradigms for governing, managing, analyzing, and interpreting health data. Big Data and Health Analytics provides frameworks, use cases, and examples that illustrate the role of big data and analytics in modern health care, including how public health information can inform health delivery.Written for healt

Explores the idea of big data, which refers to our new found ability to crunch vast amounts of information, analyze it instantly, and draw profound and surprising conclusions from it.

To continue providing people with safe, comfortable, and affordable places to live, cities must incorporate techniques and technologies to bring them into the future. The integration of big data and interconnected technology, along with the increasing population, will lead to the necessary creation of smart cities. Big Data Analytics for Smart and Connected Cities is a pivotal reference source that provides vital research on the application of the integration of interconnected technologies and big data analytics into the creation of smart cities. While highlighting topics such as energy conservation, public transit planning, and performance measurement, this publication explores technology integration in urban environments as well as the methods of planning cities to implement these new technologies. This book is ideally designed for engineers, professionals, researchers, and technology developers seeking current research on technology implementation in urban settings.

Big Data is now highly regarded and accepted as a useful tool to help organizations manage their data and information effectively and efficiently. This new volume, The Emerging Technology of Big Data: Its Impact as a Tool for ICT Development, looks at the new technology that has emerged to meet the growing need and demand and studies the impact of Big Data in several areas of today's society, including social media, business process re-engineering, science, e-learning, higher education, business intelligence, and green computing. In today's modern society, information system (IS) through Big Data contributes to the success of organizations because it provides a solid foundation for increasing both efficiency and productivity. Many business organizations and educational institutions realize that compliance with Big Data will affect their prospects for success. Everyday, the amount of data collected from digital tools grows tremendously. As the amount of data increases, the use of IS becomes more and more essential. The book looks at how large datasets and analytics have slowly crept into the world of education and discusses methods of teaching and learning and the collection of student-learning data. The final chapter of the book considers the environmental impacts of ICT and emphasizes green ICT awareness as a corporate strategy through information systems. The global ICT industry accounts for approximately 2 percent of global carbon dioxide (CO_2) emissions, and the manufacture, shipping, and disposal of ICT equipment also contributes environmentally. This chapter addresses these issues. The information provided here will be valuable information for education professionals, businesses, faculty, scientists and researchers, and others.

Explore why — now more than ever — the world is in a race to become data-driven, and how you can learn from examples of data-driven leadership in an Age of Disruption, Big Data, and AI In Fail Fast, Learn Faster: Lessons in Data-Driven Leadership in an Age of Disruption, Big Data, and AI, Fortune 1000 strategic advisor, noted author, and distinguished thought leader Randy Bean tells the story of the rise of Big Data and its business impact – its disruptive power, the cultural challenges to becoming data-driven, the importance of data ethics, and the future of data-driven AI. The book looks at the impact of Big Data during a period of explosive information growth, technology advancement, emergence of the Internet and social media, and challenges to accepted notions of data, science, and facts, and asks what it means to become "data-driven." Fail Fast, Learn Faster includes discussions of: The emergence of Big Data and why organizations must become data-driven to survive Why becoming data-driven forces companies to "think different" about their business The state of data in the corporate world today, and the principal challenges Why companies must develop

a true "data culture" if they expect to change Examples of companies that are demonstrating data-driven leadership and what we can learn from them Why companies must learn to "fail fast and learn faster" to compete in the years ahead How the Chief Data Officer has been established as a new corporate profession Written for CEOs and Corporate Board Directors, data professional and practitioners at all organizational levels, university executive programs and students entering the data profession, and general readers seeking to understand the Information Age and why data, science, and facts matter in the world in which we live, Fail Fast, Learn Faster p;is essential reading that delivers an urgent message for the business leaders of today and of the future.

The digital age has transformed business opportunities and strategies in a resolutely practical and data-driven project universe. This book is a comprehensive and analytical source on entrepreneurship and Big Data that prospective entrepreneurs must know before embarking upon an entrepreneurial journey in this present age of digital transformation. This book provides an overview of the various aspects of entrepreneurship, function, and contemporary forms. It covers a real-world understanding of how the entrepreneurial world works and the required new analytics thinking and computational skills. It also encompasses the essential elements needed when starting an entrepreneurial journey and offers inspirational case studies from key industry leaders. Ideal reading for aspiring entrepreneurs, Entrepreneurship and Big Data: The Digital Revolution is also useful to students, academicians, researchers, and practitioners.

New and expanded edition. An International Bestseller - Over One Million Copies Sold! Shortlisted for the Financial Times/Goldman Sachs Business Book of the Year Award. Since Aristotle, we have fought to understand the causes behind everything. But this ideology is fading. In the age of big data, we can crunch an incomprehensible amount of information, providing us with invaluable insights about the what rather than the why. We're just starting to reap the benefits: tracking vital signs to foresee deadly infections, predicting building fires, anticipating the best moment to buy a plane ticket, seeing inflation in real time and monitoring social media in order to identify trends. But there is a dark side to big data. Will it be machines, rather than people, that make the decisions? How do you regulate an algorithm? What will happen to privacy? Will individuals be punished for acts they have yet to commit? In this groundbreaking and fascinating book, two of the world's most-respected data experts reveal the reality of a big data world and outline clear and actionable steps that will equip the reader with the tools needed for this next phase of human evolution.

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 biostatical 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.

The rapidly progressing digital revolution is now touching the foundations of the governance of societal structures. Humans are on the verge of evolving from consumers to prosumers, and old, entrenched theories – in particular sociological and economic ones – are falling prey to these rapid developments. The original assumptions on which they are based are being questioned. Each year we produce as much data as in the entire human history - can we possibly create a global crystal ball to predict our future and to optimally govern our world? Do we need wide-scale surveillance to understand and manage the increasingly complex systems we are constructing, or would bottom-up approaches such as self-regulating systems be a better solution to creating a more innovative, more successful, more resilient, and ultimately happier society? Working at the interface of complexity theory, quantitative sociology and Big Data-driven risk and knowledge management, the author advocates the establishment of new participatory systems in our digital society to enhance coordination, reduce conflict and, above all, reduce the "tragedies of the commons," resulting from the methods now used in political, economic and management decision-making. The author Physicist Dirk Helbing is Professor of Computational Social Science at the Department of Humanities, Social and Political Sciences and an affiliate of the Computer Science Department at ETH Zurich, as well as co-founder of ETH's Risk Center. He is internationally known for the scientific coordination of the FuturICT Initiative which focuses on using smart data to understand techno-socio-economic systems. "Prof. Helbing has produced an insightful and important set of essays on the ways in which big data and complexity science are changing our understanding of ourselves and our society, and potentially allowing us to manage our societies much better than we are currently able to do. Of special note are the essays that touch on the promises of big data along with the dangers...this is material that we should all become familiar with!" Alex Pentland, MIT, author of Social Physics: How Good Ideas Spread - The Lessons From a New Science "Dirk Helbing has established his reputation as one of the leading scientific thinkers on the dramatic impacts of the digital revolution on our society and economy. Thinking Ahead is a most stimulating and provocative set of essays which deserves a wide audience." Paul Ormerod, economist, and author of Butterfly Economics and Why Most Things Fail. "It is becoming increasingly clear that many of our institutions and social structures are in a bad way and urgently need fixing. Financial crises, international conflicts, civil wars and terrorism, inaction on climate change, problems of poverty, widening economic inequality, health epidemics, pollution and threats to digital privacy and identity are just some of the major challenges that we confront in the twenty-first century. These issues demand new and bold thinking, and that is what Dirk Helbing offers in this collection of essays. If even a fraction of these ideas pay off, the consequences for global governance could be significant. So this is a must-read book for anyone concerned about the future." Philip Ball, science writer and author of Critical Mass "This collection of papers, brought together by Dirk Helbing, is both timely and topical. It raises concerns about Big Data, which are truly frightening and disconcerting, that we do need to be aware of; while at the same time offering some hope that the technology, which has created the previously unthought-of dangers to our privacy, safety and democracy can be the means to address these dangers by enabling social, economic and political participation and coordination, not possible in the past. It makes for compelling reading and I hope for timely action."Eve Mitleton-Kelly, LSE, author of Corporate

Governance and Complexity Theory and editor of Co-evolution of Intelligent Socio-technical Systems
"Carefully distinguishing between big data and open data, and exploring various data infrastructures, Kitchin vividly illustrates how the data landscape is rapidly changing and calls for a revolution in how we think about data." - Evelyn Ruppert, Goldsmiths, University of London "Deconstructs the hype around the 'data revolution' to carefully guide us through the histories and the futures of 'big data.' The book skilfully engages with debates from across the humanities, social sciences, and sciences in order to produce a critical account of how data are enmeshed into enormous social, economic, and political changes that are taking place." - Mark Graham, University of Oxford Traditionally, data has been a scarce commodity which, given its value, has been either jealously guarded or expensively traded. In recent years, technological developments and political lobbying have turned this position on its head. Data now flow as a deep and wide torrent, are low in cost and supported by robust infrastructures, and are increasingly open and accessible. A data revolution is underway, one that is already reshaping how knowledge is produced, business conducted, and governance enacted, as well as raising many questions concerning surveillance, privacy, security, profiling, social sorting, and intellectual property rights. In contrast to the hype and hubris of much media and business coverage, The Data Revolution provides a synoptic and critical analysis of the emerging data landscape. Accessible in style, the book provides: A synoptic overview of big data, open data and data infrastructures An introduction to thinking conceptually about data, data infrastructures, data analytics and data markets Acritical discussion of the technical shortcomings and the social, political and ethical consequences of the data revolution An analysis of the implications of the data revolution to academic, business and government practices

Our world is becoming ever more data-driven, transforming how business is conducted, governance enacted, and knowledge produced. Yet, the nature of data and the scope and implications of the changes taking place are not always clear. The Data Revolution is a must read for anyone interested in why data have become so important in the contemporary era. Thoroughly updated, including ten new chapters, the book provides an accessible and comprehensive: introduction to thinking conceptually about the nature of data and the field of critical data studies overview of big data, open data and data infrastructures analysis of the utility and value of big and open data for research, business, government and civil society assessment of the concerns and risks in a data-driven world and how to prevent and mitigate them.

Through interaction with other databases such as social media, geographic information systems have the ability to build and obtain not only statistics defined on the flows of people, things, and information but also on perceptions, impressions, and opinions about specific places, territories, and landscapes. It is thus necessary to systematize, integrate, and coordinate the various sources of data (especially open data) to allow more appropriate and complete analysis, descriptions, and elaborations. Spatial Planning in the Big Data Revolution is a critical scholarly resource that aims to bring together different methodologies that combine the potential of large data analysis with GIS applications in dedicated tools specifically for territorial, social, economic, environmental, transport, energy, real estate, and landscape evaluation. Additionally, the book addresses a number of fundamental objectives including the application of big data analysis in supporting territorial analysis, validating crowdsourcing and crowdmapping techniques, and disseminating information and community involvement. Urban planners, architects, researchers, academicians, professionals, and practitioners in such fields as computer science, data science, and business intelligence will benefit most from the research contained within this publication.

How a new understanding of warfare can help the military fight today's conflicts more effectively The way wars are fought has changed starkly over the past sixty years. International military campaigns used to play out between armies at central fronts. Today's conflicts find major powers facing rebel insurgencies deploying elusive methods, from improvised explosives to terrorist attacks. Presenting a transformative understanding of these contemporary confrontations, Small Wars, Big Data shows that a revolution in the study of conflict yields new insights into terrorism, civil wars, and foreign interventions. Modern warfare is not about struggles over territory but over people; civilians—and the information they might provide—can turn the tide at critical junctures. Drawing lessons from conflicts in locations around the world, Small Wars, Big Data provides groundbreaking perspectives for how small wars can be better strategized and favorably won.

From the New York Times bestselling author of Big Data, a prediction for how data will revolutionize the market economy and make cash, banks, and big companies obsolete In modern history, the story of capitalism has been a story of firms and financiers. That's all going to change thanks to the Big Data revolution. As Viktor Mayer-Schönberger, bestselling author of Big Data, and Thomas Ramge, who writes for The Economist, show, data is replacing money as the driver of market behavior. Big finance and big companies will be replaced by small groups and individual actors who make markets instead of making things: think Uber instead of Ford, or Airbnb instead of Hyatt. This is the dawn of the era of data capitalism. Will it be an age of prosperity or of calamity? This book provides the indispensable roadmap for securing a better future.

Homework assignments that learn from students. Courses tailored to fit individual pupils. Textbooks that talk back. This is tomorrow's education landscape, thanks to the power of big data. These advances go beyond the much-discussed rise of online courses. As the New York Times-bestselling authors of Big Data explain, the truly fascinating changes are actually occurring in how we measure students' progress and how we can use that data to improve education for everyone, in real time, both on- and offline. Learning with Big Data offers an eye-opening, insight-packed tour through these new trends, for educators, administrators, and readers interested in the latest developments in business and technology.

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