Big Data In Action Cgi

This edited collection brings together a series of interdisciplinary contributions in the field of Information Technology Law. The topics addressed in this book cover a wide range of theoretical and practical legal issues that have been created by cutting-edge Internet technologies, primarily Big Data, the Internet of Things, and Cloud computing. Consideration is also given to more recent technological breakthroughs that are now used to assist, and — at times — substitute for, human work, such as automation, robots, sensors, and algorithms. The chapters presented in this edition address these issues from the perspective of different legal backgrounds. The first part of the book discusses some of the shortcomings that have prompted legislators to carry out reforms with regard to privacy, data protection, and data security. Notably, some of the complexities and salient points with regard to the new European General Data Protection Regulation (EU GDPR) and the new amendments to the Japan's Personal Information Protection Act (PIPA) have been scrutinized. The second part looks at the vital role of Internet intermediaries (or brokers) for the proper functioning of the globalized electronic market and innovation technologies in general. The third part examines an electronic approach to evidence with an evaluation of how these technologies affect civil and criminal investigations. The authors also explore issues that have emerged in e-commerce, such as Bitcoin and its blockchain network effects. The book aims to explain, systemize and solve some of the lingering legal questions created by the disruptive technological change that characterizes the early twenty-first century.

The digital age has presented an exponential growth in the amount of data available to individuals looking to draw conclusions based on given or collected information across industries. Challenges associated with the analysis, security, sharing, storage, and visualization of large and complex data sets continue to plague data scientists and analysts alike as traditional data processing applications struggle to adequately manage big data. The Handbook of Research on Big Data Storage and Visualization Techniques is a critical scholarly resource that explores big data analytics and technologies and their role in developing a broad understanding of issues pertaining to the use of big data in multidisciplinary fields. Featuring coverage on a broad range of topics, such as architecture patterns, programing systems, and computational energy, this publication is geared towards professionals, researchers, and students seeking current research and application topics on the subject.

After an overview of major scientific discoveries of the 18th and 19th centuries, which created electrical science as we know and understand it and led to its useful applications in energy conversion, transmission, manufacturing industry and communications, this Circuits and Systems History book fills a gap in published literature by providing a record of the many outstanding scientists, mathematicians and engineers who laid the foundations of Circuit Theory and Filter Design from the mid-20th Century. Additionally, the book records the history of the IEEE Circuits and Systems Society from its origins as the small Circuit Theory Group of the Institute of Radio Engineers (IRE), which merged with the American Institute of Electrical Engineers (AIEE) to form IEEE in 1963, to the large and broad-coverage worldwide IEEE Society which it is today.Many authors from many countries contributed to the creation of this book, working to a very tight time-schedule. The result is a substantial contribution to their enthusiasm and expertise which it is hoped that readers will find both interesting and useful. It is sure that in such a book omissions will be found and in the space and time available, much valuable material had to be left out. It is hoped that this book will stimulate an interest in the marvellous heritage and contributions that have come from the many outstanding people who worked in the Circuits and Systems area.

We are in the era of big data. With a smartphone now in nearly every pocket, a computer in nearly every household, and an ever-increasing number of Internet-connected devices in the marketplace, the amount of consumer data flowing throughout the economy continues to increase rapidly. The analysis of this data is often valuable to companies and to consumers, as it can guide the development of new products and services, predict the preferences of individuals, help tailor services and opportunities, and guide individualized marketing. At the same time, advocates, academics, and others have raised concerns about whether certain uses of big data analytics may harm consumers, particularly lowincome and underserved populations. To explore these issues, the Federal Trade Commission ("FTC" or "the Commission") held a public workshop, Big Data: A Tool for Inclusion or Exclusion?, on September 15, 2014. The workshop brought together stakeholders to discuss both the potential of big data to create opportunities for consumers and to exclude them from such opportunities. The Commission has synthesized the information from the workshop, a prior FTC seminar on alternative scoring products, and recent research to create this report. Though "big data" encompasses a wide range of analytics, this report addresses only the commercial use of big data consisting of consumer information and focuses on the impact of big data on low-income and underserved populations. Of course, big data also raises a host of other important policy issues, such as notice, choice, and security, among others. Those, however, are not the primary focus of this report. As "little" data becomes "big" data, it goes through several phases. The life cycle of big data can be divided into four phases: (1) collection; (2) compilation and consolidation; (3) analysis; and (4) use. This report focuses on the fourth phase and discusses the benefits and risks created by the use of big data analytics; the consumer protection and equal opportunity laws that currently apply to big data; research in the field of big data; and lessons that companies should take from the research. Ultimately, this report is intended to educate businesses on important laws and research that are relevant to big data analytics and provide suggestions aimed at maximizing the benefits and minimizing its risks.

Provides a richly researched yet concrete agenda for addressing the current crises of American democracy.

This book constitutes the refereed proceedings of the Second International Conference on Data Mining and Big Data, DMBD 2017, held in Fukuoka, Japan, in July/August 2017. The 53 papers presented in this volume were carefully reviewed and selected from 96 submissions. They were organized in topical sections named: association analysis; clustering; prediction; classification; schedule and sequence analysis; big data; data analysis; data mining; text mining; deep learning; high performance computing; knowledge base and its framework; and fuzzy control.

HIT or Miss for Student: Lessons Learned from Health Information Technology Projects presents and dissects a wide variety of HIT failures so that the students can understand in each case what went wrong and why and how to avoid such problems, without focusing on the involvement of specific people, organizations, or vendors. The lessons may be applied to future and existing projects, or used to understand why a previous project failed. The student also learns how common causes of failure affect different kinds of HIT projects and with different results. Cases are organized by the type of focus (hospital care, ambulatory care, and community). Each case provides analysis by an author who was involved in the project plus the insight of an HIT expert. This book presents a model to discuss HIT failures in a safe and protected manner, providing an opportunity to focus on the lessons offered by a failed initiative as opposed to worrying about potential retribution for exposing a project as having failed. Access expert insight into key obstacles that must be overcome to leverage IT and transform healthcare. Each de-identified case study includes an analysis by a group of industry experts along with a counter analysis. Cases include a list of key words and are categorized by project (e.g. CPOE, business intelligence). Each chapter or case contains test questions and study suggestions for the student. Answers are provided as an appendix to the book. Whether you're a graduate student in a health administration or health IT program or attending training sessions sponsored by their healthcare organization, this valuable resource for all who want to understand the dynamics of HIT projects and why some fail and others succeed.

The Information and Communications for Development series looks in depth at how information and communications technologies are affecting economic growth in developing countries. This new report, the fourth in the series, examines the topic of data-driven development, or how better information makes for better policies. The objective is to assist

developing-country firms and governments in unlocking the value of the data they hold for better service delivery and decision making and to empower individuals to take more control of their personal data. We are undoubtedly experiencing a data revolution in which our ability to generate, process, and utilize information has been magnified many times over by the machines that we increasingly rely upon. This report is about how the data revolution is changing the behavior of governments, individuals, and firms and how these changes affect the nature of development: economic, social, and cultural. How can governments extract value from data to improve service delivery in the same way that private companies have learned to do for profit? Is it feasible for individuals to take ownership of their own data and to use it to improve their livelihoods and quality of life? Can developing-country firms compete with the internet majors on their own turf and be even more innovative in their use of data to serve local customers better? Though the report is aimed primarily at government policy makers, it also has great relevance for individuals concerned about how their personal data is used and how the data revolution might affect their future job prospects. For private sector firms, particularly those in developing countries, the report suggests how they might expand their markets and improve their competitive edge. For development professionals, the report provides guidance on how they might use data more creatively to tackle long-standing global challenges, such as eliminating extreme poverty, promoting shared prosperity, or mitigating the effects of climate change. The report's chapters explore different themes associated with the supply of data, the technology underlying it, and the demand for it. An overview chapter focuses on government use of data and presentation of definitions. Part I of the report then looks at the "supply side†? of the data sector, with chapters on data connectivity and capacity (where data comes from, how it is stored, and where it goes) and data technology (specifically big data analytics and artificial intelligence) and how this is contributing to development. Part II looks at the sector's "demand side,†? with a chapter on people's use of data and another that examines how firms use digital platforms in the data economy and how that contributes to competitiveness. Part III brings together the policy implications for developing-country stakeholders, with a chapter considering government policies for data, including data protection and privacy. A closing Data Notes appendix looks at statistical indicators associated with the use of data and presents the 2018 update of the Digital Adoption Index (DAI), a composite indicator introduced in the 2016 World Development Report: Digital Dividends.

The third edition of HIT or Miss: Lessons Learned from Health Information Technology Projects presents and dissects a wide variety of HIT failures so that the reader can understand in each case what went wrong and why and how to avoid such problems, without focusing on the involvement of specific people, organizations, or vendors. The lessons may be applied to future and existing projects, or used to understand why a previous project failed. The reader also learns how common causes of failure affect different kinds of HIT projects and with different results. Cases are organized by the type of focus (hospital care, ambulatory care, and community). Each case provides analysis by an author who was involved in the project plus the insight of an HIT expert. This book presents a model to discuss HIT failures in a safe and protected manner, providing an opportunity to focus on the lessons offered by a failed initiative as opposed to worrying about potential retribution for exposing a project as having failed. Access expert insight into key obstacles that must be overcome to leverage IT and transform healthcare. Each de-identified case study includes an analysis by a group of industry experts along with a counter analysis. Cases include a list of key words and are categorized by project (e.g. CPOE, business intelligence). Each case study concludes with a lesson learned section.

The digital age has presented an exponential growth in the amount of data available to individuals looking to draw conclusions based on given or collected information across industries. Challenges associated with the analysis, security, sharing, storage, and visualization of large and complex data sets continue to plague data scientists and analysts alike as traditional data processing applications struggle to adequately manage big data. Big Data: Concepts, Methodologies, Tools, and Applications is a multi-volume compendium of research-based perspectives and solutions within the realm of large-scale and complex data sets. Taking a multidisciplinary approach, this publication presents exhaustive coverage of crucial topics in the field of big data including diverse applications, storage solutions, analysis techniques, and methods for searching and transferring large data sets, in addition to security issues. Emphasizing essential research in the field of data science, this publication is an ideal reference source for data analysts, IT professionals, researchers, and academics.

This text provides an explanation of CGI and related techniques for people who want to provide their own information servers on the Web. It explains the value of CGI and how it works, and looks at the subtle details of programming. The accompanying CD-ROM

This book brings together papers that offer conceptual analyses, highlight issues, propose solutions, and discuss practices regarding privacy, data protection and Artificial Intelligence. It is one of the results of the thirteenth annual International Conference on Computers, Privacy and Data Protection (CPDP) held in Brussels in January 2020. The development and deployment of Artificial Intelligence promises significant break-throughs in how humans use data and information to understand and interact with the world. The technology, however, also raises significant concerns. In particular, concerns are raised as to how Artificial Intelligence will impact fundamental rights. This interdisciplinary book has been written at a time when the scale and impact of data processing on society – on individuals as well as on social systems – is becoming ever starker. It discusses open issues as well as daring and prospective approaches and is an insightful resource for readers with an interest in computers, privacy and data protection.

Defense of Scientific Hypothesis: From Reproducibility Crisis to Big Data sets out to explain and defend the scientific hypothesis. Alger's mission is to counteract the misinformation and misunderstanding about the hypothesis that even seasoned scientists have concerning its nature and place in modern science. Most biological scientists receive little or no formal training in scientific thinking. Further, the hypothesis is under attack by critics who claim that it is irrelevant to science. In order to appreciate and

evaluate scientific controversies like global climate change, vaccine safety, etc., the public first needs to understand the hypothesis. Defense of Scientific Hypothesis begins by describing and analyzing the scientific hypothesis in depth and examining its relationships to various kinds of science. Alger then guides readers through a review of the hypothesis in the context of the Reproducibility Crisis and presents survey data on how scientists perceive and employ hypotheses. He assesses cognitive factors that influence our ability to use the hypothesis and makes practical and policy recommendations for teaching and learning about it. Finally, Alger considers two possible futures of the hypothesis in science as the Big Data revolution looms: in one scenario, the hypothesis is displaced by the Big Data Mindset that forgoes understanding in favor of correlation and prediction. In the other, robotic science incorporates the hypotheses into mechanized laboratories guided by artificial intelligence. But in his illuminating epilogue, Alger envisions a third way, the Centaur Scientist, a symbiotic relationship between human scientists and computers.

Analyzing data sets has continued to be an invaluable application for numerous industries. By combining different algorithms, technologies, and systems used to extract information from data and solve complex problems, various sectors have reached new heights and have changed our world for the better. The Handbook of Research on Engineering, Business, and Healthcare Applications of Data Science and Analytics is a collection of innovative research on the methods and applications of data analytics. While highlighting topics including artificial intelligence, data security, and information systems, this book is ideally designed for researchers, data analysts, data scientists, healthcare administrators, executives, managers, engineers, IT consultants, academicians, and students interested in the potential of data application technologies.

Platinum Edition XHTML, XML and Java 2 is separated into several sections, each of which focuses on a specific technology, including XHTML, XML, JavaScript, Dynamic HTML, CGI programming with Perl, Server-side Programming with ASP, ColdFusion and PHP, and Java 2. Throughout the book, the authors focus on the features and benefits of each technology, giving readers a well-rounded education in current web development tools and techniques. In addition, the authors demonstrate the value of combining various technologies (such as Java and XML) for more powerful web solutions.

For more than 20 years, Network World has been the premier provider of information, intelligence and insight for network and IT executives responsible for the digital nervous systems of large organizations. Readers are responsible for designing, implementing and managing the voice, data and video systems their companies use to support everything from business critical applications to employee collaboration and electronic commerce.

This book discusses the fusion of mobile and WiFi network data with semantic technologies and diverse context sources for offering semantically enriched context-aware services in the telecommunications domain. It presents the OpenMobileNetwork as a platform for providing estimated and semantically enriched mobile and WiFi network topology data using the principles of Linked Data. This platform is based on the OpenMobileNetwork Ontology consisting of a set of network context ontology facets that describe mobile network cells as well as WiFi access points from a topological perspective and geographically relate their coverage areas to other context sources. The book also introduces Linked Crowdsourced Data and its corresponding Context Data Cloud Ontology, which is a crowdsourced dataset combining static location data with dynamic context information. Linked Crowdsourced Data supports the OpenMobileNetwork by providing the necessary context data richness for more sophisticated semantically enriched context-aware services. Various application scenarios and proof of concept services as well as two separate evaluations are part of the book. As the usability of the provided services closely depends on the quality of the approximated network topologies, it compares the estimated positions for mobile network cells within the OpenMobileNetwork to a small set of real-world cell positions. The results prove that context-aware services based on the OpenMobileNetwork rely on a solid and accurate network topology dataset. The book also evaluates the performance of the exemplary Semantic Tracking as well as Semantic Geocoding services, verifying the applicability and added value of semantically enriched mobile and WiFi network data.

This book brings fantasy storytelling to a whole new level by providing an in-depth insight into the tools used for virtual reality, augmented reality, 360 cinema and motion capture in order to repurpose them to create a virtual studio for filmmaking. Gone are the long days and months of post before seeing your final product. Composites and CG characters can now be shot together as fast as a live-action show. Using off-the-shelf software and tools, authors Mark Sawicki and Juniko Moody document the set-up and production pipelines of the modern virtual/mocap studio. They reveal the procedures and secrets for making movies in virtual sets. The high-end technology that enabled the creation of films such as The Lord of the Rings, Avatar and The Jungle Book is now accessible for smaller, independent production companies. Do you want your actors to perform inside of an Unreal® Game Engine set and interact with the environment? Do you want to be able to put your live-action camera on a jib or dolly and move effortlessly through both a live-action and virtual space together? Do you want live performers interacting with giants, elves and other creatures manipulated by motion capture in real time? This book discusses all of these scenarios and more, showing readers how to create high-quality virtual content using alternative, cost-effective technology. Tutorials, case studies, and project breakdowns provide essential tips on how to avoid and overcome common pitfalls, making this book an indispensable guide for both beginners to create virtual backlot content and more advanced VFX users wanting to adopt best practices when planning and directing virtual productions with RealityTM software and performance capture equipment such as Qualysis.

This highly original book is an ethnographic noir of how Big Data profits from patient private health information. The book follows personal health data as it is collected from inside healthcare and beyond to create patient consumer profiles that are sold to marketers. Primarily told through a first-person noir narrative, Ebeling as a sociologist-hard-boiled-detective, investigates Big Data and the trade in private health information by examining the information networks that patient data traverses. The noir narrative reveals the processes that the data broker industry uses to create data commodities—data phantoms or the marketing profiles of patients that are bought by advertisers to directly market to consumers. Healthcare and Big Data considers the implications these "data phantoms" have for patient privacy as well as the very real harm that they can cause.

A former Secretary of Homeland Security examines our outdated laws regarding the protection of personal information, and the pressing need for change. Nothing undermines our freedom more than losing control of information about ourselves. And yet, as daily events underscore, we are ever more vulnerable to cyber-attack. In this bracing book, Michael Chertoff makes clear that our laws and policies surrounding the protection of personal information, written for an earlier time, are long overdue for a complete overhaul. On the one hand, the collection of data—more widespread by business than by government, and impossible to stop—should be facilitated as an ultimate protection for society. On the other, standards under which information can be inspected, analyzed, or used must be significantly tightened. In offering his compelling call for action, Chertoff argues that what is at stake is not so much the simple loss of privacy, which is almost impossible to protect, but of individual autonomy—the ability to make personal choices free of manipulation or coercion. Offering vivid stories over many decades that illuminate the three periods of data gathering we have experienced, Chertoff explains the complex legalities surrounding issues of data collection and dissemination today, and charts a path that balances the needs of government, business, and individuals alike. "Surveys the brave new world of data

collection and analysis…The world of data as illuminated here would have scared George Orwell."?Kirkus Reviews "Chertoff has a unique perspective on data security and its implications for citizen rights as he looks at the history of and changes in privacy laws since the founding of the U.S."—Booklist

Rigorously test and improve the security of all your Web software! It's as certain as death and taxes: hackers will mercilessly attack your Web sites, applications, and services. If you're vulnerable, you'd better discover these attacks yourself, before the black hats do. Now, there's a definitive, hands-on guide to security-testing any Web-based software: How to Break Web Software. In this book, two renowned experts address every category of Web software exploit: attacks on clients, servers, state, user inputs, and more. You'll master powerful attack tools and techniques as you uncover dozens of crucial, widely exploited flaws in Web architecture and coding. The authors reveal where to look for potential threats and attack vectors, how to rigorously test for each of them, and how to mitigate the problems you find. Coverage includes · Client vulnerabilities, including attacks on client-side validation · State-based attacks: hidden fields, CGI parameters, cookie poisoning, URL jumping, and session hijacking · Attacks on user-supplied inputs: cross-site scripting, SQL injection, and directory traversal · Language- and technology-based attacks: buffer overflows, canonicalization, and NULL string attacks · Server attacks: SQL Injection with stored procedures, command injection, and server fingerprinting · Cryptography, privacy, and attacks on Web services Your Web software is mission-critical–it can't be compromised. Whether you're a developer, tester, QA specialist, or IT manager, this book will help you protect that software–systematically.

Learn to effectively use, configure, deploy and extend Splunk and implement its powerful capabilities.

This book collects articles presented at the 13th International Conference on Information Technology- New Generations, April, 2016, in Las Vegas, NV USA. It includes over 100 chapters on critical areas of IT including Web Technology, Communications, Security, and Data Mining.

In The Future of Change, Ray Brescia identifies a series of "social innovation moments" in American history. Through these moments—during which social movements have embraced advances in communications technologies—he illuminates the complicated, dangerous, innovative, and exciting relationship between these technologies, social movements, and social change. Brescia shows that, almost without fail, developments in how we communicate shape social movements, just as those movements change the very technologies themselves. From the printing press to the television, social movements have leveraged communications technologies to advance change. In this moment of rapidly evolving communications, it's imperative to assess the role that the Internet, mobile devices, and social media can play in promoting social justice. But first we must look to the past, to examples of movements throughout American history that successfully harnessed communications technology, thus facilitating positive social change. Such movements embraced new communications technologies to help organize their communities; to form grassroots networks in order to facilitate face-to-face interactions; and to promote positive, inclusive messaging that stressed their participants' shared dignity and humanity. Using the past as prologue, The Future of Change provides effective lessons in the use of communications technology so that we can have the best communicative tools at our disposal—both now and in the future.

Big Data in medical science – what exactly is that? What are the potentials for healthcare management? Where is Big Data at the moment? Which risk factors need to be kept in mind? What is hype and what is real potential? This book provides an impression of the new possibilities of networked data analysis and "Big Data" – for and within medical science and healthcare management. Big Data is about the collection, storage, search, distribution, statistical analysis and visualization of large amounts of data. This is especially relevant in healthcare management, as the amount of digital information is growing exponentially. An amount of data corresponding to 12 million novels emerges during the time of a single hospital stay. These are dimensions that cannot be dealt with without IT technologies. What can we do with the data that are available today? What will be possible in the next few years? Do we want everything that is possible? Who protects the data from wrong usage? More importantly, who protects the data from NOT being used? Big Data is the "resource of the 21st century" and might change the world of medical science more than we understand, realize and want at the moment. The core competence of Big Data will be the complete and correct collection, evaluation and interpretation of data. This also makes it possible to estimate the frame conditions and possibilities of the automation of daily (medical) routine. Can Big Data in medical science help to better understand fundamental problems of health and illness, and draw consequences accordingly? Big Data also means the overcoming of sector borders in healthcare management. The specialty of Big Data analysis will be the new quality of the outcomes of the combination of data that were not related before. That is why the editor of the book gives a voice to 30 experts, working in a variety of fields, such as in hospitals, in health insurance or as medical practitioners. The authors show potentials, risks, concrete practical examples, future scenarios, and come up with possible answers for the field of information technology and data privacy.

Takes a unique angle on Ajax, providing patterns for application development and best practices for integrating Ajax and REST into rich applications Designed to suit all groups of developers across many platforms, who are interested in the hot new topic of Ajax High demand for Ajax knowledge. Leading technology companies like Google and Yahoo are looking for developers with intimate knowledge of Ajax

Data access is essential for serving the public good. This book provides new frameworks to address the resultant privacy issues.

Learn JavaScript fast! With JavaScript Weekend Crash Course, you can get up to speed programming JavaScript applications in a single weekend! This book begins at the beginning and assumes no prior JavaScript experience. You'll learn the essentials of JavaScript from Friday evening through Sunday afternoon.

Analytics and artificial intelligence (AI), what are they good for? The bandwagon keeps answering, absolutely everything! Analytics and artificial intelligence have captured the attention of everyone from top executives to the person in the street. While these disciplines have a relatively long history, within the last ten or so years they have exploded into corporate business and public consciousness. Organizations have rushed to embrace data-driven decision making. Companies everywhere are turning out products boasting that "artificial intelligence is included." We are indeed living in exciting times. The question we need to ask is, do we really know how to get business value from these exciting tools? Unfortunately, both the analytics and AI communities have not done a great job in collaborating and communicating with each other to build the necessary synergies. This book bridges the gap between these two critical fields. The book begins by explaining the commonalities and differences in the fields of data science, artificial intelligence, and

autonomy by giving a historical perspective for each of these fields, followed by exploration of common technologies and current trends in each field. The book also readers introduces to applications of deep learning in industry with an overview of deep learning and its key architectures, as well as a survey and discussion of the main applications of deep learning. The book also presents case studies to illustrate applications of AI and analytics. These include a case study from the healthcare industry and an investigation of a digital transformation enabled by AI and analytics transforming a product-oriented company into one delivering solutions and services. The book concludes with a proposed AI-informed data analytics life cycle to be applied to unstructured data.

This report contains detailed profiles of twelve of the world's leading platform companies and derives insights from those profiles about what platforms actually do, how they do it, and why they succeed financially.

This open access book was prepared as a Final Publication of the COST Action IC1406 "High-Performance Modelling and Simulation for Big Data Applications (cHiPSet)" project. Long considered important pillars of the scientific method, Modelling and Simulation have evolved from traditional discrete numerical methods to complex data-intensive continuous analytical optimisations. Resolution, scale, and accuracy have become essential to predict and analyse natural and complex systems in science and engineering. When their level of abstraction raises to have a better discernment of the domain at hand, their representation gets increasingly demanding for computational and data resources. On the other hand, High Performance Computing typically entails the effective use of parallel and distributed processing units coupled with efficient storage, communication and visualisation systems to underpin complex data-intensive applications in distinct scientific and technical domains. It is then arguably required to have a seamless interaction of High Performance Computing with Modelling and Simulation in order to store, compute, analyse, and visualise large data sets in science and engineering. Funded by the European Commission, cHiPSet has provided a dynamic trans-European forum for their members and distinguished guests to openly discuss novel perspectives and topics of interests for these two communities. This cHiPSet compendium presents a set of selected case studies related to healthcare, biological data, computational advertising, multimedia, finance, bioinformatics, and telecommunications.

Die Erzeugung, Verknüpfung und Auswertung von großen Datenmengen (oft als „Big Data" bezeichnet) gewinnt in nahezu allen Lebensbereichen rasant an Bedeutung. Mit dieser Entwicklung sind Fragen von erheblicher gesellschaftlicher Relevanz verbunden. Die Diskussionen über eine neue Balance zwischen der Ausschöpfung von Innovationspotentialen einerseits und der Realisierung individueller und gesellschaftlicher Werte andererseits haben erst begonnen. Der Band nähert sich denen mit Big Data verbundenen gesellschaftlichen Herausforderungen aus einer multidisziplinären Perspektive.

Web applications occupy a large space within the IT infrastructure of a business or a corporation. They simply just don't touch a front end or a back end; today's web apps impact just about every corner of it. Today's web apps have become complex, which has made them a prime target for sophisticated cyberattacks. As a result, web apps must be literally tested from the inside and out in terms of security before they can be deployed and launched to the public for business transactions to occur. The primary objective of this book is to address those specific areas that require testing before a web app can be considered to be completely secure. The book specifically examines five key areas: Network security: This encompasses the various network components that are involved in order for the end user to access the particular web app from the server where it is stored at to where it is being transmitted to, whether it is a physical computer itself or a wireless device (such as a smartphone). Cryptography: This area includes not only securing the lines of network communications between the server upon which the web app is stored at and from where it is accessed from but also ensuring that all personally identifiable information (PII) that is stored remains in a ciphertext format and that its integrity remains intact while in transmission. Penetration testing: This involves literally breaking apart a Web app from the external environment and going inside of it, in order to discover all weaknesses and vulnerabilities and making sure that they are patched before the actual Web app is launched into a production state of operation. Threat hunting: This uses both skilled analysts and tools on the Web app and supporting infrastructure to continuously monitor the environment to find all security holes and gaps. The Dark Web: This is that part of the Internet that is not openly visible to the public. As its name implies, this is the "sinister" part of the Internet, and in fact, where much of the PII that is hijacked from a web app cyberattack is sold to other cyberattackers in order to launch more covert and damaging threats to a potential victim. Testing and Securing Web Applications breaks down the complexity of web application security testing so this critical part of IT and corporate infrastructure remains safe and in operation.

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