

The Cisco IoT System

This book focuses on the fundamentals of blockchain technology along with the means and methods of its integration with Internet of Things (IoT). The book allows the reader to have a deeper understanding of blockchain technology, IoT and various application areas wherein both technologies can be implemented. The book serves the purpose of providing knowledge about the fundamentals of blockchain and IoT to a common reader along with allowing a research scholar to identify some futuristic problem areas that emerge from the convergence of both technologies. Furthermore, the authors discuss relevant application areas such as smart city, e-healthcare, smart travel, etc. throughout the course of the book. The book also talks through a few case studies illustrating the implementation and benefits of using blockchain and IoT. Provides a comprehensive view of blockchain technology and its integration with IoT; Facilitates in having a valuable understanding of various application areas pertaining to blockchain and IoT; Assists the reader in exploring new research areas wherein blockchain and IoT can find their applicability based upon their list of benefits.

Master powerful techniques and approaches for securing IoT systems of all kinds—current and emerging Internet of Things (IoT) technology adoption is accelerating, but IoT presents complex new security challenges. Fortunately, IoT standards and standardized architectures are emerging to help technical professionals systematically harden their IoT environments. In *Orchestrating and Automating Security for the Internet of Things*, three Cisco experts show how to safeguard current and future IoT systems by delivering security through new NFV and SDN architectures and related IoT security standards. The authors first review the current state of IoT networks and architectures, identifying key security risks associated with nonstandardized early deployments and showing how early adopters have attempted to respond. Next, they introduce more mature architectures built around NFV and SDN. You'll discover why these lend themselves well to IoT and IoT security, and master advanced approaches for protecting them. Finally, the authors preview future approaches to improving IoT security and present real-world use case examples. This is an indispensable resource for all technical and security professionals, business security and risk managers, and consultants who are responsible for systems that incorporate or utilize IoT devices, or expect to be responsible for them.

- Understand the challenges involved in securing current IoT networks and architectures
- Master IoT security fundamentals, standards, and modern best practices
- Systematically plan for IoT security
- Leverage Software-Defined Networking (SDN) and Network Function Virtualization (NFV) to harden IoT networks
- Deploy the advanced IoT platform, and use MANO to manage and orchestrate virtualized network functions
- Implement platform security services including identity, authentication, authorization, and accounting
- Detect threats and protect data in IoT environments
- Secure IoT in the context of remote access and VPNs
- Safeguard the IoT platform itself
- Explore use cases ranging from smart cities and advanced energy systems to the connected car
- Preview evolving concepts that will shape the future of IoT security

Handbook of System Safety and Security: Cyber Risk and Risk Management, Cyber Security, Adversary Modeling, Threat

Analysis, Business of Safety, Functional Safety, Software Systems, and Cyber Physical Systems presents an update on the world's increasing adoption of computer-enabled products and the essential services they provide to our daily lives. The tailoring of these products and services to our personal preferences is expected and made possible by intelligence that is enabled by communication between them. Ensuring that the systems of these connected products operate safely, without creating hazards to us and those around us, is the focus of this book, which presents the central topics of current research and practice in systems safety and security as it relates to applications within transportation, energy, and the medical sciences. Each chapter is authored by one of the leading contributors to the current research and development on the topic. The perspective of this book is unique, as it takes the two topics, systems safety and systems security, as inextricably intertwined. Each is driven by concern about the hazards associated with a system's performance. Presents the most current and leading edge research on system safety and security, featuring a panel of top experts in the field Includes several research advancements published for the first time, including the use of 'goal structured notation' together with a 'judgment calculus' and their automation as a 'rule set' to facilitate systems safety and systems security process execution in compliance with existing standards Presents for the first time the latest research in the field with the unique perspective that systems safety and systems security are inextricably intertwined Includes coverage of systems architecture, cyber physical systems, tradeoffs between safety, security, and performance, as well as the current methodologies and technologies and implantation practices for system safety and security

15 Hours of Expert Video Instruction Overview By 2020, more than 50 billion "Internet of Things" (IoT) devices will be connected to the Internet. Those connections are already enabling radically new business models, capabilities, and applications, making IoT knowledge indispensable for executives and technologists alike. The IoT Fundamentals LiveLessons video training course offers 10 hours of expert instruction on all the essentials'Äîfrom sensors and connectivity to data analytics and key industry applications. Leading Cisco IoT experts Robert Barton and Jerome Henry illuminate core IoT technologies, components, and the building blocks of IoT solutions. They explore IoT network architecture and security considerations, show how to leverage the power of immense IoT data flows, and introduce important IoT applications in several key vertical markets. Barton and Henry's 19 well-organized lessons teach through real examples, easy-to-follow animations, and detailed audio explanations. Whatever your role in planning for, using, or building IoT technologies, IoT Fundamentals LiveLessons will help you start fast'Äîand succeed. Coverage includes What IoT is and how it is transforming businesses Common IoT challenges, building blocks, and architectures Core IoT networking protocols, including the 802.15.4 and LPWA families Models for protecting security and integrity in IoT networks Simple, low-cost IoT networks for homes and small businesses IPv6 adaptations for low power and lossy IoT networks IoT management protocols, including CoAP, MQTT, and SCADA Moving processing to the edge and to the "fog" layer Using data analytics to maximize the value of IoT systems Analyzing IoT data with Hadoop, Kafka, Spark, and the Hadoop ecosystem Industry-specific techniques, smart objects,

protocols, and analytic techniques IoT for utilities, the smart grid, and energy efficiency IoT for connected and self-driving cars, mass transit, and cargo transportation IoT for manufacturing: reducing cost and accelerating delivery IoT for smart and connected cities: lighting, parking, and public safety IoT for safer, more efficient oil/gas production and mining Skill Level All levels Learn How To Plan, organize, build, and deploy end-to-end IoT solutions Navigate today's IoT product marketplace Use maturing IoT technologies to solve many business and technical problems Make sense of the full IoT protocol stack, from 802.15.4 and LPWA to IPv6 adaptations and management Archite...

Intelligent Systems for Social Good

Proceedings of SOHOMA 2021

The Technical Foundations of IoT

Security in the Private Cloud

Internet-of-Things (IoT) Systems

The Fortune at the Bottom of the Pyramid

Blockchain & The Smart Cities

This book systematically examines and quantifies industrial problems by assessing the complexity and safety of large systems. It includes chapters on system performance management, software reliability assessment, testing, quality management, analysis using soft computing techniques, management analytics, and business analytics, with a clear focus on exploring real-world business issues. Through contributions from researchers working in the area of performance, management, and business analytics, it explores the development of new methods and approaches to improve business by gaining knowledge from bulk data. With system performance analytics, companies are now able to drive performance and provide actionable insights for each level and for every role using key indicators, generate mobile-enabled scorecards, time series-based analysis using charts, and dashboards. In the current dynamic environment, a viable tool known as multi-criteria decision analysis (MCDA) is increasingly being adopted to deal with complex business decisions. MCDA is an important decision support tool for analyzing goals and providing optimal solutions and alternatives. It comprises several distinct techniques, which are implemented by specialized decision-making packages. This book addresses a number of important MCDA methods, such as DEMATEL, TOPSIS, AHP, MAUT, and Intuitionistic Fuzzy MCDM, which make it possible to derive maximum utility in the area of analytics. As such, it is a valuable resource for researchers and academicians, as well as practitioners and business experts.

This book is a collection of the best research papers presented at the First World Conference on Internet of Things: Applications & Future (ITAF 2019), Sponsored by GR Foundation and French University in Egypt, held at Triumph Luxury Hotel, Cairo, Egypt, on 14-15 October 2019. It includes innovative works from leading researchers,

innovators, business executives, and industry professionals that cover the latest advances in and applications for commercial and industrial end users across sectors within the emerging Internet of Things ecosphere. It addresses both current and emerging topics related to the Internet of Things such as big data research, new services and analytics, Internet of Things (IoT) fundamentals, electronic computation and analysis, big data for multi-discipline services, security, privacy and trust, IoT technologies, and open and cloud technologies.

Collectively, the world's billions of poor people have immense untapped buying power. Prahalad's global bestseller shows why companies can't afford to ignore "Bottom of the Pyramid" (BOP) markets. Now available in paperback, it offers a blueprint for driving the radical innovation companies will need to profit in emerging markets, and using those innovations to become more competitive everywhere.

Management of IoT Open Data Projects in Smart Cities demonstrates a key project management methodology for the implementation of Smart Cities projects: Principles and Regulations for Smart Cities (PaRSC). This methodology adopts a basis in classic Scrum soft management methods with carefully considered expansions. These include design principals for high-level architecture design and recommendations for design at the level of project teams. This approach enables the deployment of rule-based linguistic models for IoT project management, supporting the design of high-level architecture and providing rules for Scrum Smart Cities team. After reading this book, the reader will have a thorough grounding in IoT nodes and methods of their design, the acquisition and use of open data, and the use of project management methods to collect open data and build business models based on them. Presents a unified method for smart urban interventions based on the adjustment of Scrum to the complexity of smart city projects Establishes a key model for intelligent systems verification in Smart Cities projects Demonstrates how practitioners can gain from the adoption of rule-based linguistic models

Architectures, Algorithms, Methodologies

Green IT Engineering: Social, Business and Industrial Applications

Cyber Risk and Risk Management, Cyber Security, Threat Analysis, Functional Safety, Software Systems, and Cyber Physical Systems

Internet of Things (IoT) Fundamentals

Proceedings of the 2019 Future of Information and Communication Conference (FICC), Volume 1

14th International Joint Conference, ICETE 2017, Madrid, Spain, July 24-26, 2017, Revised Selected Paper

Cloud IoT Systems for Smart Agricultural Engineering

This comprehensive handbook serves as a professional reference and practitioner's guide to today's most complete and concise view of private cloud security. It explores practical solutions to a wide range of private cloud computing security issues. The knowledge imparted will enable readers to determine whether the private cloud security

solution is appropriate for their organization from a business and technical perspective, to select the appropriate cloud security model, and to plan and implement a cloud security adoption and migration strategy.

The book discusses the evolution of future generation technologies through Internet of Things (IoT) in the scope of Artificial Intelligence (AI). The main focus of this volume is to bring all the related technologies in a single platform, so that undergraduate and postgraduate students, researchers, academicians, and industry people can easily understand the AI algorithms, machine learning algorithms, and learning analytics in IoT-enabled technologies. This book uses data and network engineering and intelligent decision support system-by-design principles to design a reliable AI-enabled IoT ecosystem and to implement cyber-physical pervasive infrastructure solutions. This book brings together some of the top IoT-enabled AI experts throughout the world who contribute their knowledge regarding different IoT-based technology aspects.

With the rise of virtual reality, augmented reality, the internet of things and more, customers are more engaged, more involved, and easier to reach than ever; while being inundated with increasing amounts of marketing material. This straightforward guide takes you through these new technologies and shows how to leverage them to reach new markets.

System Assurances: Modeling and Management updates on system assurance and performance methods using advanced analytics and understanding of software reliability growth modeling from today's debugging team's point-of-view, along with information on preventive and predictive maintenance and the efficient use of testing resources. The book presents the rapidly growing application areas of systems and software modeling, including intelligent synthetic characters, human-machine interface, menu generators, user acceptance analysis, picture archiving and software systems. Students, research scholars, academicians, scientists and industry practitioners will benefit from the book as it provides better insights into modern related global trends, issues and practices. Provides software reliability modeling, simulation and optimization Offers methodologies, tools and practical applications of reliability modeling and resources allocation Presents cost modeling and optimization associated with complex systems Implement New Business Models, Disrupt Competitors, Transform Your Industry Concepts, Methodologies, Tools, and Applications

International Conference on Communciation, Management and Information Technology (ICCMIT 2016, Cosenza, Italy, 26-29 April 2016)

Lessons From Singapore, the World's Smartest Digital Nation

Networking Technologies, Protocols, and Use Cases for the Internet of Things

Modeling and Management

This book presents a remarkable collection of chapters that cover a wide range of topics in the areas of information and communication technologies and their real-world applications. It gathers the Proceedings of the Future of Information and Communication Conference 2019 (FICC 2019), held in San Francisco, USA from March 14 to 15, 2019. The conference attracted a total of 462 submissions from pioneering researchers, scientists, industrial engineers, and students from all around the world. Following a double-blind peer review process, 160 submissions (including 15 poster papers) were ultimately selected for inclusion in these proceedings. The papers highlight relevant trends in, and the latest research on: Communication, Data Science, Ambient Intelligence, Networking, Computing, Security, and the Internet of Things. Further, they address all aspects of Information Science and communication technologies, from classical to intelligent, and both the theory and applications of the latest technologies and methodologies. Gathering chapters that discuss state-of-the-art intelligent methods and techniques for solving real-world problems, along with future research directions, the book represents both an interesting read and a valuable asset.

This book constitutes the joint refereed proceedings of the 19th International Conference on Next Generation Teletraffic and Wired/Wireless Advanced Networks and Systems, NEW2AN 2019, and the 12th Conference on Internet of Things and Smart Spaces, ruSMART 2019. The 66 revised full papers presented were carefully reviewed and selected from 192 submissions. The papers of NEW2AN address various aspects of next-generation data networks, with special attention to advanced wireless networking and applications. In particular, they deal with novel and innovative approaches to performance and efficiency analysis of 5G and beyond systems, employed game-theoretical formulations, advanced queuing theory, and stochastic geometry, while also covering the Internet of Things, cyber security, optics, signal processing, as well as business aspects. ruSMART 2019, provides a forum for academic and industrial researchers to discuss new ideas and trends in the emerging areas. The 12th conference on the Internet of Things and Smart Spaces,

ruSMART 2019, provides a forum for academic and industrial researchers to discuss new ideas and trends in the emerging areas.

Build secure IoT devices and networks for a wide range of industries This practical guide fully explains the technology behind the Internet of Things, machine-to-machine communication, and automation. Written by a team of experts from leading firms, Design of Secure IoT Systems: A Practical Approach Across Industries covers all aspects of system architecture, protocols, requirements, and design. You will discover how to design and engineer IoT devices and networks with trust and security. The book features industrial automation case studies and simulation examples from a wide range of fields. Coverage includes: IoT architecture and technology fundamentals Connected machines and M2M communication Network protocols and architecture IoT hardware design fundamentals WAN, IP, and MAC configuration IoT data systems design Designing with trust and security Data security policies and regulations Cybersecurity threats and risks Automation Use cases across industries Industry compliance and standards

This book constitutes the refereed proceedings of the 14th International Joint Conference on E-Business and Telecommunications, ICETE 2017, held in Madrid, Spain, in July 2017. ICETE is a joint international conference integrating four major areas of knowledge that are divided into six corresponding conferences: International Conference on Data Communication Networking, DCNET; International Conference on E-Business, ICE-B; International Conference on Optical Communication Systems, OPTICS; International Conference on Security and Cryptography, SECRIPT; International Conference on Signal Processing and Multimedia, SIGMAP; International Conference on Wireless Information Systems, WINSYS. The 17 full papers presented were carefully reviewed and selected from 195 submissions. The papers cover the following key areas of information and communication technologies, including data communication and networking, e-business and telecommunications: data communication networking; e-business; optical communication systems; security and cryptography; signal processing and multimedia applications; wireless networks and mobile systems.

Internet of Things, Smart Spaces, and Next Generation Networks and Systems

Building the Internet of Things

Trends in Information Technology, Communications Engineering, and Management

Ambient Intelligence – Software and Applications –,10th International Symposium on Ambient Intelligence

Management of IOT Open Data Projects in Smart Cities

Service Oriented, Holonic and Multi-agent Manufacturing Systems for Industry of the Future

New Trends in Intelligent Information and Database Systems

Communication, Management and Information Technology contains the contributions presented at the International Conference on Communication, Management and Information Technology (ICCMIT 2016, Cosenza, Italy, 26-29 April 2016, organized by the Universal Society of Applied Research (USAR). The book aims at researchers, scientists, engineers, and scholar students interested or involved in Computer Science and Systems, Communication, and Management.

This book includes extended and revised selected papers from the 9th International Conference on Smart Cities and Green ICT Systems, SMARTGREENS 2020, and the 6th International Conference on Vehicle Technology and Intelligent Transport Systems, VEHITS 2020, held in Prague, Czech Republic, in May 2020. The 30 full papers presented during SMARTGREENS and VEHITS 2020 were carefully reviewed and selected from the 117 submissions. The papers present research on advances and applications in the fields of smart cities, electric vehicles, sustainable computing and communications, energy aware systems and technologies, intelligent vehicle technologies, intelligent transport systems and infrastructure, connected vehicles.

Connecting Networks v6 Companion Guide is the official supplemental textbook for the Connecting Networks version 6 course in the Cisco Networking Academy CCNA Routing and Switching curriculum. The Companion Guide is designed as a portable desk reference to use anytime, anywhere to reinforce the material from the course and organize your time. The book 's features help you focus on important concepts to succeed in this course: Chapter Objectives – Review core concepts by answering the focus questions listed at the beginning of each chapter. Key Terms – Refer to the lists of networking vocabulary introduced and highlighted in context in each chapter. Glossary – Consult the comprehensive Glossary with 347 terms. Summary of Activities and Labs – Maximize your study time with this complete list of all associated practice exercises at the end of each

chapter. Check Your Understanding – Evaluate your readiness with the end-of-chapter questions that match the style of questions you see in the online course quizzes. The answer key explains each answer. How To – Look for this icon to study the steps you need to learn to perform certain tasks. Interactive Activities – Reinforce your understanding of topics with dozens of exercises from the online course identified throughout the book with this icon. Packet Tracer Activities – Explore and visualize networking concepts using Packet Tracer exercises interspersed throughout the chapters and provided in the accompanying Labs & Study Guide book. Videos – Watch the videos embedded within the online course. Hands-on Labs – Work through all the course labs and additional Class Activities that are included in the course and published in the separate Labs & Study Guide.

Digital Nations and Smart Cities are rapidly evolving, and the resulting digitalization is leading to several benefits while also exposing the citizens to unforeseen risks. Technologies like Blockchain are enabling risk management for secured automation. The book takes a close look at various paradigms of Smart cities ' & Digital Nations ' Governance while relating to the application of these principles in real life through the case study of Singapore, which is one of the world ' s top 3 densest, but also, is one of the most sustainable cities. This book will be a useful resource for professionals, consultants, government servants, and students who wish to come to grip with the emerging technologies and to understand their applications in governance and play an active role in community-building activities. The book explores the emergence, evolution, and adoption of advanced digital technologies like IoT, Analytics and Blockchain for improved governance, sustainable development, and better quality of life and happiness for citizens across the world.

The Rise of Fog Computing in the Digital Era

Emerging Topics in Hardware Security

Internet of Things—Applications and Future

Shaping the Future of ICT

Proceedings of ITAF 2019

Security and Privacy in Communication Networks

System Assurances

This book constitutes the refereed conference proceedings of the 12th International Conference on Security and Privacy in Communications Networks, SecureComm 2016, held in Guangzhou, China, in October 2016. The 32 revised full papers and 18 poster papers were carefully reviewed and selected from 137 submissions. The papers

are organized thematically starting with mobile and network security, followed by applied cryptography, web security and privacy, system security, hardware security. The volume also includes papers from the ATCS workshop and the poster session.

This book covers essential topics in the architecture and design of Internet of Things (IoT) systems. The authors provide state-of-the-art information that enables readers to design systems that balance functionality, bandwidth, and power consumption, while providing secure and safe operation in the face of a wide range of threat and fault models. Coverage includes essential topics in system modeling, edge/cloud architectures, and security and safety, including cyberphysical systems and industrial control systems.

This book comprehensively describes an end-to-end Internet of Things (IoT) architecture that is comprised of devices, network, compute, storage, platform, applications along with management and security components. It is organized into five main parts, comprising of a total of 11 chapters. Part I presents a generic IoT reference model to establish a common vocabulary for IoT solutions. This includes a detailed description of the Internet protocol layers and the Things (sensors and actuators) as well as the key business drivers to realize the IoT vision. Part II focuses on the IoT requirements that impact networking protocols and provides a layer-by-layer walkthrough of the protocol stack with emphasis on industry progress and key gaps. Part III introduces the concept of Fog computing and describes the drivers for the technology, its constituent elements, and how it relates and differs from Cloud computing. Part IV discusses the IoT services platform, the cornerstone of the solution followed by the Security functions and requirements. Finally, Part V provides a treatment of the topic of connected ecosystems in IoT along with practical applications. It then surveys the latest IoT standards and discusses the pivotal role of open source in IoT. “Faculty will find well-crafted questions and answers at the end of each chapter, suitable for review and in classroom discussion topics. In addition, the material in the book can be used by engineers and technical leaders looking to gain a deep technical understanding of IoT, as well as by managers and business leaders looking to gain a competitive edge and understand innovation opportunities for the future.” Dr. Jim Spohrer, IBM “This text provides a very compelling study of the IoT space and achieves a very good balance between engineering/technology focus and business context. As such, it is highly-recommended for anyone interested in this rapidly-expanding field and will have broad appeal to a wide cross-section of readers, i.e., including engineering professionals, business analysts, university students, and professors.” Professor Nasir Ghani, University of South Florida

This book provides an overview of emerging topics in the field of hardware security, such as artificial intelligence and quantum computing, and highlights how these technologies can be leveraged to secure hardware and assure electronics supply chains. The authors are experts in emerging technologies, traditional

hardware design, and hardware security and trust. Readers will gain a comprehensive understanding of hardware security problems and how to overcome them through an efficient combination of conventional approaches and emerging technologies, enabling them to design secure, reliable, and trustworthy hardware. 19th International Conference, NEW2AN 2019, and 12th Conference, ruSMART 2019, St. Petersburg, Russia, August 26-28, 2019, Proceedings

Marketing in Customer Technology Environments

Theory and Practice

Handbook of System Safety and Security

Delivering Advanced Security Capabilities from Edge to Cloud for IoT

IoT Fundamentals

Internet of Things From Hype to Reality

Foundations of Modern Networking is a comprehensive, unified survey of modern networking technology and applications for today's professionals, managers, and students. Dr. William Stallings offers clear and well-organized coverage of five key technologies that are transforming networks: Software-Defined Networks (SDN), Network Functions Virtualization (NFV), Quality of Experience (QoE), the Internet of Things (IoT), and cloudbased services. Dr. Stallings reviews current network ecosystems and the challenges they face—from Big Data and mobility to security and complexity. Next, he offers complete, self-contained coverage of each new set of technologies: how they work, how they are architected, and how they can be applied to solve real problems. Dr. Stallings presents a chapter-length analysis of emerging security issues in modern networks. He concludes with an up-to date discussion of networking careers, including important recent changes in roles and skill requirements. Coverage: Elements of the modern networking ecosystem: technologies, architecture, services, and applications Evolving requirements of current network environments SDN: concepts, rationale, applications, and standards across data, control, and application planes OpenFlow, OpenDaylight, and other key SDN technologies Network functions virtualization: concepts, technology, applications, and software defined infrastructure Ensuring customer Quality of Experience (QoE) with interactive video and multimedia network traffic Cloud networking: services, deployment models, architecture, and linkages to SDN and NFV IoT and fog computing in depth: key components of IoT-enabled devices, model architectures, and example implementations Securing SDN, NFV, cloud, and IoT environments Career preparation and ongoing education for tomorrow's networking careers Key Features: Strong coverage of unifying principles and practical techniques More than a hundred figures that clarify key concepts Web support at williamstallings.com/Network/ QR codes throughout, linking to the website and other resources Keyword/acronym lists, recommended readings, and glossary Margin note definitions of key words throughout the text

Agriculture plays a vital role in a country's growth. Modern-day technologies drive every domain toward smart systems. The use of traditional agricultural procedures to satisfy modern-day requirements is a challenging task. Cloud IoT Systems for Smart Agricultural Engineering provides substantial coverage of various challenges of the agriculture domain through modern technologies such as the Internet of Things (IoT), cloud computing, and many more. This book offers various state-of-the-art procedures to be deployed in a wide range of agricultural activities. The concepts are discussed with the necessary implementations and clear examples. Necessary illustrations are depicted in the chapters to ensure the effective delivery of the proposed concepts. It presents the rapid advancement of the technologies in the existing agricultural model by applying the cloud IoT techniques. A wide variety of novel architectural solutions are discussed in various chapters of this book. This book provides comprehensive coverage of the most essential topics, including: New approaches on urban and vertical farming Smart crop management for Indian farmers Smart livestock management Precision agriculture using geographical information systems Machine learning techniques combined with IoT for smart agriculture Effective use of drones in smart agriculture This book provides solutions for the diverse domain of problems in agricultural engineering. It can be used at the basic and intermediary levels for agricultural science and engineering graduate students, researchers, and practitioners.

IoT Fundamentals Networking Technologies, Protocols, and Use Cases for the Internet of Things Cisco Press

With the immense growth of information, the prevalence of ubiquitously connected smart devices is rapidly increasing. Providing platforms that support computation, storage, and networking services between end devices is an essential aspect of an expanding digital society. The Rise of Fog Computing in the Digital Era provides innovative insights into the present generation of computing devices, as well as new approaches to computational platforms through fog computing. The content within this publication presents concepts and theories on data analytics, management systems, networking architectures, and many more. It is a vital reference source for IT professionals, computer programmers, software developers, computer engineers, researchers, and upper-level students seeking topics centered on the challenges and benefits of fog computing in mobile environments.

The Road to Digitization

Prospective Customers and Magical Worlds

Managing IoT Systems for Institutions and Cities

Strategic System Assurance and Business Analytics

Designing, Building and Deploying Enterprise Digital Solutions

Communication, Management and Information Technology

Securing the Internet of Things: Concepts, Methodologies, Tools, and Applications

Today, billions of devices are Internet-connected, IoT standards and protocols are stabilizing, and

technical professionals must increasingly solve real problems with IoT technologies. Now, five leading Cisco IoT experts present the first comprehensive, practical reference for making IoT work. IoT Fundamentals brings together knowledge previously available only in white papers, standards documents, and other hard-to-find sources—or nowhere at all. The authors begin with a high-level overview of IoT and introduce key concepts needed to successfully design IoT solutions. Next, they walk through each key technology, protocol, and technical building block that combine into complete IoT solutions. Building on these essentials, they present several detailed use cases, including manufacturing, energy, utilities, smart+connected cities, transportation, mining, and public safety. Whatever your role or existing infrastructure, you'll gain deep insight what IoT applications can do, and what it takes to deliver them. Fully covers the principles and components of next-generation wireless networks built with Cisco IOT solutions such as IEEE 802.11 (Wi-Fi), IEEE 802.15.4-2015 (Mesh), and LoRaWAN Brings together real-world tips, insights, and best practices for designing and implementing next-generation wireless networks Presents start-to-finish configuration examples for common deployment scenarios Reflects the extensive first-hand experience of Cisco experts

Connect your organization to the Internet of Things with solid strategy and a proven implementation plan Building Internet of Things provides front-line business decision makers with a practical handbook for capitalizing on this latest transformation. Focusing on the business implications of Internet of Things (IoT), this book describes the sheer impact, spread, and opportunities arising every day, and how business leaders can implement IoT today to realize tangible business advantages. The discussion delves into IoT from a business, strategy and organizational standpoint, and includes use-cases that illustrate the ripple effect that this latest disruption brings; you'll learn how to fashion a viable IoT plan that works with your organization's strategy and direction, and how to implement that strategy successfully by integrating IoT into your organization tomorrow. For business managers, the biggest question surrounding the Internet of Things is what to do with it. This book examines the way IoT is being used today—and will be used in the future—to help you craft a robust plan for your organization. Grasp the depth and breadth of the Internet of Things Create a secure IoT recipe that aligns with your company's strategy Capitalize on advances while avoiding disruption from others Leverage the technical, organizational, and social impact of IoT In the past five years, the Internet of Things has become the new frontier of technology that has everyone talking. It seems that almost every week a major vendor announces a new IoT strategy or division; is your company missing the boat? Learn where IoT fits into your organization, and how to turn disruption into profit with the expert guidance in Building the Internet of Things.

This book presents the latest research on Ambient Intelligence including software and applications. Ambient Intelligence (AmI) is a paradigm emerging from Artificial Intelligence, in which computers are

used as proactive tools for assisting people with their day-to-day activities, making everyone's lives more comfortable. Another main concern of AmI originates from the human-computer interaction domain and focuses on offering ways to interact with systems in a more natural way by means of user-friendly interfaces. This field is evolving rapidly, as can be seen in emerging natural language and gesture-based types of interaction. This symposium was jointly organized by the Universidade do Minho, Technical University of Valencia, Hiroshima University, and University of Salamanca. The latest installment was held in Ávila, Spain, from 26th to 28th June 2019. The authors wish to thank the sponsors: IEEE Systems Man and Cybernetics Society, Spain Section Chapter and the IEEE Spain Section (Technical Co-Sponsor), IBM, Indra, Viewnext, Global Exchange, AEPIA, APPIA and AIR Institute.

The International Conference on Communications, Management, and Information Technology (ICCMIT'16) provides a discussion forum for scientists, engineers, educators and students about the latest discoveries and realizations in the foundations, theory, models and applications of systems inspired on nature, using computational intelligence methodologies, as well as in emerging areas related to the three tracks of the conference: Communication Engineering, Knowledge, and Information Technology. The best 25 papers to be included in the book will be carefully reviewed and selected from numerous submissions, then revised and expanded to provide deeper insight into trends shaping future ICT.

Orchestrating and Automating Security for the Internet of Things

The 23rd International Conference on Network-Based Information Systems (NBIS-2020)

Smart Cities, Green Technologies, and Intelligent Transport Systems

9th International Conference, SMARTGREENS 2020, and 6th International Conference, VEHITS 2020, Prague, Czech Republic, May 2-4, 2020, Revised Selected Papers

Advances in Information and Communication

E-Business and Telecommunications

12th International Conference, SecureComm 2016, Guangzhou, China, October 10-12, 2016, Proceedings

This book aims to provide the latest research findings, innovative research results, methods, and development techniques from both theoretical and practical perspectives related to the emerging areas of information networking and their applications. The networks and information systems of today are evolving rapidly. There are new trends and applications in information networking such as wireless sensor networks, ad hoc networks, peer-to-peer systems, vehicular networks, opportunistic networks, grid and cloud computing, pervasive and ubiquitous computing, multimedia systems, security, multi-agent systems, high-speed networks, and web-based systems. These kinds of networks need to manage the increasing number of users, provide support for different services, guarantee the QoS, and optimize the network resources. For these networks,

there are many research issues and challenges that should be considered and find solutions. This comprehensive new resource presents a technical introduction to the components, architecture, software, and protocols of IoT. This book is especially catered to those who are interested in researching, developing, and building IoT. The book covers the physics of electricity and electromagnetism laying the foundation for understanding the components of modern electronics and computing. Readers learn about the fundamental properties of matter along with security and privacy issues related to IoT. From the launch of the internet from ARPAnet in the 1960s to recent connected gadgets, this book highlights the integration of IoT in various verticals such as industry, smart cities, connected vehicles, and smart and assisted living. The overall design patterns, issues with UX and UI, and different network topologies related to architectures of M2M and IoT solutions are explored. Product development, power options for IoT devices, including battery chemistry, actuators from simple buzzers to complex stepper motors, and sensors from gyroscopes to the electrical sensing of organic compounds are covered. Hardware development, sensors, and embedded systems are discussed in detail. This book offers insight into the software components that impinge on IoT solutions, development, network protocols, backend software, data analytics and conceptual interoperability.

The ubiquity of modern technologies has allowed for increased connectivity between people and devices across the globe. This connected infrastructure of networks creates numerous opportunities for applications and uses. As the applications of the internet of things continue to progress so do the security concerns for this technology. The study of threat prevention in the internet of things is necessary as security breaches in this field can ruin industries and lives. *Securing the Internet of Things: Concepts, Methodologies, Tools, and Applications* is a vital reference source that examines recent developments and emerging trends in security and privacy for the internet of things through new models, practical solutions, and technological advancements related to security. Highlighting a range of topics such as cloud security, threat detection, and open source software, this multi-volume book is ideally designed for engineers, IT consultants, ICT procurement managers, network system integrators, infrastructure service providers, researchers, academics, and professionals interested in current research on security practices pertaining to the internet of things.

Intelligent information and database systems are two closely related subfields of modern computer science which have been known for over thirty years. They focus on the integration of

artificial intelligence and classic database technologies to create the class of next generation information systems. The book focuses on new trends in intelligent information and database systems and discusses topics addressed to the foundations and principles of data, information, and knowledge models, methodologies for intelligent information and database systems analysis, design, and implementation, their validation, maintenance and evolution. They cover a broad spectrum of research topics discussed both from the practical and theoretical points of view such as: intelligent information retrieval, natural language processing, semantic web, social networks, machine learning, knowledge discovery, data mining, uncertainty management and reasoning under uncertainty, intelligent optimization techniques in information systems, security in databases systems, and multimedia data analysis. Intelligent information systems and their applications in business, medicine and industry, database systems applications, and intelligent internet systems are also presented and discussed in the book. The book consists of 38 chapters based on original works presented during the 7th Asian Conference on Intelligent Information and Database Systems (ACIIDS 2015) held on 23–25 March 2015 in Bali, Indonesia. The book is divided into six parts related to Advanced Machine Learning and Data Mining, Intelligent Computational Methods in Information Systems, Semantic Web, Social Networks and Recommendation Systems, Cloud Computing and Intelligent Internet Systems, Knowledge and Language Processing, and Intelligent Information and Database Systems: Applications.

Connecting Networks v6 Companion Guide

Foundations of Modern Networking

Artificial Intelligence-based Internet of Things Systems

Design of Secure IoT Systems: A Practical Approach Across Industries

SDN, NFV, QoE, IoT, and Cloud

Blockchain Applications in IoT Ecosystem

Advances in Networked-Based Information Systems

This book defines what IoT Systems manageability looks like and what the associated resources and costs are of that manageability. It identifies IoT Systems performance expectations and addresses the difficult challenges of determining actual costs of IoT Systems implementation, operation, and management across multiple institutional organizations. It details the unique challenges that cities and institutions have in implementing and operating IoT Systems.

Digitization and Artificial Intelligence are at the center of every board room conversation these days. Most CEOs, senior management and boards are less worried about their traditional competitors. The impact of disruption through digitization is real and quantifiable – 52% of Fortune 500 companies have

been replaced since 2000. The task of enabling new digital business models gets exponentially harder as the complexity of systems are greater. Most CIOs, CTOs are struggling with when to start, what to do, and how to meet the expectations of their CEOs and Boards. Design patterns help narrow this gap by documenting a well-working solution to a problem that occurs repeatedly in a given context. “Enterprise Digitization Patterns” breaks down digital disruption enablers and delivers a cookbook across three key pillars – Digital Experience, Enterprise IoT and Autonomous Systems. The book provides reference architectures, design patterns, maturity models and practical case studies to drive new forms of customer value, business outcomes and business models. The design patterns are distinct or relevant to modern-day enterprise digital platforms that enables enterprise digital business models. This book describes the implementation of green IT in various human and industrial domains. Consisting of four sections: “Development and Optimization of Green IT”, “Modelling and Experiments with Green IT Systems”, “Industry and Transport Green IT Systems”, “Social, Educational and Business Aspects of Green IT”, it presents results in two areas – the green components, networks, cloud and IoT systems and infrastructures; and the industry, business, social and education domains. It discusses hot topics such as programmable embedded and mobile systems, sustainable software and data centers, Internet servicing and cyber social computing, assurance cases and lightweight cryptography in context of green IT. Intended for university students, lecturers and researchers who are interested in power saving and sustainable computing, the book also appeals to engineers and managers of companies that develop and implement energy efficient IT applications.

Enterprise Digitization Patterns