Big Data And Internet Of Things A Roadmap For Smart Environments Studies In Computational Intelligence

The Internet of Things is changing the world. Thingalytics by Dr. John Bates is the most powerful book written to date about the Internet of Things (IoT), showing businesses how to take advantage of the fast Big Data that flows across the digital planet. Pulling from exciting examples of real-life innovation and invention, John makes IoT come alive. From digitally enriching exotic shops in Istanbul, Turkey, to crossing the USA on a sensor-enabled Greyhound Bus to finding new ways to mend people in hospital smart operating rooms, Thingalytics depicts how IoT can make our lives happier, easier, more productive and even safer. Thingalytics, a composite of “Things” and “Analytics,” shows businesses how to use real-time analytics and algorithms in order to seize the opportunities that flow from IoT, while simultaneously spotting and navigating around threats. As each real world object – from people to refrigerators, to tractors and ships or cans of fizzy pop - is digitized and connected to the Internet, it presents a unique opportunity for innovative businesses to learn from, and take advantage of, the digital vibrations it creates. Illustrated by case studies from global, visionary organizations such as Coca Cola, Greyhound Bus and Medtronic, Thingalytics highlights how the alchemy of real-time analytics and smart algorithms can help turn fast Big Data into actionable gold nuggets for any business, anywhere. Digital disruption to traditional “bricks-and-mortar” businesses is happening now. Organizations must transform themselves using digital technologies. Time does not stand still in this brave, new digital world. “Digital Darwinism is unkind to those who wait,” says R “Ray” Wang, a leading industry analyst who has written the Foreword to Thingalytics. John Bates personally interviewed each of the people in this book. His deep knowledge of their vision, their businesses and their goals gives him the insight and the gravitas to explain how each organization is conquering the digital world. Winners in the IoT race will not only profit but could – just possibly – avert disaster. Thingalytics becomes very exciting when we see how lives can be saved, fraud avoided, customers delighted and carbon emissions reduced.

If you want to learn about the Internet of Things, then keep reading... You were just woken up in the middle of the night by smart lightbulbs in your house blasting at full power for no reason. Your bleary-eyed investigation shows they tried to download a firmware update and failed. At that moment, Alexa starts quietly whispering sweet nonsense to herself in the corner and Roomba starts slamming into the nearest wall. What do you do? Is your house haunted or have the machines finally started an uprising? Neither - it's just another day in the IoT wonderland. This book reveals the concepts and methods powering perhaps the most ambitious technological concept of the twenty-first century - the Internet of Things (IoT) - and parades all the ridiculously named gadgets techies imagined to saturate the market before the competition. Mystical, cheap and scalable, the idea of IoT attracts creative grifters of all shapes and sizes to try their luck in pushing yet another completely unnecessary gadget to the market in hopes of fleecing gullible buyers. Some of the topics you'll find in the book are: Origins of IoT IoT Security Ethical Hacking Internet of Things Under The Cushy

Foot of Tech Giants The Power of Infinite Funds IoT Toys Bio-robotics Predictive Analytics Machine Learning Artificial Intelligence Cybersecurity Big Data Business Intelligence Augmented Reality Virtual Reality Our Future And much, much more If you want to learn more about the Internet of Things, then scroll up and click "add to cart"!

Big Data Analytics in Cyber-Physical Systems: Machine Learning for the Internet of Things examines sensor signal processing, IoT gateways, optimization and decision-making, intelligent mobility, and implementation of machine learning algorithms in embedded systems. This book focuses on the interaction between IoT technology and the mathematical tools used to evaluate the extracted data of those systems. Each chapter provides the reader with a broad list of data analytics and machine learning methods for multiple IoT applications. Additionally, this volume addresses the educational transfer needed to incorporate these technologies into our society by examining new platforms for IoT in schools, new courses and concepts for universities and adult education on IoT and data science. . Bridges the gap between IoT, CPS, and mathematical modelling. Features numerous use cases that discuss how concepts are applied in different domains and applications. Provides "best practices", "winning stories" and "real-world examples" to complement innovation. Includes highlights of mathematical foundations of signal processing and machine learning in CPS and IoT.

BIG DATA ANALYTICS FOR INTERNET OF THINGS Discover the latest developments in IoT Big Data with a new resource from established and emerging leaders in the field Big Data Analytics for Internet of Things delivers a comprehensive overview of all aspects of big data analytics in Internet of Things (IoT) systems. The book includes discussions of the enabling technologies of IoT data analytics, types of IoT data analytics, challenges in IoT data analytics, demand for IoT data analytics, computing platforms, analytical tools, privacy, and security. The distinguished editors have included resources that address key techniques in the analysis of IoT data. The book demonstrates how to select the appropriate techniques to unearth valuable insights from IoT data and offers novel designs for IoT systems. With an abiding focus on practical strategies with concrete applications for data analysts and IoT professionals, Big Data Analytics for Internet of Things also offers readers: A thorough introduction to the Internet of Things, including IoT architectures, enabling technologies, and applications An exploration of the intersection between the Internet of Things and Big Data, including IoT as a source of Big Data, the unique characteristics of IoT data, etc. A discussion of the IoT data analytics, including the data analytical requirements of IoT data and the types of IoT analytics, including predictive, descriptive, and prescriptive analytics A treatment of machine learning techniques for IoT data analytics Perfect for professionals, industry practitioners, and researchers engaged in big data analytics related to IoT systems, Big Data Analytics for Internet of Things will also earn a place in the libraries of IoT designers and manufacturers interested in facilitating the efficient implementation of data analytics strategies.

The idea behind this book is to simplify the journey of aspiring readers and researchers to understand Big Data, IoT and Machine Learning. It also includes various real-time/offline applications and case studies in the fields of engineering, computer science, information security and cloud computing using modern tools. This book consists of two sections: Section I contains the topics related to Applications of Machine Learning, and Section II addresses issues about Big Data, the Cloud and the Internet of Things. This

brings all the related technologies into a single source so that undergraduate and postgraduate students, researchers, academicians and people in industry can easily understand them. Features Addresses the complete data science technologies workflow Explores basic and high-level concepts and services as a manual for those in the industry and at the same time can help beginners to understand both basic and advanced aspects of machine learning Covers data processing and security solutions in IoT and Big Data applications Offers adaptive, robust, scalable and reliable applications to develop solutions for day-to-day problems Presents security issues and data migration techniques of NoSQL databases

Less than 0.5 per cent of all data is currently analysed 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. Bernard Marr's 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 crucial 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.

"This book addresses the newest innovative and intelligent applications related to utilizing the large amounts of big data being generated that is increasingly driving decision making and changing the landscape of business intelligence, from governments to private organizations, from communities to individuals"--

Today, cloud computing, big data, and the internet of things (IoT) are becoming indubitable parts of modern information and communication systems. They cover not only information and communication technology but also all types of systems in society including within the realms of business, finance, industry, manufacturing, and management. Therefore, it is critical to remain up-to-date on the latest advancements and applications, as well as current issues and challenges. The Handbook of Research on Cloud Computing and Big Data Applications in IoT is a pivotal reference source that provides relevant theoretical frameworks and the latest empirical research findings on principles, challenges, and applications of cloud computing, big data, and IoT. While highlighting topics such as fog computing, language interaction, and scheduling algorithms, this publication is ideally designed for software developers, computer engineers, scientists, professionals, academicians, researchers, and students.

There currently is no in-depth book dedicated to the challenge of the Internet of Everything and Big Data technologies in smart cities. Humankind today is confronting a critical worldwide portability challenge and the framework that moves cities must keep pace with the innovation. Internet of Everything and Big Data: Major Challenges in Smart Cities reviews the applications, technologies, standards, and other issues related to smart cities. This book is dedicated to addressing the major challenges in realizing smart cities and sensing platforms in

the era of Big Data cities and Internet of Everything. Challenges vary from cost and energy efficiency to availability and service quality. This book examines security issues and challenges, addresses the total information science challenges, covers exploring and creating IoT environment-related sales adaptive systems, and investigates basic and high-level concepts using the latest techniques implemented by researchers and businesses. The book is written for analysts, researchers, and specialists who are working on the future generation of the technologies. It will serve as a valuable guide for those in the industry, and students as well.

Utilize this practical and easy-to-follow guide to modernize traditional enterprise data warehouse and business intelligence environments with next-generation big data technologies. Next-Generation Big Data takes a holistic approach, covering the most important aspects of modern enterprise big data. The book covers not only the main technology stack but also the next-generation tools and applications used for big data warehousing, data warehouse optimization, real-time and batch data ingestion and processing, real-time data visualization, big data governance, data wrangling, big data cloud deployments, and distributed in-memory big data computing. Finally, the book has an extensive and detailed coverage of big data case studies from Navistar, Cerner, British Telecom, Shopzilla, Thomson Reuters, and Mastercard. What You'll Learn Install Apache Kudu, Impala, and Spark to modernize enterprise data warehouse and business intelligence environments, complete with real-world, easy-to-follow examples, and practical advice Integrate HBase, Solr, Oracle, SQL Server, MySQL, Flume, Kafka, HDFS, and Amazon S3 with Apache Kudu, Impala, and Spark Use StreamSets, Talend, Pentaho, and CDAP for real-time and batch data ingestion and processing Utilize Trifacta, Alteryx, and Datameer for data wrangling and interactive data processing Turbocharge Spark with Alluxio, a distributed in-memory storage platform Deploy big data in the cloud using Cloudera Director Perform real-time data visualization and time series analysis using Zoomdata, Apache Kudu, Impala, and Spark Understand enterprise big data topics such as big data governance, metadata management, data lineage, impact analysis, and policy enforcement, and how to use Cloudera Navigator to perform common data governance tasks Implement big data use cases such as big data warehousing, data warehouse optimization, Internet of Things, real-time data ingestion and analytics, complex event processing, and scalable predictive modeling Study real-world big data case studies from innovative companies, including Navistar, Cerner, British Telecom, Shopzilla, Thomson Reuters, and Mastercard Who This Book Is For BI and big data warehouse professionals interested in gaining practical and real-world insight into next-generation big data processing and analytics using Apache Kudu, Impala, and Spark; and those who want to learn more about other advanced enterprise topics

This book highlights that the capacity for gathering, analysing, and utilising vast amounts of digital (user) data raises significant ethical issues. Annika Richterich

provides a systematic contemporary overview of the field of critical data studies that reflects on practices of digital data collection and analysis. The book assesses in detail one big data research area: biomedical studies, focused on epidemiological surveillance. Specific case studies explore how big data have been used in academic work. The Big Data Agenda concludes that the use of big data in research urgently needs to be considered from the vantage point of ethics and social justice. Drawing upon discourse ethics and critical data studies, Richterich argues that entanglements between big data research and technology/internet corporations have emerged. In consequence, more opportunities for discussing and negotiating emerging research practices and their implications for societal values are needed.

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

In today’s market, emerging technologies are continually assisting in common workplace practices as companies and organizations search for innovative ways to solve modern issues that arise. Prevalent applications including internet of things, big data, and cloud computing all have noteworthy benefits, but issues remain when separately integrating them into the professional practices. Significant research is needed on converging these systems and leveraging each of their advantages in order to find solutions to real-time problems that still exist. Challenges and Opportunities for the Convergence of IoT, Big Data, and Cloud Computing is a pivotal reference source that provides vital research on the relation between these technologies and the impact they collectively have in solving real-world challenges. While highlighting topics such as cloud-based analytics, intelligent algorithms, and information security, this publication explores

current issues that remain when attempting to implement these systems as well as the specific applications IoT, big data, and cloud computing have in various professional sectors. This book is ideally designed for academicians, researchers, developers, computer scientists, IT professionals, practitioners, scholars, students, and engineers seeking research on the integration of emerging technologies to solve modern societal issues.

Big data is presenting challenges to cybersecurity. For an example, the Internet of Things (IoT) will reportedly soon generate a staggering 400 zettabytes (ZB) of data a year. Self-driving cars are predicted to churn out 4000 GB of data per hour of driving. Big data analytics, as an emerging analytical technology, offers the capability to collect, store, process, and visualize these vast amounts of data. Big Data Analytics in Cybersecurity examines security challenges surrounding big data and provides actionable insights that can be used to improve the current practices of network operators and administrators. Applying big data analytics in cybersecurity is critical. By exploiting data from the networks and computers, analysts can discover useful network information from data. Decision makers can make more informative decisions by using this analysis, including what actions need to be performed, and improvement recommendations to policies, guidelines, procedures, tools, and other aspects of the network processes. Bringing together experts from academia, government laboratories, and industry, the book provides insight to both new and more experienced security professionals, as well as data analytics professionals who have varying levels of cybersecurity expertise. It covers a wide range of topics in cybersecurity, which include: Network forensics Threat analysis Vulnerability assessment Visualization Cyber training. In addition, emerging security domains such as the IoT, cloud computing, fog computing, mobile computing, and cyber-social networks are examined. The book first focuses on how big data analytics can be used in different aspects of cybersecurity including network forensics, root-cause analysis, and security training. Next it discusses big data challenges and solutions in such emerging cybersecurity domains as fog computing, IoT, and mobile app security. The book concludes by presenting the tools and datasets for future cybersecurity research.

The fields of Big Data and the Internet of Things (IoT) have seen tremendous advances, developments, and growth in recent years. The IoT is the inter-networking of connected smart devices, buildings, vehicles and other items which are embedded with electronics, software, sensors and actuators, and network connectivity that enable these objects to collect and exchange data. The IoT produces a lot of data. Big data describes very large and complex data sets that traditional data processing application software is inadequate to deal with, and the use of analytical methods to extract value from data. This edited book covers analytical techniques for handling the huge amount of data generated by the Internet of Things, from architectures and platforms to security and privacy issues, applications, and challenges as well as future directions.

With the proliferation of devices connected to the internet and connected to each other, the volume of data collected, stored, and processed is increasing every day, which brings new challenges in terms of information security. As big data expands with the help of public clouds, traditional security solutions tailored to private computing infrastructures and confined to a well-defined security perimeter, such as firewalls and demilitarized zones (DMZs), are no longer effective. New security functions are required to work over the heterogenous composition of diverse hardware, operating systems, and network domains. Security, Privacy, and Forensics Issues in Big Data is an essential research book that examines recent advancements in big data and the impact that these advancements have on information security and privacy measures needed for these networks. Highlighting a range of topics including cryptography, data analytics, and threat detection, this is an excellent reference source for students, software developers and engineers, security analysts, IT consultants, academicians, researchers, and professionals.

With the recent growth of big data and the internet of things (IoT), individuals can now upload, retrieve, store, and collect massive amounts of information to help drive decisions and optimize processes. Due to this, a new age of predictive computing is taking place, and data can now be harnessed to predict unknown occurrences or probabilities based on data collected in real time. Predictive Intelligence Using Big Data and the Internet of Things highlights state-of-the-art research on predictive intelligence using big data, the IoT, and related areas to ensure quality assurance and compatible IoT systems. Featuring coverage on predictive application scenarios to discuss these breakthroughs in real-world settings and various methods, frameworks, algorithms, and security concerns for predictive intelligence, this book is ideally designed for academicians, researchers, advanced-level students, and technology developers.

This book reports on the latest advances in mobile technologies for collecting, storing and processing mobile big data in connection with wireless communications. It presents novel approaches and applications in which mobile big data is being applied from an engineering standpoint and addresses future theoretical and practical challenges related to the big data field from a mobility perspective. Further, it provides an overview of new methodologies designed to take mobile big data to the Cloud, enable the processing of real-time streaming events on-the-move and enhance the integration of resource availability through the ‘Anywhere, Anything, Anytime’ paradigm. By providing both academia and industry researchers and professionals with a timely snapshot of emerging mobile big data-centric systems and highlighting related pitfalls, as well as potential solutions, the book fills an important gap in the literature and fosters the further development in the area of mobile technologies for exploiting mobile big data.

This book comprehensively conveys the theoretical and practical aspects of IoT and big data analytics with the solid contributions from practitioners as well as academicians. This book examines and expounds the unique capabilities of the big data analytics platforms in capturing, cleansing and crunching IoT device/sensor data in order to extricate actionable insights. A number of experimental case studies and real-world scenarios are incorporated in this book in order to instigate our book readers. This book

Analyzes current research and development in the domains of IoT and big data analytics Gives an overview of latest trends and transitions happening in the IoT data analytics space Illustrates the various platforms, processes, patterns, and practices for simplifying and streamlining IoT data analytics The Internet of Things and Big Data Analytics: Integrated Platforms and Industry Use Cases examines and accentuates how the multiple challenges at the cusp of IoT and big data can be fully met. The device ecosystem is growing steadily. It is forecast that there will be billions of connected devices in the years to come. When these IoT devices, resource-constrained as well as resource-intensive, interact with one another locally and remotely, the amount of multi-structured data generated, collected, and stored is bound to grow exponentially. Another prominent trend is the integration of IoT devices with cloud-based applications, services, infrastructures, middleware solutions, and databases. This book examines the pioneering technologies and tools emerging and evolving in order to collect, pre-process, store, process and analyze data heaps in order to disentangle actionable insights.

This book covers IoT and Big Data from a technical and business point of view. The book explains the design principles, algorithms, technical knowledge, and marketing for IoT systems. It emphasizes applications of big data and IoT. It includes scientific algorithms and key techniques for fusion of both areas. Real case applications from different industries are offering to facilitate ease of understanding the approach. The book goes on to address the significance of security algorithms in combing IoT and big data which is currently evolving in communication technologies. The book is written for researchers, professionals, and academicians from interdisciplinary and transdisciplinary areas. The readers will get an opportunity to know the conceptual ideas with step-by-step pragmatic examples which makes ease of understanding no matter the level of the reader.

This comprehensive book focuses on better big-data security for healthcare organizations. Following an extensive introduction to the Internet of Things (IoT) in healthcare including challenging topics and scenarios, it offers an in-depth analysis of medical body area networks with the 5th generation of IoT communication technology along with its nanotechnology. It also describes a novel strategic framework and computationally intelligent model to measure possible security vulnerabilities in the context of e-health. Moreover, the book addresses healthcare systems that handle large volumes of data driven by patients' records and health/personal information, including big-data-based knowledge management systems to support clinical decisions. Several of the issues faced in storing/processing big data are presented along with the available tools, technologies and algorithms to deal with those problems as well as a case study in healthcare analytics. Addressing trust, privacy, and security issues as well as the IoT and big-data challenges, the book highlights the advances in the field to guide engineers developing different IoT devices and evaluating the performance of different IoT techniques. Additionally, it explores the impact of such technologies on public, private, community, and hybrid scenarios in healthcare. This book offers professionals, scientists and engineers the latest technologies, techniques, and strategies for IoT and big data.

This book presents current progress on challenges related to Big Data management by focusing on the particular challenges associated with context-aware data-intensive

applications and services. The book is a state-of-the-art reference discussing progress made, as well as prompting future directions on the theories, practices, standards and strategies that are related to the emerging computational technologies and their association with supporting the Internet of Things advanced functioning for organizational settings including both business and e-science. Apart from inter-operable and inter-cooperative aspects, the book deals with a notable opportunity namely, the current trend in which a collectively shared and generated content is emerged from Internet end-users. Specifically, the book presents advances on managing and exploiting the vast size of data generated from within the smart environment (i.e. smart cities) towards an integrated, collective intelligence approach. The book also presents methods and practices to improve large storage infrastructures in response to increasing demands of the data intensive applications. The book contains 19 self-contained chapters that were very carefully selected based on peer review by at least two expert and independent reviewers and is organized into the three sections reflecting the general themes of interest to the IoT and Big Data communities: Section I: Foundations and Principles Section II: Advanced Models and Architectures Section III: Advanced Applications and Future Trends The book is intended for researchers interested in joining interdisciplinary and transdisciplinary works in the areas of Smart Environments, Internet of Things and various computational technologies for the purpose of an integrated collective computational intelligence approach into the Big Data era.

This book examines the Internet of Things (IoT) and Data Analytics from a technical, application, and business point of view. Internet of Things and Data Analytics Handbook describes essential technical knowledge, building blocks, processes, design principles, implementation, and marketing for IoT projects. It provides readers with knowledge in planning, designing, and implementing IoT projects. The book is written by experts on the subject matter, including international experts from nine countries in the consumer and enterprise fields of IoT. The text starts with an overview and anatomy of IoT, ecosystem of IoT, communication protocols, networking, and available hardware, both present and future applications and transformations, and business models. The text also addresses big data analytics, machine learning, cloud computing, and consideration of sustainability that are essential to be both socially responsible and successful. Design and implementation processes are illustrated with best practices and case studies in action. In addition, the book: Examines cloud computing, data analytics, and sustainability and how they relate to IoT overs the scope of consumer, government, and enterprise applications Includes best practices, business model, and real-world case studies Hwaiyu Geng, P.E., is a consultant with Amica Research (www.AmicaResearch.org, Palo Alto, California), promoting green planning, design, and construction projects. He has had over 40 years of manufacturing and management experience, working with Westinghouse, Applied Materials, Hewlett Packard, and Intel on multi-million high-tech projects. He has written and presented numerous technical papers at international conferences. Mr. Geng, a patent holder, is also the editor/author of Data Center Handbook (Wiley, 2015).

This book constitutes the thoroughly refereed post-conference proceedings of the 8th TPC Technology Conference, on Performance Evaluation and Benchmarking, TPCTC 2016, held in conjunction with the 41st International Conference on Very Large

Databases (VLDB 2016) in New Delhi, India, in September 2016. The 9 papers presented were carefully reviewed and selected from 20 submissions. They reflect the rapid pace at which industry experts and researchers develop innovative techniques for evaluation, measurement and characterization of complex systems.

Do you want to understand what big data is all about, but you don't get all the hype? Are you intrigued by the idea of building a career around big data and data science, but you just don't understand it? If so, this book could be what you are looking for.

Big Data and The Internet of ThingsEnterprise Information Architecture for A New AgeApress

This book provides essential future directions for IoT and Big Data research. Thanks to rapid advances in sensors and wireless technology, Internet of Things (IoT)-related applications are attracting more and more attention. As more devices are connected, they become potential components for smart applications. Thus, there is a new global interest in these applications in various domains such as health, agriculture, energy, security and retail. The main objective of this book is to reflect the multifaceted nature of IoT and Big Data in a single source. Accordingly, each chapter addresses a specific domain that is now being significantly impacted by the spread of soft computing

This multi-contributed handbook focuses on the latest workings of IoT (internet of Things) and Big Data. As the resources are limited, it's the endeavor of the authors to support and bring the information into one resource. The book is divided into 4 sections that covers IoT and technologies, the future of Big Data, algorithms, and case studies showing IoT and Big Data in various fields such as health care, manufacturing and automation. Features Focuses on the latest workings of IoT and Big Data Discusses the emerging role of technologies and the fast-growing market of Big Data Covers the movement toward automation with hardware, software, and sensors, and trying to save on energy resources Offers the latest technology on IoT Presents the future horizons on Big Data

This book presents state-of-the-art solutions to the theoretical and practical challenges stemming from the leverage of big data and its computational intelligence in supporting smart network operation, management, and optimization. In particular, the technical focus covers the comprehensive understanding of network big data, efficient collection and management of network big data, distributed and scalable online analytics for network big data, and emerging applications of network big data for computational intelligence.

The growth of Internet use and technologies has increased exponentially within the business sector. When utilized properly, these applications can enhance business functions and make them easier to perform. Exploring the Convergence of Big Data and the Internet of Things is a pivotal reference source featuring the latest empirical research on the business use of computing devices to send and receive data in conjunction with analytic applications to reduce maintenance costs, avoid equipment failures, and improve business operations. Including research on a broad range of topics such as supply chain, aquaculture, and speech recognition systems, this book is ideally designed for researchers, academicians, and practitioners seeking current research on various technology uses in business.

Enterprise Information Architecture for a New Age: Big Data and The Internet of Things, provides guidance in designing an information architecture to accommodate

increasingly large amounts of data, massively large amounts of data, not only from traditional sources, but also from novel sources such everyday objects that are fast becoming wired into global Internet. No business can afford to be caught out by missing the value to be mined from the increasingly large amounts of available data generated by everyday devices. The text provides background as to how analytical solutions and enterprise architecture methodologies and concepts have evolved (including the roles of data warehouses, business intelligence tools, predictive analytics, data discovery, Big Data, and the impact of the Internet of Things). Then you're taken through a series of steps by which to define a future state architecture and create a plan for how to reach that future state. Enterprise Information Architecture for a New Age: Big Data and The Internet of Things helps you gain an understanding of the following: Implications of Big Data from a variety of new data sources (including data from sensors that are part of the Internet of Things) upon an information architecture How establishing a vision for data usage by defining a roadmap that aligns IT with line-of-business needs is a key early step The importance and details of taking a step-by-step approach when dealing with shifting business challenges and changing technology capabilities How to mitigate risk when evaluating existing infrastructure and designing and deploying new infrastructure Enterprise Information Architecture for a New Age: Big Data and The Internet of Things combines practical advice with technical considerations. Author Robert Stackowiak and his team are recognized worldwide for their expertise in large data solutions, including analytics. Don't miss your chance to read this book and gain the benefit of their advice as you look forward in thinking through your own choices and designing your own architecture to accommodate the burgeoning explosion in data that can be analyzed and converted into valuable information to drive your business forward toward success.

Vast holdings and assessment of consumer data by large companies are not new phenomena. Firms' ability to leverage the data to reach customers in targeted campaigns and gain market share is, and on an unprecedented scale. Major companies have moved from serving as data or inventory storehouses, suppliers, and exchange mechanisms to monetizing their data and expanding the products they offer. Such changes have implications for both firms and consumers in the coming years. In From Big Data to Big Profits, Russell Walker investigates the use of internal Big Data to stimulate innovations for operational effectiveness, and the ways in which external Big Data is developed for gauging, or even prompting, customer buying decisions. Walker examines the nature of Big Data, the novel measures they create for market activity, and the payoffs they can offer from the connectedness of the business and social world. With case studies from Apple, Netflix, Google, and Amazon, Walker both explores the market transformations that are changing perceptions of Big Data, and provides a framework for assessing and evaluating Big Data. Although the world appears to be moving toward a marketplace where consumers will be able to "pull" offers from firms, rather than simply receiving offers, Walker observes that such changes will require careful consideration of legal and unspoken business practices as they affect consumer privacy. Rigorous and meticulous, From Big Data to Big Profits is a valuable resource for graduate students and professionals with an interest in Big Data, digital platforms, and analytics.

Big data, analytics, and artificial intelligence are revolutionizing work,

management, and lifestyles and are becoming disruptive technologies for healthcare, e-commerce, and web services. However, many fundamental, technological, and managerial issues for developing and applying intelligent big data analytics in these fields have yet to be addressed. Managerial Perspectives on Intelligent Big Data Analytics is a collection of innovative research that discusses the integration and application of artificial intelligence, business intelligence, digital transformation, and intelligent big data analytics from a perspective of computing, service, and management. While highlighting topics including e-commerce, machine learning, and fuzzy logic, this book is ideally designed for students, government officials, data scientists, managers, consultants, analysts, IT specialists, academicians, researchers, and industry professionals in fields that include big data, artificial intelligence, computing, and commerce.

Big data and the Internet of Things (IoT) play a vital role in prediction systems used in biological and medical applications, particularly for resolving issues related to disease biology at different scales. Modelling and integrating medical big data with the IoT helps in building effective prediction systems for automatic recommendations of diagnosis and treatment. The ability to mine, process, analyse, characterize, classify and cluster a variety and wide volume of medical data is a challenging task. There is a great demand for the design and development of methods dealing with capturing and automatically analysing medical data from imaging systems and IoT sensors. Addressing analytical and legal issues, and research on integration of big data analytics with respect to clinical practice and clinical utility, architectures and clustering techniques for IoT data processing, effective frameworks for removal of misclassified instances, practicality of big data analytics, methodological and technical issues, potential of Hadoop in managing healthcare data is the need of the hour. This book integrates different aspects used in the field of healthcare such as big data, IoT, soft computing, machine learning, augmented reality, organs on chip, personalized drugs, implantable electronics, integration of bio-interfaces, and wearable sensors, devices, practical body area network (BAN) and architectures of web systems. Key Features: Addresses various applications of Medical Big Data and Internet of Medical Things in real time environment Highlights recent innovations, designs, developments and topics of interest in machine learning techniques for classification of medical data Provides background and solutions to existing challenges in Medical Big Data and Internet of Medical Things Provides optimization techniques and programming models to parallelize the computationally intensive tasks in data mining of medical data Discusses interactions, advantages, limitations, challenges and future perspectives of IoT based remote healthcare monitoring systems. Includes data privacy and security analysis of cryptography methods for the Web of Medical Things (WoMT) Presents case studies on the next generation medical chair, electronic nose and pill cam are also presented.

An examination of the uses of data within a changing knowledge infrastructure, offering analysis and case studies from the sciences, social sciences, and humanities. “Big Data” is on the covers of Science, Nature, the Economist, and Wired magazines, on the front pages of the Wall Street Journal and the New York Times. But despite the media hyperbole, as Christine Borgman points out in this examination of data and scholarly research, having the right data is usually better than having more data; little data can be just as valuable as big data. In many cases, there are no data—because relevant data don't exist, cannot be found, or are not available. Moreover, data sharing is difficult, incentives to do so are minimal, and data practices vary widely across disciplines. Borgman, an often-cited authority on scholarly communication, argues that data have no value or meaning in isolation; they exist within a knowledge infrastructure—an ecology of people, practices, technologies, institutions, material objects, and relationships. After laying out the premises of her investigation—six “provocations” meant to inspire discussion about the uses of data in scholarship—Borgman offers case studies of data practices in the sciences, the social sciences, and the humanities, and then considers the implications of her findings for scholarly practice and research policy. To manage and exploit data over the long term, Borgman argues, requires massive investment in knowledge infrastructures; at stake is the future of scholarship.

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 it 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

This book introduces the concept of smart city as the potential solution to the challenges created by urbanization. The Internet of Things (IoT) offers novel features with minimum human intervention in smart cities. This book describes different components of Internet of Things (IoT) for smart cities including sensor

technologies, communication technologies, big data analytics and security. This book highlights state-of-the-art research on big data and the Internet of Things (IoT), along with related areas to ensure efficient and Internet-compatible IoT systems. It not only discusses big data security and privacy challenges, but also energy-efficient approaches to improving virtual machine placement in cloud computing environments. Big data and the Internet of Things (IoT) are ultimately two sides of the same coin, yet extracting, analyzing and managing IoT data poses a serious challenge. Accordingly, proper analytics infrastructures/platforms should be used to analyze IoT data. Information technology (IT) allows people to upload, retrieve, store and collect information, which ultimately forms big data. The use of big data analytics has grown tremendously in just the past few years. At the same time, the IoT has entered the public consciousness, sparking people's imaginations as to what a fully connected world can offer. Further, the book discusses the analysis of real-time big data to derive actionable intelligence in enterprise applications in several domains, such as in industry and agriculture. It explores possible automated solutions in daily life, including structures for smart cities and automated home systems based on IoT technology, as well as health care systems that manage large amounts of data (big data) to improve clinical decisions. The book addresses the security and privacy of the IoT and big data technologies, while also revealing the impact of IoT technologies on several scenarios in smart cities design. Intended as a comprehensive introduction, it offers in-depth analysis and provides scientists, engineers and professionals the latest techniques, frameworks and strategies used in IoT and big data technologies.

This book discusses emerging technologies in the field of the Internet of Things and big data, an area that will be scaled in next two decades. Written by a team of leading experts, it is the only book focusing on the broad areas of both the Internet of things and big data. The thirteen chapters present real-time experimental methods and theoretical explanations, as well as the implementation of these technologies through various applications. Offering a blend of theory and hands-on practices, the book enables graduate, postgraduate and research students who are involved in real-time project scaling techniques to understand projects and their execution. It is also useful for senior computer students, researchers and industry workers who are involved in experimenting with the Internet of Things and big data technologies, helping them to solve the real-time problem. Moreover, the chapters covering cutting-edge technologies help multidisciplinary researchers who are bridging the gap of two different outset real-time problems.

Digital data collection and surveillance is pervasive and no one can protect your privacy without your help. Before you can help yourself, you need to understand the new technologies, what benefits they provide, and what trade-offs they require. Some of those trade-offs – privacy for convenience – could be softened by our own behavior or be reduced by legislation if we fight for it. This book

analyzes why privacy is important to all of us, and it describes the technologies that place your privacy most at risk, starting with modern computing and the Internet.