

## 2017 Trends In Datacenter And Critical Infrastructure

Innovation on Tap is the story of innovation in America told through the eyes of 25 entrepreneurs, from Eli Whitney and his cotton gin to Lin-Manuel Miranda and his Broadway smash, Hamilton. The stories illustrate the sweep and impact of innovation. From razor blades, insurance, and baseball to smart cities, online running communities, and cybersecurity, innovators across three centuries gather in an imaginary barroom to discuss the essential themes of entrepreneurship--Mechanization, Mass Production, Consumerism, Digitization, and Sustainability--while emphasizing and reemphasizing the importance of community to their success.

This book features high-quality, peer-reviewed research papers presented at the First International Conference on Computer Science, Engineering and Education Applications (ICCSEEA2018), held in Kiev, Ukraine on 18–20 January 2018, and organized jointly by the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" and the International Research Association of Modern Education and Computer Science. The state-of-the-art papers discuss topics in computer science, such as neural networks, pattern recognition, engineering techniques, genetic coding systems, deep learning with its medical applications, as well as knowledge representation and its applications in education. It is an excellent reference resource for researchers, graduate students, engineers, management practitioners, and undergraduate students interested in computer science and their applications in engineering and education.

Inequalities in human development are a roadblock to achieving the 2030 Agenda for Sustainable Development. They are not just about disparities in income and wealth. They cannot be accounted for simply by using summary measures of inequality that focus on a single dimension. And they will shape the prospects of people that may live to see the 22nd century. The 2019 Report explores inequalities in human development by going beyond income, beyond averages and beyond today. It asks what forms of inequality matter and what drives them, recognizing that pernicious inequalities are generally better thought of as a symptom of broader problems in a society and economy. It also asks what policies can tackle those drivers]policies that can simultaneously help nations to grow their economies, improve human development and reduce inequality.

\*First Place Winner of the Society of Environmental Journalists' Rachel Carson Environment Book Award\* "If you're looking for something to cling to in what often feels like a hopeless conversation, Schlossberg's darkly humorous, knowledge-is-power, eyes-wide-open approach may be just the thing."--Vogue From a former New York Times science writer, this urgent call to action will empower you to stand up to climate change and environmental pollution by making simple but impactful everyday choices. With urgency and wit, Tatiana Schlossberg explains that far from being only a distant problem of the natural world created by the fossil fuel industry, climate change is all around us, all the time, lurking everywhere in our convenience-driven society, all without our realizing it. By examining the unseen and unconscious environmental impacts in four areas--the Internet and technology, food, fashion, and fuel - Schlossberg helps readers better understand why climate change is such a complicated issue, and how it connects all of us: How streaming a movie on Netflix in New York burns coal in Virginia; how eating a hamburger in California might contribute to pollution in the Gulf of Mexico; how buying an inexpensive cashmere sweater in Chicago expands the Mongolian desert; how destroying forests from North Carolina is necessary to generate electricity in England. Cataloging the complexities and frustrations of our carbon-intensive society with a dry sense of humor, Schlossberg makes the climate crisis and its solutions interesting and relevant to everyone who cares, even a little, about the planet. She empowers readers to think about their stuff and the environment in a new way, helping them make more informed choices when it comes to the future of our world. Most importantly, this is a book about the power we have as voters and consumers to make sure that the fight against climate change includes all of us and all of our stuff, not just industry groups and politicians. If we have any hope of solving the problem, we all have to do it together. "A compelling-and illuminating-look at how our daily habits impact the environment."--Vanity Fair "Shows how even the smallest decisions can have profound environmental consequences."--The New York Times

Climate Change and the Emergent National Security Landscape

Thriving on Our Changing Planet

Advanced Practice Nursing: Essential Knowledge for the Profession

Racial Disproportionality and Disparities in the Child Welfare System

Data centers as an asset class. Evaluation of specialized REITs

Sustainable Nation

Role of IoT in Green Energy Systems

Illuminates the multiple barriers that plague the education system and shows the way toward enlightened and inclusive educational policy and policymaking This book showcases new scholarship in the broad field of education policy and governance. Authored by some of the field's foremost scholars, as well as new and up-and-coming academics, this definitive handbook offers a range of cultural, economic, and political perspectives on the state of education policy today. It addresses historic, current, and future education policy--incorporating changing social landscapes of education, economy, and policy. The Wiley Handbook of Educational Policy covers the role of politics in education governance; the politics of philanthropy and for-profits; the culture and economy of professional organizations; the governance of technology integration; and future political realities to global citizenry. Themes and topics range not only across early childhood, K-12, and tertiary forms of schooling, but also across the policy questions and concerns that transcend these distinctions. Each chapter features key words, key questions, conclusions, and thought-provoking ideas that provoke readers to think about ways to improve the current conditions under which educational policy-makers work. Provides a traditional understanding of educational policy Shows how educational policy has changed due to the boom of private funding Explores the changing demographics in education populations over the last 40 years Discusses policies and the ethics of using and overseeing technology in teaching and learning environments Looks at future trends from contemporary political origins The Wiley Handbook of Educational Policy is an important book that should be read by every administrator, policy maker, and educator working in the education system.

I Believe Jesus Will Return... What More Do I Need to Know? Do you tend to avoid studying books of the Bible like Revelation and Ezekiel? Does it feel like words such as rapture and apocalypse fly right over your head? It's common to dismiss these and other topics related to Bible prophecy as irrelevant and...well...too complicated. But God's Word says, "Blessed is the one who reads aloud the words of this prophecy, and blessed are those who hear it and take to heart what is written in it, because the time is near" (Revelation 1:3). Prepare to be blessed in an entertaining and meaningful way! The Non-Prophet's Guide to the End Times combines engaging illustrations with down-to-earth explanations to help you navigate the ins and outs of Bible prophecy. There's no better time to grasp God's plans for the future--and for you--than this very moment.

Environmental problems are, first and foremost, political and, therefore, about power. Using a framework of political economy and political ecology, the authors deconstruct current environmental problems to identify root causes and the possibilities to address problems through mobilization of collective action and social power.

Energy systems worldwide are undergoing major transformation as a consequence of the transition towards the widespread use of clean and sustainable energy sources. Basically, this involves massive changes in technical and organizational levels together with tremendous technological upgrades in different sectors ranging from energy generation and transmission systems down to distribution systems. These actions generate huge science and engineering challenges and demands for expert knowledge in the field to create solutions for a sustainable energy system that is economically, environmentally, and socially viable while meeting high security requirements. This book covers these promising and dynamic areas of research and development, and presents contributions in sustainable energy systems planning, integration, and management. Moreover, the book elaborates on a variety of topics, ranging from design and planning of small- to large-scale energy systems to the operation and control of energy networks in different sectors, namely electricity, heat, and transport.

Datacenter Connectivity Technologies

Collaboration and Integration in Construction, Engineering, Management and Technology

Inconspicuous Consumption

The Non-Prophet's Guide™ to the End Times

Needs, Challenges, and Opportunities

Human Development Indices and Indicators

Agriculture & Food Systems To 2050: Global Trends, Challenges And Opportunities

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. This handbook is an authoritative, comprehensive reference on optical networks, the backbone of today's communication and information society. The book reviews the many underlying technologies that enable the global optical communications infrastructure, but also explains current research trends targeted towards continued capacity scaling and enhanced networking flexibility in support of an unabated traffic growth fueled by ever-emerging new applications. The book is divided into four parts: Optical Subsystems for Transmission and Switching, Core Networks, Datacenter and Super-Computer Networking, and Optical Access and Wireless Networks. Each chapter is written by world-renown experts that represent academia, industry, and international government and regulatory agencies. Every chapter provides a complete picture of its field, from entry-level information to a snapshot of the respective state-of-the-art technologies to emerging research trends, providing something useful for the novice who wants to get familiar with the field to the expert who wants to get a concise view of future trends.

Optical Fiber Telecommunications, Volume Eleven, covers the latest in optical fiber communications and their potential to penetrate and complement other forms of communication, such as wireless access, on-premises networks, interconnects and satellites. This updated edition of this classic, first published in 1979, examines opportunities for future optical fiber technology by presenting the latest advances on key topics, such as 5G wireless access, inter and intra data center communications, THz technologies, secure communications, and free space digital optical links. Topics of note include sections on foundries for widespread user access, designing photonic integrated circuits (PICs), monolithic and hybrid integration technologies, nanophotonics, and advanced and non-conventional data modulation formats. The traditional emphasis of achieving higher data rates and longer transmission distances are also addressed through chapters on space-division-multiplexing using multimode and multicore fibers, undersea cable systems, and reconfigurable networking. This book is an indispensable reference on the latest advances in key technologies for future fiber optic communications. It is suitable for university and industry researchers, graduate students, optical systems implementers, network operators, managers and investors. Updated edition presents the latest advances in optical fiber components, systems, subsystems and networks Written by leading authorities from academia and industry Gives a self-contained overview of specific technologies, covering both the state-of-the-art and future research challenges

Through the rise of big data and the internet of things, terrorist organizations have been freed from geographic and logistical confines and now have more power than ever before to strike the average citizen directly at home. This, coupled with the inherently asymmetrical nature of cyberwarfare, which grants great advantage to the attacker, has created an unprecedented national security risk that both governments and their citizens are woefully ill-prepared to face. Examining cyber warfare and terrorism through a critical and academic perspective can lead to a better understanding of its foundations and implications. Cyber Warfare and Terrorism: Concepts, Methodologies, Tools, and Applications is an essential reference for the latest research on the utilization of online tools by terrorist organizations to communicate with and recruit potential extremists and examines effective countermeasures employed by law enforcement agencies to defend against such threats. Highlighting a range of topics such as cyber threats, digital intelligence, and counterterrorism, this multi-volume book is ideally designed for law enforcement, government officials, lawmakers, security analysts, IT specialists, software developers, intelligence and security practitioners, students, educators, and researchers.

The Wiley Handbook of Educational Policy

Essential Topics Of Managing Information Systems

Intelligent Network Management and Control

A Decadal Strategy for Earth Observation from Space

The Datacenter as a Computer

Fire Officer: Principles and Practice includes Navigate Advantage Access

Proceedings of ICIDICI 2020

*This volume examines existing research documenting racial disproportionality and disparities in child welfare systems, the underlying factors that contribute to these phenomena and the harms that result at both the individual and community levels. It reviews multiple forms of interventions designed to prevent and reduce disproportionality, particularly in states and jurisdictions that have seen meaningful change. With contributions from authorities and leaders in the field, this volume serves as the authoritative volume on the complex issue of child maltreatment and child welfare. It offers a central source of information for students and practitioners who are seeking understanding on how structural and institutional racism can be addressed in public systems.*

*In recent years, investments by cloud companies in mega data centers and associated network infrastructure has created a very active and dynamic segment in the optical components and modules market. Optical interconnect technologies at high speed play a critical role for the growth of mega data centers, which flood the networks with unprecedented amount of data traffic. Datacenter Connectivity Technologies: Principles and Practice provides a comprehensive and in-depth look at the development of various optical connectivity technologies which are making an impact on the building of data centers. The technologies span from short range connectivity, as low as 100 meters with multi-mode fiber (MMF) links inside data centers, to long distances of hundreds of kilometers with single-mode fiber (SMF) links between data centers. This book is the first of its kind to address various advanced technologies connecting data centers. It represents a collection of achievements and the latest developments from well-known industry experts and academic researchers active in this field.*

*This book features a comprehensive foresight assessment, exploring the pressures — threats as well as opportunities — on the global agriculture & food systems between now and 2050. The overarching aim is to help readers understand the context, by analyzing global trends and anticipating change for better planning and constructing pathways from the present to the future by focusing on the right questions and problems. The book contextualizes the role of international agricultural research in addressing the complex challenges posed by UN 2030 Agenda and beyond, and identifies the decisions that scientific leaders, donors and policy makers need to take today, and in the years ahead, to ensure that a global population rising to nine billion or more combined with rising incomes and changing diets can be fed sustainably and equitably, in the face of the growing climate threats.*

*Juvenile Justice: A Social, Historical, and Legal Perspective, Fifth Edition is the most comprehensive reference on the juvenile justice system available*

*Innovation on Tap*

*Perception, Challenges and Opportunities*

*Emerging Trends in Intelligent Computing and Informatics*

*Optical Fiber Telecommunications*

*Sustainable Energy Systems Planning, Integration and Management*

*Human Development Report 2019*

*Data Science, Intelligent Information Systems and Smart Computing*

We live on a dynamic Earth shaped by both natural processes and the impacts of humans on their environment. It is in our collective interest to observe and understand our planet, and to predict future behavior to the extent possible, in order to effectively manage resources, successfully respond to threats from natural and human-induced environmental change, and capitalize on the opportunities that such knowledge can bring. By continuously monitoring and exploring Earth, developing a deep understanding of its evolving behavior, and characterizing the processes that shape and reshape the environment in which we live, we not only advance knowledge and basic discovery about our planet, but we further develop the foundation upon which benefits to society are built. Thriving on Our Changing Planet presents prioritized science, applications, and observations, along with related strategic and programmatic guidance, to support the U.S. civil space Earth observation program over the coming decade.

This book presents the proceedings of the 4th International Conference of Reliable Information and Communication Technology 2019 (IRICT 2019), which was held in Pulau Springs Resort, Johor, Malaysia, on September 22–23, 2019. Featuring 109 papers, the book covers hot topics such as artificial intelligence and soft computing, data science and big data analytics, internet of things (IoT), intelligent communication systems, advances in information security, advances in information systems and software engineering.

In the era of Industry 4.0, the world is increasingly becoming smarter as everything from mobile phones to cars to TVs connects with unique addresses and communication mechanisms. However, in order to enable the smart world to be sustainable, ICT must embark into energy efficient paradigms. Green ICT is a moving factor contributing towards energy efficiency by reducing energy utilization through software or hardware procedures. Role of IoT in Green Energy Systems presents updated research trends in green technology and the latest product and application developments towards green energy. Covering topics that include energy conservation and harvesting, renewable energy, and green and underwater internet of things, this essential reference book creates further awareness of smart energy and critically examines the contributions of ICT towards green technologies. IT specialists, researchers, academicians, and students in the area of energy harvesting and energy management, and/or those working towards green energy technologies, wireless sensor networks, and smart applications will find this monograph beneficial in their studies.

This comprehensive handbook provides an overview and update of the issues, theories, processes, and applications of the social science of population studies. The volume's 30 chapters cover the full range of conceptual, empirical, disciplinary, and applied approaches to the study of demographic phenomena. This book is the first effort to assess the entire field since Hauser and Duncan's 1959 classic, The Study of Population. The chapter authors are among the leading contributors to demographic scholarship over the past four decades. They represent a variety of disciplines and theoretical perspectives as well as interests in both basic and applied research.

Data Intelligence and Cognitive Informatics

Urban Design Patterns for the Future

Beyond Income, Beyond Averages, Beyond Today - Inequalities in Human Development in the 21st Century

Evaluating Demand Response Opportunities for Data Centers

Bible Prophecy for Everyone

Multiple Perspectives on College Students

Basic Statistics with R

**PROSE Award Finalist 2019 Association of American Publishers Award for Professional and Scholarly Excellence As a follow up to his widely acclaimed Sustainable Urbanism, this new book from author Douglas Farr embraces the**

idea that the humanitarian, population, and climate crises are three facets of one interrelated human existential challenge, one with impossibly short deadlines. The vision of Sustainable Nation is to accelerate the pace of progress of human civilization to create an equitable and sustainable world. The core strategy of Sustainable Nation is the perfection of the design and governance of all neighborhoods to make them unique exemplars of community and sustainability. The tools to achieve this vision are more than 70 patterns for rebellious change written by industry leaders of thought and practice. Each pattern represents an aspirational, future-oriented ideal for a key aspect of a neighborhood. At once an urgent call to action and a guidebook for change, Sustainable Nation is an essential resource for urban designers, planners, and architects. This book gathers papers presented at the 11th International Conference on Construction in the 21st Century, held in London in 2019. Bringing together a diverse group of government agencies, academics, professionals, and students, the book addresses issues related to construction safety, innovative technologies, lean and sustainable construction, international construction, improving quality and productivity, and innovative materials in the construction industry. In addition, it highlights international collaborations between various disciplines in the areas of construction, engineering, management, and technology. The book demonstrates that, as the industry moves forward in an ever-complex global economy, multi-national collaboration is crucial, and its future growth will undoubtedly depend on international teamwork and alliances.

Human Development Indices and Indicators: 2018 Statistical Update is being released to ensure consistency in reporting on key human development indices and statistics. It provides a brief overview of the state of human development—snapshots of current conditions as well as long-term trends in human development indicators. It includes a full statistical annex of human development composite indices and indicators across their various dimensions. This update includes the 2017 values and ranking for the HDI and other composite indices as well as current statistics in key areas of human development for use by policymakers, researchers and others in their analytical, planning and policy work. In addition to the standard HDR tables, statistical dashboards are included to draw attention to the relationship between human well-being and five topics: quality of human development, life-course gender gaps, women's empowerment, environmental sustainability and socioeconomic sustainability. Accompanying the statistical annex is an overview of trends in human development, highlighting the considerable progress, but also the persistent deprivations and disparities.

Master's Thesis from the year 2020 in the subject Business economics - Miscellaneous, grade: 1,7, University of Regensburg (International Real Estate Business School, Institut für Immobilienwirtschaft), course: Immobilien, language: English, abstract: The main part of this thesis will be a comprehensive empirical analysis of the performance, risks and portfolio benefits of data center REITs relative to other commercial REIT sectors and major financial asset classes. The focus will be on the comparison of REIT sectors respectively property types, as this topic has rarely been dealt with in literature so far. Following research questions were formulated: How do investments in data center REITs compare to investment in other REIT sectors and major financial asset classes in terms of risk and return? How do data center REITs act in a portfolio and which benefits can be gained from including them in a portfolio of different REITs respectively different financial assets? Due to the facts that data center REITs specialize in in a property type, which requires tremendous specific knowledge and the simultaneously very supporting settings stated above, the following hypotheses will be examined: Data center REITs achieved higher returns but also higher risk than other REIT sectors and financial assets in the past. Data center REITs play a substantial role in a portfolio, that can be attributed in particular to the outperformance of other REIT sectors and financial assets.

Concepts, Methodologies, Tools, and Applications

Policy & Politics in Nursing and Health Care - E-Book

Principles of Information Systems

Essential Knowledge for the Profession

Principles and Practice

Intelligent Security, Multi-criteria Optimization, Cloud Computing, Internet of Vehicles, Intelligent Radio

Proceedings of the 11th International Conference on Construction in the 21st Century, London 2019

Advanced Practice Nursing:Essential Knowledge for the Profession, Fourth Edition is a core advanced practice text used in both Master's Level and DNP programs.

This book provides readers with guidelines for designing integrated multi-MHz-switching converters for input voltages/system supplies up to 50V or higher. Coverage includes converter theory, converter architectures, circuit design, efficiency, sizing of passives, technology aspects, etc. The author discusses new circuit designs, new architectures and new switching concepts, including dead-time control and soft-switching techniques that overcome current limitations of these converters. The discussion includes technology related issues and helps readers to choose the right technology for fast-switching converters. This book discusses benefits and drawbacks in terms of integration, size and cost, efficiency and complexity, and enables readers to make trade-offs in design, given different converter parameters. Describes a study for increasing switching frequencies up to 30 MHz at input voltages up to 50V or higher in the scaling of the size of switching converter passives; Analyzes various buck converter implementations and shows that a preference due to higher efficiency depends on the operating point, on the available switch technologies, and on the implementation of the high-side supply generation; Describes an efficiency model based on a four-phase model, which enables separation of loss causes and loss locations.

This book efficiently contributes to our understanding of the interplay between data, technology and communicative practice on the one hand, and democratic participation on the other. It addresses the emergence of proactive data activism, a new sociotechnical phenomenon in the field of action that arises as a reaction to massive datafication, and makes affirmative use of data for advocacy and social change. By blending empirical observation and in-depth qualitative interviews, Gutierrez brings to the fore a debate about the social uses of the data infrastructure and examines precisely how people employ it, in combination with other technologies, to collaborate and act for social change.

The book offers a multidisciplinary investigation into the economic, technological, environmental, and social impacts of Industry 4.0 technology that ensures inclusive and sustainable growth development of regions and countries. Along with identifying new opportunities that new technology provides for inclusive growth, the book aims to propose theoretical substantiation and develop economic, institutional, organizational, and information mechanisms that aid to reduce and eliminate the potential economic, social, and environmental risks. A broad multidisciplinary approach integrating research capabilities of economic and administrative sciences, artificial intelligence and computer sciences, pedagogy and linguistics, latest findings in the above mentioned scientific areas, as well as empirical evidence and pilot innovative research projects conducted by the contributors, allowed them to draw conclusions and develop recommendations for achieving inclusive growth in industrial and agricultural production, innovation and investment activities, management and environment protection, healthcare and education associated with the use of new technology. The contributors hope that empirical materials, innovative developments, and suggestions inspire scientific research, encourage applied studies, and supplement training programs in economic, administrative, social, and computer sciences at the advanced universities and research institutions, in the post-Soviet territory, in particular.

Stories of Entrepreneurship from the Cotton Gin to Broadway's Hamilton

Data Activism and Social Change

Data-Driven Development

The Environment-Conflict Nexus

Springer Handbook of Optical Networks

Advances in Computer Science for Engineering and Education

Juvenile Justice: A Social, Historical, and Legal Perspective

This book discusses new cognitive informatics tools, algorithms and methods that mimic the mechanisms of the human brain which lead to an impending revolution in understating a large amount of data generated by various smart applications. The book is a collection of peer-reviewed best selected research papers presented at the International Conference on Data Intelligence and Cognitive Informatics (ICDI 2020), organized by SCAD College of Engineering and Technology, Tirunelveli, India, during 8-9 July 2020. The book includes novel work in data intelligence domain which combines with the increasing efforts of artificial intelligence, machine learning, deep learning and cognitive science to study and develop a deeper understanding of the information processing systems.

Develop an understanding of the core principles of information systems (IS) and how these principles make a difference in today's business environment with Stair/Reynolds' PRINCIPLES OF INFORMATION SYSTEMS, 14E. Completely reorganized for clarity and focus, this fresh new edition provides engaging new chapter opening cases and a new chapter on AI and automation. You explore the challenges and risks of cybercrime, hacking, internet of things, and artificial intelligence as you examine the latest IS research and learn from memorable examples. You can even maximize your employability as you learn how to use IS to increase profits and reduce costs in organizations while studying the latest developments in big data, business intelligence, cloud computing, e-commerce, enterprise systems, mobile computing, strategic planning, and systems development. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Investigates how data production and consumption territorialize the physical landscape filtered through Ireland's role in global communications and, as told by the Irish Pavilion at the 2021 Venice Architecture Biennale, features an installation that focuses on the materiality of data infrastructure in space. As our everyday lives become increasingly entangled with data technologies, the book addresses the utopian fantasy that surrounds the Cloud, as transcending physical presence or resourcing. By bringing the physical infrastructure around data, and its impact on the environment under the spotlight, it hopes to reframe how we understand data production and highlight the myth that information technologies are hidden and without major material manifestations on the landscape. The context for the book is Ireland which has a significant historical role in the evolution of global communications and data infrastructure. In 1866, the world's first transatlantic telegraph cable landed on the West coast of Ireland. In 1901, the inventor of the radio Guglielmo Marconi transmitted some of the world's first wireless radio messages from Ireland across the Atlantic Ocean to Newfoundland. Today, Dublin has overtaken London as the data centre hub of Europe, hosting 25% of all available European server space. And by the year 2027, data centres are forecast to consume a third of Ireland's total electricity demand. The book aims to raise awareness around the hardware of the global internet and Cloud services, which is interwoven with the Irish landscape—made manifest through the vast constellation of data centres, fibre optic cable networks, and energy grids that have come to populate its cities and suburbs over recent decades. The publication accompanies and supports Entanglement, the Irish Pavilion at the 17th Venice Architecture Biennale by archiving the production of the pavilion filtered through a series of poetic excerpts that describe the form, components, content and furniture that make up the installation. At the same time the book is conceived as more than just a catalog by positioning some of the cultural and spatial implications of data technologies in Ireland within a more universal context through contributions by ANNEX, the team selected to produce the pavilion, as well as invited contributors from the disciplines of Media Theory; Journalism; Computer Science, Geography; History and Architecture.

The management and control of networks can no longer be envisaged without the introduction of artificial intelligence at all stages. Intelligent Network Management and Control deals with topical issues related mainly to intelligent security of computer networks, deployment of security services in SDN (software-defined networking), optimization of networks using artificial intelligence techniques and multi-criteria optimization methods for selecting networks in a heterogeneous environment. This book also focuses on selecting cloud computing services, intelligent unloading of calculations in the context of mobile cloud computing, intelligent resource management in a smart grid-cloud system for better energy efficiency, new architectures for the Internet of Vehicles (IoV), the application of artificial intelligence in cognitive radio networks and intelligent radio input to meet the on-road communication needs of autonomous vehicles.

Data in the Irish Landscape

Integrated High-Vin Multi-MHz Converters

Environmental Politics for a Changing World

Cyber Warfare and Terrorism: Concepts, Methodologies, Tools, and Applications

Handbook of Population

The Environmental Impact You Don't Know You Have

Designing Warehouse-Scale Machines, Third Edition

This edited collection explores diverse perspectives about today's college students from a variety of higher education stakeholders - including faculty, researchers, policymakers, administrators, parents, and students themselves. All too often, those concerned with higher education make assumptions based on outdated information; the voices in this volume provide a grounded and real understanding of college students and explore how we might better support them in our colleges and universities. Each section includes a series of essays, with a culminating chapter written by scholars who analyze, contextualize, and ground these perspectives in theory. Multiple Perspectives on College Students brings current data and experience to light in a way that helps readers understand the needs and opportunities for supporting all college students for success.

This book describes warehouse-scale computers (WSCs), the computing platforms that power cloud computing and all the great web services we use every day. It discusses how these new systems treat the datacenter itself as one massive computer designed at warehouse scale, with hardware and software working in concert to deliver good levels of internet service performance. The book details the architecture of WSCs and covers the main factors influencing their design, operation, and cost structure, and the characteristics of their software base. Each chapter contains multiple real-world examples, including detailed case studies and previously unpublished details of the infrastructure used to power Google's online services. Targeted at the architects and programmers of today's WSCs, this book provides a great foundation for those looking to innovate in this fascinating and important area, but the material will also be broadly interesting to those who just want to understand the infrastructure powering the internet. The third edition reflects four years of advancements since the previous edition and nearly doubles the number of pictures and figures. New topics range from additional workloads like video streaming, machine learning, and public cloud to specialized silicon accelerators, storage and network building blocks, and a revised discussion of data center power and cooling, and uptime. Further discussions of emerging trends and opportunities ensure that this revised edition will remain an essential resource for educators and professionals working on the next generation of WSCs.

Basic Statistics with R: Reaching Decisions with Data provides an understanding of the processes at work in using data for results. Sections cover data collection and discuss exploratory analyses, including visual graphs, numerical summaries, and relationships between variables - basic probability, and statistical inference - including hypothesis testing and confidence intervals. All topics are taught using real-data drawn from various fields, including economics, biology, political science and sports. Using this wide variety of motivating examples allows students to directly connect and make statistics essential to their field of interest, rather than seeing it as a separate and ancillary knowledge area. In addition to introducing students to statistical topics using real data, the book provides a gentle introduction to coding, having the students use the statistical language and software R. Students learn to load data, calculate summary statistics, create graphs and do statistical inference using R with either Windows or Macintosh machines. Features real-data to give students an engaging practice to connect with their areas of interest Evolves from basic problems that can be worked by hand to the elementary use of opensource R software Offers a direct, clear approach highlighted by useful visuals and examples

The aim of this book is to demonstrate how environmental factors have caused an evolution in the landscape of national security since the end of the Cold War. Through relevant case studies, the scope of the problem on the national security landscape due to environmental stressors is illuminated, examined, and synthesized with climate-related data. Human variables such as governance, GDP, and vulnerability are taken into account, and are compared against environmental factors to more accurately determine the causative agents of regional conflicts which threaten national security. These case studies comprise the majority of the text, and they show how individual conflicts are uniquely influenced by environmental stress with variations from situation to situation. This book will be of interest to government and military professionals, and may serve as a resource for college courses in the areas of military geography, international affairs, and sustainability studies.

States of Entanglement

Information and Communications for Development 2018

New Technology for Inclusive and Sustainable Growth

Reaching Decisions with Data

Power, Perspectives, and Practice

Data center demand response is a solution to a problem that is just recently emerging: Today's energy system is undergoing major transformations due to the increasing shares of intermittent renewable power sources as solar and wind. As the power grid physically requires but traditionally, power generation plants with short ramp-up times were activated to avoid grid imbalances. Additionally, so-called demand response schemes may incentivize power consumers to manipulate their planned power profile in order to activate hidden sources of flexibility suitable candidate for demand response as it is continuously growing and relies on highly automated processes. The presented thesis exceeds the related work by creating a framework for modeling data center demand response on a high level of abstraction that allows subsum generic architecture of demand response enabled data centers this is formalized through a micro-economics inspired optimization framework that generates technical power flex functions and an associated cost and market skeleton. This is evaluated through a simulation based Germany, implementing two power management strategies, namely temporal workload shifting and manipulating the CPU frequency. The flexibility extracted is then monetized on two German electricity markets. As a result, in 2014 this data center would have achieved the large to dynamic EPEX prices without changing their power profile. Through demand response they might have created an additional gross benefit of 4% of the power bill on the secondary reserve market. In a sensitivity analysis, however, it could be shown that these results are largely agreements and job heterogeneity. The results show that even though concrete simulations can evaluate demand response activities of individual data centers, the proposed modeling framework helps to understand their relevance from a system-wide viewpoint.

The fourth edition of Fire Officer: Principles and Practice was significantly updated and reorganized to better serve the Fire Officer I and Fire Officer II. The content meets and exceeds the job performance requirements for Fire Officer I and II in the 2020 Edition of NFPA 1021, S. Qualifications. The new edition places an emphasis on the application of leadership traits and management theories, common leadership and management challenges, and how leadership is used to meet objectives. The basic principles and methods of Community Risk Reduction are has two distinct sections: Section One includes eight chapters, which set the foundation for Fire Officer I knowledge and understanding. Section Two comprises six chapters, which encompass the higher level competencies required for Fire Officer II. This new organization will allow and II course(s) exactly the way you wish.

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