Iot Fundamentals By David Hanes

Mastering Internet of ThingsHands-On Internet of Things with MQTTUnderstanding Session Border ControllersBuilding the Internet of ThingsThe Internet of Things in the CloudLearning AWS IoTGlobal IPv6 StrategiesCCIE and CCDE Evolving Technologies Study GuideIoT FundamentalsInternet of ThingsEnterprise IoTDesigning the Internet of ThingsInternet of Things: A Hands-On ApproachIot FundamentalsIoT and Edge Computing for ArchitectsGetting Started with the Internet of ThingsIoT FundamentalsBuilding Arduino Projects for the Internet of ThingsHadoop 2 Quick-Start GuideInternet of ThingsInternet of Things for ArchitectsCCIE Wireless v3 Study GuidePrecision - Principles, Practices and Solutions for the Internet of ThingsAnalytics for the Sharing Economy: Mathematics, Engineering and Business PerspectivesLearning Internet of ThingsThe Internet of ThingsOrchestrating and Automating Security for the Internet of ThingsThe IoT Hacker's HandbookSmarter Decisions – The Intersection of Internet of Things and Decision ScienceInternet of ThingsIot Security IssuesInternet of ThingsFrom Machine-to-Machine to the Internet of Things: Introduction to a New Age of IntelligenceThe Internet of ThingsRaspberry Pi IoT Projects802.11 Wireless LAN FundamentalsHands-On Artificial Intelligence for IoTHands-On IoT Solutions with BlockchainEmbedded Software for the IoTFax, Modem, and Text for IP Telephony

Mastering Internet of Things

Build smarter systems by combining artificial
intelligence and the Internet of Things—two of the
most talked about topics today Key Features
Leverage the power of Python libraries such as
TensorFlow and Keras to work with real-time IoT data
Process IoT data and predict outcomes in real time to
build smart IoT models Cover practical case studies
on industrial IoT, smart cities, and home automation
Book Description There are many applications that
use data science and analytics to gain insights from
terabytes of data. These apps, however, do not
address the challenge of continually discovering
patterns for IoT data. In Hands-On Artificial
Intelligence for IoT, we cover various aspects of
artificial intelligence (AI) and its implementation to
make your IoT solutions smarter. This book starts by
covering the process of gathering and preprocessing
IoT data gathered from distributed sources. You will
learn different AI techniques such as machine
learning, deep learning, reinforcement learning, and
natural language processing to build smart IoT
systems. You will also leverage the power of AI to
handle real-time data coming from wearable devices.
As you progress through the book, techniques for
building models that work with different kinds of data
generated and consumed by IoT devices such as time
series, images, and audio will be covered. Useful case
studies on four major application areas of IoT
solutions are a key focal point of this book. In the
concluding chapters, you will leverage the power of
widely used Python libraries, TensorFlow and Keras, to

build different kinds of smart AI models. By the end of this book, you will be able to build smart AI-powered IoT apps with confidence. What you will learn Apply different AI techniques including machine learning and deep learning using TensorFlow and Keras Access and process data from various distributed sources Perform supervised and unsupervised machine learning for IoT data Implement distributed processing of IoT data over Apache Spark using the MLLib and H2O.ai platforms Forecast time-series data using deep learning methods Implementing AI from case studies in Personal IoT, Industrial IoT, and Smart Cities Gain unique insights from data obtained from wearable devices and smart devices Who this book is for If you are a data science professional or a machine learning developer looking to build smart systems for IoT, Hands-On Artificial Intelligence for IoT is for you. If you want to learn how popular artificial intelligence (AI) techniques can be used in the Internet of Things domain, this book will also be of benefit. A basic understanding of machine learning concepts will be required to get the best out of this book.

Hands-On Internet of Things with MQTT

Augment your IoT skills with the help of engaging and enlightening tutorials designed for Raspberry Pi 3 Key Features Design and implement state-of-the-art solutions for the Internet of Things Build complex projects using motions detectors, controllers, sensors, and Raspberry Pi 3 A hands-on guide that provides interoperable solutions for sensors, actuators, and controllers Book Description The Internet of Things

(IoT) is the fastest growing technology market.
Industries are embracing IoT technologies to improve
operational expenses, product life, and people's well-
being. Mastering Internet of Things starts by
presenting IoT fundamentals and the smart city. You
will learn the important technologies and protocols
that are used for the Internet of Things, their features,
corresponding security implications, and practical
examples on how to use them. This book focuses on
creating applications and services for the Internet of
Things. Further, you will learn to create applications
and services for the Internet of Things. You will be
discover various interesting projects and understand
how to publish sensor data, control devices, and react
to asynchronous events using the XMPP protocol. The
book also introduces chat, to interact with your
devices. You will learn how to automate your tasks by
using Internet of Things Service Platforms as the base
for an application. You will understand the subject of
privacy, requirements they should be familiar with,
and how to avoid violating any of the important new
regulations being introduced. At the end of the book,
you will have mastered creating open, interoperable
and secure networks of things, protecting the privacy
and integrity of your users and their information.
What you will learn Create your own project, run and
debug it Master different communication patterns
using the MQTT, HTTP, CoAP, LWM2M and XMPP
protocols Build trust-based as hoc networks for open,
secure and interoperable communication Explore the
IoT Service Platform Manage the entire product life
cycle of devices Understand and set up the security
and privacy features required for your system Master
interoperability, and how it is solved in the realms of

HTTP,CoAP, LWM2M and XMPP Who this book is for If you're a developer or electronic engineer and are curious about the Internet of Things, this is the book for you. With only a rudimentary understanding of electronics and Raspberry Pi 3, and some programming experience using managed code, such as C# or Java, you will be taught to develop state-of-the-art solutions for the Internet of Things.

Understanding Session Border Controllers

Prepare for the evolving technology components of Cisco's revised CCIE and CCDE written exams The changes Cisco made to its expert-level CCIE and CCDE certifications allow candidates to link their core technology expertise with knowledge of evolving technologies that organizations are rapidly adopting, including cloud services, IoT networking, and network programmability. This guide will help you efficiently master and integrate the knowledge of evolving technology that you'll need to succeed on the revised CCIE and CCDE written examinations. Designed to help you efficiently focus your study, achieve mastery, and build confidence, CCIE and CCDE Evolving Technologies Study Guide focuses on conceptual insight, not mere memorization. Focused specifically on the exams' evolving technologies components, it combines with track-specific Cisco Press certification guides to offer comprehensive and authoritative preparation for advanced Cisco certification. Understand the Internet of Things (IoT) from the perspective of business transformations,

connectivity, and security Review leading IoT architectural models and applications Structure edge, fog, and centralized compute to maximize processing efficiency Recognize behavioral and operational differences between IoT networks and enterprise networks Gain a holistic understanding of public, private, or hybrid cloud environments that use VMs or containers Explore cloud service models, connectivity, security, scalability, and high availability designs. Master modern API-based programmability and automation methods for interacting with diverse network applications and devices Connect with the Cisco DevNet developer community and other key resources for Cisco network programming

Building the Internet of Things

Learn to design, implement and secure your IoT infrastructure Key Features Build a complete IoT system that is the best fit for your organization Learn about different concepts, technologies, and tradeoffs in the IoT architectural stack Understand the theory, concepts, and implementation of each element that comprises IoT design—from sensors to the cloud Implement best practices to ensure the reliability, scalability, robust communication systems, security, and data analysis in your IoT infrastructure Book Description The Internet of Things (IoT) is the fastest growing technology market. Industries are embracing IoT technologies to improve operational expenses, product life, and people's well-being. An architectural guide is necessary if you want to traverse the spectrum of technologies needed to build a successful

IoT system, whether that's a single device or millions of devices. This book encompasses the entire spectrum of IoT solutions, from sensors to the cloud. We start by examining modern sensor systems and focus on their power and functionality. After that, we dive deep into communication theory, paying close attention to near-range PAN, including the new Bluetooth® 5.0 specification and mesh networks. Then, we explore IP-based communication in LAN and WAN, including 802.11ah, 5G LTE cellular, SigFox, and LoRaWAN. Next, we cover edge routing and gateways and their role in fog computing, as well as the messaging protocols of MQTT and CoAP. With the data now in internet form, you'll get an understanding of cloud and fog architectures, including the OpenFog standards. We wrap up the analytics portion of the book with the application of statistical analysis, complex event processing, and deep learning models. Finally, we conclude by providing a holistic view of the IoT security stack and the anatomical details of IoT exploits while countering them with software defined perimeters and blockchains. What you will learn Understand the role and scope of architecting a successful IoT deployment, from sensors to the cloud Scan the landscape of IoT technologies that span everything from sensors to the cloud and everything in between See the trade-offs in choices of protocols and communications in IoT deployments Build a repertoire of skills and the vernacular necessary to work in the IoT space Broaden your skills in multiple engineering domains necessary for the IoT architect Who this book is for This book is for architects, system designers, technologists, and technology managers who want to understand the IoT ecosphere, various

technologies, and tradeoffs and develop a 50,000-foot view of IoT architecture.

The Internet of Things in the Cloud

Learning AWS IoT

IoT Security Issues looks at the burgeoning growth of devices of all kinds controlled over the Internet of all varieties, where product comes first and security second. In this case, security trails badly. This book examines the issues surrounding these problems, vulnerabilities, what can be done to solve the problem, investigating the stack for the roots of the problems and how programming and attention to good security practice can combat the problems today that are a result of lax security processes on the Internet of Things. This book is for people interested in understanding the vulnerabilities on the Internet of Things, such as programmers who have not yet been focusing on the IoT, security professionals and a wide array of interested hackers and makers. This book assumes little experience or knowledge of the Internet of Things. To fully appreciate the book, limited programming background would be helpful for some of the chapters later in the book, though the basic content is explained. The author, Alasdair Gilchrist, has spent 25 years as a company director in the fields of IT, Data Communications, Mobile Telecoms and latterly Cloud/SDN/NFV technologies, as a professional technician, support manager, network and security

architect. He has project-managed both agile SDLC software development as well as technical network architecture design. He has experience in the deployment and integration of systems in enterprise, cloud, fixed/mobile telecoms, and service provider networks. He is therefore knowledgeable in a wide range of technologies and has written a number of books in related fields.

Global IPv6 Strategies

This book addresses researchers and graduate students at the forefront of study/research on the Internet of Things (IoT) by presenting state-of-the-art research together with the current and future challenges in building new smart applications (e.g., Smart Cities, Smart Buildings, and Industrial IoT) in an efficient, scalable, and sustainable way. It covers the main pillars of the IoT world (Connectivity, Interoperability, Discoverability, and Security/Privacy), providing a comprehensive look at the current technologies, procedures, and architectures.

CCIE and CCDE Evolving Technologies Study Guide

Take your idea from concept to production with this unique guide Whether it's called physical computing, ubiquitous computing, or the Internet of Things, it's a hot topic in technology: how to channel your inner Steve Jobs and successfully combine hardware, embedded software, web services, electronics, and cool design to create cutting-edge devices that are

fun, interactive, and practical. If you'd like to create the next must-have product, this unique book is the perfect place to start. Both a creative and practical primer, it explores the platforms you can use to develop hardware or software, discusses design concepts that will make your products eye-catching and appealing, and shows you ways to scale up from a single prototype to mass production. Helps software engineers, web designers, product designers, and electronics engineers start designing products using the Internet-of-Things approach Explains how to combine sensors, servos, robotics, Arduino chips, and more with various networks or the Internet, to create interactive, cutting-edge devices Provides an overview of the necessary steps to take your idea from concept through production If you'd like to design for the future, Designing the Internet of Things is a great place to start.

IoT Fundamentals

Enter the world of Internet of Things with the power of data science with this highly practical, engaging book About This Book Explore real-world use cases from the Internet of Things (IoT) domain using decision science with this easy-to-follow, practical book Learn to make smarter decisions on top of your IoT solutions so that your IoT is smart in a real sense This highly practical, example-rich guide fills the gap between your knowledge of data science and IoT Who This Book Is For If you have a basic programming experience with R and want to solve business use cases in IoT using decision science then this book is

for you. Even if your're a non-technical manager anchoring IoT projects, you can skip the code and still benefit from the book. What You Will Learn Explore decision science with respect to IoT Get to know the end to end analytics stack – Descriptive + Inquisitive + Predictive + Prescriptive Solve problems in IoT connected assets and connected operations Design and solve real-life IoT business use cases using cutting edge machine learning techniques Synthesize and assimilate results to form the perfect story for a business Master the art of problem solving when IoT meets decision science using a variety of statistical and machine learning techniques along with hands on tasks in R In Detail With an increasing number of devices getting connected to the Internet, massive amounts of data are being generated that can be used for analysis. This book helps you to understand Internet of Things in depth and decision science, and solve business use cases. With IoT, the frequency and impact of the problem is huge. Addressing a problem with such a huge impact requires a very structured approach. The entire journey of addressing the problem by defining it, designing the solution, and executing it using decision science is articulated in this book through engaging and easy-to-understand business use cases. You will get a detailed understanding of IoT, decision science, and the art of solving a business problem in IoT through decision science. By the end of this book, you'll have an understanding of the complex aspects of decision making in IoT and will be able to take that knowledge with you onto whatever project calls for it Style and approach This scenario-based tutorial approaches the topic systematically, allowing you to build upon what

you learned in previous chapters.

Internet of Things

The book provides an encompassing overview of all aspects relating to the sharing economy paradigm in different fields of study, and shows the ongoing research efforts in filling previously identified gaps in understanding in this area. Control and optimization analytics for the sharing economy explores bespoke analytics, tools, and business models that can be used to help design collaborative consumption services (the shared economy). It provides case studies of collaborative consumption in the areas of energy and mobility. The contributors review successful examples of sharing systems, and explore the theory for designing effective and stable shared-economy models. They discuss recent innovations in and uses of shared economy models in niche areas, such as energy and mobility. Readers learn the scientific challenging issues associated with the realization of a sharing economy. Conceptual and practical matters are examined, and the state-of-the-art tools and techniques to address such applications are explained. The contributors also show readers how topical problems in engineering, such as energy consumption in power grids, or bike sharing in transportation networks, can be formulated and solved from a general collaborative consumption perspective. Since the book takes a mathematical perspective to the topic, researchers in business, computer science, optimization and control find it useful. Practitioners also use the book as a point of

reference, as it explores and investigates the analytics behind economy sharing.

Enterprise IoT

If you're a developer or electronics engineer who is curious about Internet of Things, then this is the book for you. With only a rudimentary understanding of electronics, Raspberry Pi, or similar credit-card sized computers, and some programming experience using managed code such as C# or Java, you will be taught to develop state-of-the-art solutions for Internet of Things in an instant.

Designing the Internet of Things

Internet of Things: A Hands-On Approach

An all-in-one reference to the major Home Area Networking, Building Automation and AMI protocols, including 802.15.4 over radio or PLC, 6LowPAN/RPL, ZigBee 1.0 and Smart Energy 2.0, Zwave, LON, BACNet, KNX, ModBus, mBus, C.12 and DLMS/COSEM, and the new ETSI M2M system level standard. In-depth coverage of Smart-grid and EV charging use cases. This book describes the Home Area Networking, Building Automation and AMI protocols and their evolution towards open protocols based on IP such as 6LowPAN and ETSI M2M. The authors discuss the approach taken by service providers to interconnect the protocols and solve the challenge of massive scalability of machine-to-machine

communication for mission-critical applications, based on the next generation machine-to-machine ETSI M2M architecture. The authors demonstrate, using the example of the smartgrid use case, how the next generation utilities, by interconnecting and activating our physical environment, will be able to deliver more energy (notably for electric vehicles) with less impact on our natural resources. Key Features: Offers a comprehensive overview of major existing M2M and AMI protocols Covers the system aspects of large scale M2M and smart grid applications Focuses on system level architecture, interworking, and nationwide use cases Explores recent emerging technologies: 6LowPAN, ZigBee SE 2.0 and ETSI M2M, and for existing technologies covers recent developments related to interworking Relates ZigBee to the issue of smartgrid, in the more general context of carrier grade M2M applications Illustrates the benefits of the smartgrid concept based on real examples, including business cases This book will be a valuable guide for project managers working on smartgrid, M2M, telecommunications and utility projects, system engineers and developers, networking companies, and home automation companies. It will also be of use to senior academic researchers, students, and policy makers and regulators.

Iot Fundamentals

Master the basics of modems, fax, and text telephony technologies, including how modems and faxes work in an IP network infrastructure.

IoT and Edge Computing for Architects

Although the Internet of Things (IoT) is a vast and dynamic territory that is evolving rapidly, there has been a need for a book that offers a holistic view of the technologies and applications of the entire IoT spectrum. Filling this void, The Internet of Things in the Cloud: A Middleware Perspective provides a comprehensive introduction to the IoT and its development worldwide. It gives you a panoramic view of the IoT landscape—focusing on the overall technological architecture and design of a tentatively unified IoT framework underpinned by Cloud computing from a middleware perspective. Organized into three sections, it: Describes the many facets of Internet of Things—including the four pillars of IoT and the three layer value chain of IoT Focuses on middleware, the glue and building blocks of a holistic IoT system on every layer of the architecture Explores Cloud computing and IoT as well as their synergy based on the common background of distributed processing The book is based on the author's two previous bestselling books (in Chinese) on IoT and Cloud computing and more than two decades of hands-on software/middleware programming and architecting experience at organizations such as the Oak Ridge National Laboratory, IBM, BEA Systems, and Silicon Valley startup Doubletwist. Tapping into this wealth of knowledge, the book categorizes the many facets of the IoT and proposes a number of paradigms and classifications about Internet of Things' mass and niche markets and technologies.

Getting Started with the Internet of Things

This book outlines the background and overall vision for the Internet of Things (IoT) and Machine-to-Machine (M2M) communications and services, including major standards. Key technologies are described, and include everything from physical instrumentation of devices to the cloud infrastructures used to collect data. Also included is how to derive information and knowledge, and how to integrate it into enterprise processes, as well as system architectures and regulatory requirements. Real-world service use case studies provide the hands-on knowledge needed to successfully develop and implement M2M and IoT technologies sustainably and profitably. Finally, the future vision for M2M technologies is described, including prospective changes in relevant standards. This book is written by experts in the technology and business aspects of Machine-to-Machine and Internet of Things, and who have experience in implementing solutions. Standards included: ETSI M2M, IEEE 802.15.4, 3GPP (GPRS, 3G, 4G), Bluetooth Low Energy/Smart, IETF 6LoWPAN, IETF CoAP, IETF RPL, Power Line Communication, Open Geospatial Consortium (OGC) Sensor Web Enablement (SWE), ZigBee, 802.11, Broadband Forum TR-069, Open Mobile Alliance (OMA) Device Management (DM), ISA100.11a, WirelessHART, M-BUS, Wireless M-BUS, KNX, RFID, Object Management Group (OMG) Business Process Modelling Notation (BPMN) Key technologies for M2M and IoT covered: Embedded systems hardware and software, devices

and gateways, capillary and M2M area networks, local and wide area networking, M2M Service Enablement, IoT data management and data warehousing, data analytics and big data, complex event processing and stream analytics, knowledge discovery and management, business process and enterprise integration, Software as a Service and cloud computing Combines both technical explanations together with design features of M2M/IoT and use cases. Together, these descriptions will assist you to develop solutions that will work in the real world Detailed description of the network architectures and technologies that form the basis of M2M and IoT Clear guidelines and examples of M2M and IoT use cases from real-world implementations such as Smart Grid, Smart Buildings, Smart Cities, Participatory Sensing, and Industrial Automation A description of the vision for M2M and its evolution towards IoT

IoT Fundamentals

Internet of Things: Principles and Paradigms captures the state-of-the-art research in Internet of Things, its applications, architectures, and technologies. The book identifies potential future directions and technologies that facilitate insight into numerous scientific, business, and consumer applications. The Internet of Things (IoT) paradigm promises to make any electronic devices part of the Internet environment. This new paradigm opens the doors to new innovations and interactions between people and things that will enhance the quality of life and utilization of scarce resources. To help realize the full

potential of IoT, the book addresses its numerous challenges and develops the conceptual and technological solutions for tackling them. These challenges include the development of scalable architecture, moving from closed systems to open systems, designing interaction protocols, autonomic management, and the privacy and ethical issues around data sensing, storage, and processing. Addresses the main concepts and features of the IoT paradigm Describes different architectures for managing IoT platforms Provides insight on trust, security, and privacy in IoT environments Describes data management techniques applied to the IoT environment Examines the key enablers and solutions to enable practical IoT systems Looks at the key developments that support next generation IoT platforms Includes input from expert contributors from both academia and industry on building and deploying IoT platforms and applications

Building Arduino Projects for the Internet of Things

The complete guide to deploying and operating SBC solutions, Including Cisco Unified Border Element (CUBE) Enterprise and service provider networks are increasingly adopting SIP as the guiding protocol for session management, and require leveraging Session Border Controller (SBC) technology to enable this transition. Thousands of organizations have made the Cisco Unified Border Element (CUBE) their SBC technology of choice. Understanding Session Border Controllers gives network professionals and

consultants a comprehensive guide to SBC theory, design, deployment, operation, security, troubleshooting, and more. Using CUBE-based examples, the authors offer insights that will be valuable to technical professionals using any SBC solution. The authors thoroughly cover native call control protocols, SBC behavior, and SBC's benefits for topology abstraction, demarcation and security, media, and protocol interworking. They also present practical techniques and configurations for achieving interoperability with a wide variety of collaboration products and solutions. Evaluate key benefits of SBC solutions for security, management, and interoperability Master core concepts of SIP, H.323, DTMF, signaling interoperability, call routing, fax/modem over IP, security, media handling, and media/signal forking in the SBC context Compare SBC deployment scenarios, and optimize deployment for your environment Size and scale an SBC platform for your environment, prevent oversubscription of finite resources, and control cost through careful licensing Use SBCs as a back-to-back user agent (B2BUA) to interoperate between asymmetric VoIP networks Establish SIP trunking for PSTN access via SBCs Interoperate with call servers, proxies, fax servers, ITSPs, redirect servers, call recording servers, contact centers, and other devices Secure real-time communications over IP Mitigate security threats associated with complex SIP deployments Efficiently monitor and manage an SBC environment

Hadoop 2 Quick-Start Guide

What is the Internet of Things? It's billions of embedded computers, sensors, and actuators all connected online. If you have basic programming skills, you can use these powerful little devices to create a variety of useful systems—such as a device that waters plants when the soil becomes dry. This hands-on guide shows you how to start building your own fun and fascinating projects. Learn to program embedded devices using the .NET Micro Framework and the Netduino Plus board. Then connect your devices to the Internet with Pachube, a cloud platform for sharing real-time sensor data. All you need is a Netduino Plus, a USB cable, a couple of sensors, an Ethernet connection to the Internet—and your imagination. Develop programs with simple outputs (actuators) and inputs (sensors) Learn about the Internet of Things and the Web of Things Build client programs that push sensor readings from a device to a web service Create server programs that allow you to control a device over the Web Get the .NET classes and methods needed to implement all of the book's examples

Internet of Things

Build your own Internet of Things (IoT) projects for prototyping and proof-of-concept purposes. This book contains the tools needed to build a prototype of your design, sense the environment, communicate with the Internet (over the Internet and Machine to Machine communications) and display the results. Raspberry Pi IoT Projects provides several IoT projects and designs are shown from the start to the finish including an IoT

Heartbeat Monitor, an IoT Swarm, IoT Solar Powered
Weather Station, an IoT iBeacon Application and a
RFID (Radio Frequency Identification) IoT Inventory
Tracking System. The software is presented as
reusable libraries, primarily in Python and C with full
source code available. Raspberry Pi IoT Projects:
Prototyping Experiments for Makers is also a valuable
learning resource for classrooms and learning labs.
What You'll Learn build IOT projects with the
Raspberry Pi Talk to sensors with the Raspberry Pi
Use iBeacons with the IOT Raspberry Pi Communicate
your IOT data to the Internet Build security into your
IOT device Who This Book Is For Primary audience are
those with some technical background, but not
necessarily engineers. It will also appeal to technical
people wanting to learn about the Raspberry Pi in a
project-oriented method.

Internet of Things for Architects

Learn to use AWS IoT services to build your connected
applications with the help of this comprehensive
guide. Key Features Gets you started with AWS IoT
and its functionalities Learn different modules of AWS
IoT with practical use cases. Learn to secure your IoT
communication Book Description The Internet of
Things market increased a lot in the past few years
and IoT development and its adoption have showed
an upward trend. Analysis and predictions say that
Enterprise IoT platforms are the future of IoT. AWS IoT
is currently leading the market with its wide range of
device support SDKs and versatile management
console. This book initially introduces you to the IoT

platforms, and how it makes our IoT development easy. It then covers the complete AWS IoT Suite and how it can be used to develop secure communication between internet-connected things such as sensors, actuators, embedded devices, smart applications, and so on. The book also covers the various modules of AWS: AWS Greengrass, AWS device SDKs, AWS IoT Platform, AWS Button, AWS Management consoles, AWS-related CLI, and API references, all with practical use cases. Near the end, the book supplies security-related best practices to make bi-directional communication more secure. When you've finished this book, you'll be up-and-running with the AWS IoT Suite, and building IoT projects. What you will learn Implement AWS IoT on IoT projects Learn the technical capabilities of AWS IoT and IoT devices Create IoT-based AWS IoT projects Choose IoT devices and AWS IoT platforms to use based on the kind of project you need to build Deploy AWS Greengrass and AWS Lambda Develop program for AWS IoT Button Visualize IoT AWS data Build predictive analytics using AWS IoT and AWS Machine Learning Who this book is for This book is for anyone who wants to get started with the AWS IoT Suite and implement it with practical use cases. This book acts as an extensive guide, on completion of which you will be in a position to start building IoT projects using AWS IoT platform and using cloud services for your projects.

CCIE Wireless v3 Study Guide

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

Precision - Principles, Practices and Solutions for the Internet of Things

Gain a strong foundation of Arduino-based device development, from which you can go in any direction

according to your specific development needs and desires. You'll build Arduino-powered devices for everyday use, and then connect those devices to the Internet. You'll be introduced to the building blocks of IoT, and then deploy those principles to by building a variety of useful projects. Projects in the books gradually introduce the reader to key topics such as internet connectivity with Arduino, common IoT protocols, custom web visualization, and Android apps that receive sensor data on-demand and in realtime. IoT device enthusiasts of all ages will want this book by their side when developing Android-based devices. If you're one of the many who have decided to build your own Arduino-powered devices for IoT applications, then Building Arduino Projects for the Internet of Things is exactly what you need. This book is your single resource--a guidebook for the eager-to-learn Arduino enthusiast--that teaches logically, methodically, and practically how the Arduino works and what you can build with it. Written by a software developer and solution architect who got tired of hunting and gathering various lessons for Arduino development as he taught himself all about the topic. For Arduino enthusiasts, this book not only opens up the world of IoT applications, you will also learn many techniques that likely would not be obvious if not for experience with such a diverse group of applications What You'll Learn Create an Arduino circuit that senses temperature Publish data collected from an Arduino to a server and to an MQTT broker Set up channels in Xively Using Node-RED to define complex flows Publish data visualization in a web app Report motion-sensor data through a mobile app Create a remote control for house lights Set up an app in IBM

Bluematrix Who This Book Is For IoT device enthusiasts of all ages will want this book by their side when developing Android-based devices.

Analytics for the Sharing Economy: Mathematics, Engineering and Business Perspectives

Internet of Things (IoT) refers to physical and virtual objects that have unique identities and are connected to the internet to facilitate intelligent applications that make energy, logistics, industrial control, retail, agriculture and many other domains "smarter". Internet of Things is a new revolution of the Internet that is rapidly gathering momentum driven by the advancements in sensor networks, mobile devices, wireless communications, networking and cloud technologies. Experts forecast that by the year 2020 there will be a total of 50 billion devices/things connected to the internet. This book is written as a textbook on Internet of Things for educational programs at colleges and universities, and also for IoT vendors and service providers who may be interested in offering a broader perspective of Internet of Things to accompany their own customer and developer training programs. The typical reader is expected to have completed a couple of courses in programming using traditional high-level languages at the college-level, and is either a senior or a beginning graduate student in one of the science, technology, engineering or mathematics (STEM) fields. Like our companion book on Cloud Computing, we have tried to write a comprehensive book that transfers knowledge

through an immersive "hands on" approach, where the reader is provided the necessary guidance and knowledge to develop working code for real-world IoT applications. Additional support is available at the book's website: www.internet-of-things-book.com Organization The book is organized into 3 main parts, comprising of a total of 11 chapters. Part I covers the building blocks of Internet of Things (IoTs) and their characteristics. A taxonomy of IoT systems is proposed comprising of various IoT levels with increasing levels of complexity. Domain specific Internet of Things and their real-world applications are described. A generic design methodology for IoT is proposed. An IoT system management approach using NETCONF-YANG is described. Part II introduces the reader to the programming aspects of Internet of Things with a view towards rapid prototyping of complex IoT applications. We chose Python as the primary programming language for this book, and an introduction to Python is also included within the text to bring readers to a common level of expertise. We describe packages, frameworks and cloud services including the WAMP-AutoBahn, Xively cloud and Amazon Web Services which can be used for developing IoT systems. We chose the Raspberry Pi device for the examples in this book. Reference architectures for different levels of IoT applications are examined in detail. Case studies with complete source code for various IoT domains including home automation, smart environment, smart cities, logistics, retail, smart energy, smart agriculture, industrial control and smart health, are described. Part III introduces the reader to advanced topics on IoT including IoT data analytics and Tools for IoT. Case

studies on collecting and analyzing data generated by Internet of Things in the cloud are described.

Learning Internet of Things

Develop a variety of projects and connect them to microcontrollers and web servers using the lightweight messaging protocol MQTT Key Features Leverage the power of MQTT to build a pet food dispenser, e-ink to-do list, and a productivity cube Learn about technologies like laser cutting, 3D printing, and PCB production for building robust prototypes Explore practical uses cases to gain an in-depth understanding of MQTT Book Description MQ Telemetry Transport (MQTT) is a lightweight messaging protocol for smart devices that can be used to build exciting, highly scalable Internet of Things (IoT) projects. This book will get you started with a quick introduction to the concepts of IoT and MQTT and explain how the latter can help you build your own internet-connected prototypes. As you advance, you'll gain insights into how microcontrollers communicate, and you'll get to grips with the different messaging protocols and techniques involved. Once you are well-versed with the essential concepts, you'll be able to put what you've learned into practice by building three projects from scratch, including an automatic pet food dispenser and a smart e-ink to-do display. You'll also discover how to present your own prototypes professionally. In addition to this, you'll learn how to use technologies from third-party web service providers, along with other rapid prototyping technologies, such as laser

cutting, 3D printing, and PCB production. By the end of this book, you'll have gained hands-on experience in using MQTT to build your own IoT prototypes. What you will learn Explore MQTT programming with Arduino Discover how to make your prototypes talk to each other Send MQTT messages from your smartphone to your prototypes Discover how you can make websites interact with your prototypes Learn about MQTT servers, libraries, and apps Explore tools such as laser cutting and 3D printing in order to build robust prototype cases Who this book is for If you are an IoT developer or enthusiast who wants to start building IoT prototypes using MQTT, this book is for you. Basic knowledge of programming with Arduino will be useful.

The Internet of Things

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.

Orchestrating and Automating Security for the Internet of Things

As more and more devices become interconnected through the Internet of Things (IoT), there is an even greater need for this book,which explains the technology, the internetworking, and applications that are making IoT an everyday reality. The book begins with a discussion of IoT "ecosystems" and the technology that enables them, which includes: Wireless Infrastructure and Service Discovery Protocols Integration Technologies and Tools Application and Analytics Enablement Platforms A

chapter on next-generation cloud infrastructure explains hosting IoT platforms and applications. A chapter on data analytics throws light on IoT data collection, storage, translation, real-time processing, mining, and analysis, all of which can yield actionable insights from the data collected by IoT applications. There is also a chapter on edge/fog computing. The second half of the book presents various IoT ecosystem use cases. One chapter discusses smart airports and highlights the role of IoT integration. It explains how mobile devices, mobile technology, wearables, RFID sensors, and beacons work together as the core technologies of a smart airport. Integrating these components into the airport ecosystem is examined in detail, and use cases and real-life examples illustrate this IoT ecosystem in operation. Another in-depth look is on envisioning smart healthcare systems in a connected world. This chapter focuses on the requirements, promising applications, and roles of cloud computing and data analytics. The book also examines smart homes, smart cities, and smart governments. The book concludes with a chapter on IoT security and privacy. This chapter examines the emerging security and privacy requirements of IoT environments. The security issues and an assortment of surmounting techniques and best practices are also discussed in this chapter.

The IoT Hacker's Handbook

Integrate an end-to-end logistic chain using IBM Blockchain and IoT platforms Key Features Explore

practical implementation of ledger technology in the IoT architecture Study security best practices for your smart devices Understand Blockchain implementation for end-to-end IoT solutions Book Description Blockchain has been the hot topic of late thanks to cryptocurrencies. To make matters more interesting, the financial market is looking for ways to reduce operational costs and generate new business models, and this is where blockchain solutions come into the picture. In addition to this, with Internet of Things (IoT) trending and Arduino, Raspberry Pi, and other devices flooding the market, you can now create cheap devices even at home. Hands-On IoT Solutions with Blockchain starts with an overview of IoT concepts in the current business scenario. It then helps you develop your own device on the IBM Watson IoT platform and create your fi rst IoT solution using Watson and Intel Edison.Once you are familiar with IoT, you will learn about Blockchain technology and its use cases. You will also work with the Hyperledger framework and develop your own Blockchain network. As you progress through the chapters, you'll work with problem statements and learn how to design your solution architecture so that you can create your own integrated Blockchain and IoT solution. The next set of chapters will explain how to implement end-to-end Blockchain solutions with IoT using the IBM Cloud platform. By the end of this book, you will have mastered the convergence of IoT and Blockchain technology and exploited the best practices and drivers to develop a bulletproof integrated solution. What you will learn Understand the key roles of IoT in the current market Study the different aspects of IBM Watson IoT platform Create

devices, gateways, and applications connected to the platform Explore the fundamentals of Blockchain Define good use cases for Blockchain Discover the Hyperledger Fabric and Composer frameworks Develop an IBM Watson IoT application using a Intel Edison Integrate IoT with the Blockchain platform Who this book is for Hands-On IoT Solutions with Blockchain is for you if you are an Internet of Things (IoT) analyst, architect, engineer, or any stakeholder responsible for security mechanisms on an IoT infrastructure. This book is also for IT professionals who want to start developing solutions using Blockchain and IoT on the IBM Cloud platform. Basic understanding of IoT will assist you in understanding key concepts covered in the book.

Smarter Decisions – The Intersection of Internet of Things and Decision Science

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

Internet of Things

Iot Security Issues

Thoroughly prepare for the revised Cisco CCIE
Wireless v3.x certification exams Earning Cisco CCIE
Wireless certification demonstrates your broad
theoretical knowledge of wireless networking, your
strong understanding of Cisco WLAN technologies,
and the skills and technical knowledge required of an
expert-level wireless network professional. This guide
will help you efficiently master the knowledge and
skills you'll need to succeed on both the CCIE Wireless
v3.x written and lab exams. Designed to help you
efficiently focus your study, achieve mastery, and
build confidence, it focuses on conceptual insight, not
mere memorization. Authored by five of the leading
Cisco wireless network experts, it covers all areas of
the CCIE Wireless exam blueprint, offering complete
foundational knowledge for configuring and
troubleshooting virtually any Cisco wireless
deployment. Plan and design enterprise-class WLANs
addressing issues ranging from RF boundaries to AP
positioning, power levels, and density Prepare and set
up wireless network infrastructure, including Layer
2/3 and key network services Optimize existing wired
networks to support wireless infrastructure Deploy,
configure, and troubleshoot Cisco IOS Autonomous
WLAN devices for wireless bridging Implement,
configure, and manage AireOS Appliance, Virtual, and
Mobility Express Controllers Secure wireless networks
with Cisco Identity Services Engine: protocols,
concepts, use cases, and configuration Set up and
optimize management operations with Prime
Infrastructure and MSE/CMX Design, configure,

operate, and troubleshoot WLANs with real-time applications

Internet of Things

Learn to design, implement, and secure your IoT infrastructure. Revised and expanded for edge computing. Key Features Build a complete IoT system that's the best fit for your organization Learn about different concepts, tech, and trade-offs in the IoT architectural stack Understand the theory and implementation of each element that comprises IoT design Book Description Industries are embracing IoT technologies to improve operational expenses, product life, and people's well-being. An architectural guide is needed if you want to traverse the spectrum of technologies needed to build a successful IoT system, whether that's a single device or millions of IoT devices. IoT and Edge Computing for Architects, Second Edition encompasses the entire spectrum of IoT solutions, from IoT sensors to the cloud. It examines modern sensor systems, focusing on their power and functionality. It also looks at communication theory, paying close attention to near-range PAN, including the new Bluetooth® 5.0 specification and mesh networks. Then, the book explores IP-based communication in LAN and WAN, including 802.11ah, 5G LTE cellular, Sigfox, and LoRaWAN. It also explains edge computing, routing and gateways, and their role in fog computing, as well as the messaging protocols of MQTT 5.0 and CoAP. With the data now in internet form, you'll get an understanding of cloud and fog architectures,

including the OpenFog standards. The book wraps up the analytics portion with the application of statistical analysis, complex event processing, and deep learning models. The book then concludes by providing a holistic view of IoT security, cryptography, and shell security in addition to software-defined perimeters and blockchains. What you will learn Understand the role and scope of architecting a successful IoT deployment Scan the landscape of IoT technologies, from sensors to the cloud and more See the trade-offs in choices of protocols and communications in IoT deployments Become familiar with the terminology needed to work in the IoT space Broaden your skills in the multiple engineering domains necessary for the IoT architect Implement best practices to ensure reliability, scalability, and security in your IoT infrastructure Who this book is for This book is for architects, system designers, technologists, and technology managers who want to understand the IoT ecosphere, technologies, and trade-offs, and develop a 50,000-foot view of IoT architecture. An understanding of the architectural side of IoT is necessary.

From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence

Take a practioner's approach in analyzing the Internet of Things (IoT) devices and the security issues facing an IoT architecture. You'll review the architecture's central components, from hardware communication interfaces, such as UARTand SPI, to radio protocols,

such as BLE or ZigBee. You'll also learn to assess a device physically by opening it, looking at the PCB, and identifying the chipsets and interfaces. You'll then use that information to gain entry to the device or to perform other actions, such as dumping encryption keys and firmware. As the IoT rises to one of the most popular tech trends, manufactures need to take necessary steps to secure devices and protect them from attackers. The IoT Hacker's Handbook breaks down the Internet of Things, exploits it, and reveals how these devices can be built securely. What You'll Learn Perform a threat model of a real-world IoT device and locate all possible attacker entry points Use reverse engineering of firmware binaries to identify security issues Analyze,assess, and identify security issues in exploited ARM and MIPS based binaries Sniff, capture, and exploit radio communication protocols, such as Bluetooth Low Energy (BLE), and ZigBee Who This Book is For Those interested in learning about IoT security, such as pentesters working in different domains, embedded device developers, or IT people wanting to move to an Internet of Things security role.

The Internet of Things

Get Started Fast with Apache Hadoop® 2, YARN, and Today's Hadoop Ecosystem With Hadoop 2.x and YARN, Hadoop moves beyond MapReduce to become practical for virtually any type of data processing. Hadoop 2.x and the Data Lake concept represent a radical shift away from conventional approaches to data usage and storage. Hadoop 2.x installations offer

unmatched scalability and breakthrough extensibility that supports new and existing Big Data analytics processing methods and models. Hadoop® 2 Quick-Start Guide is the first easy, accessible guide to Apache Hadoop 2.x, YARN, and the modern Hadoop ecosystem. Building on his unsurpassed experience teaching Hadoop and Big Data, author Douglas Eadline covers all the basics you need to know to install and use Hadoop 2 on personal computers or servers, and to navigate the powerful technologies that complement it. Eadline concisely introduces and explains every key Hadoop 2 concept, tool, and service, illustrating each with a simple "beginning-to-end" example and identifying trustworthy, up-to-date resources for learning more. This guide is ideal if you want to learn about Hadoop 2 without getting mired in technical details. Douglas Eadline will bring you up to speed quickly, whether you're a user, admin, devops specialist, programmer, architect, analyst, or data scientist. Coverage Includes Understanding what Hadoop 2 and YARN do, and how they improve on Hadoop 1 with MapReduce Understanding Hadoop-based Data Lakes versus RDBMS Data Warehouses Installing Hadoop 2 and core services on Linux machines, virtualized sandboxes, or clusters Exploring the Hadoop Distributed File System (HDFS) Understanding the essentials of MapReduce and YARN application programming Simplifying programming and data movement with Apache Pig, Hive, Sqoop, Flume, Oozie, and HBase Observing application progress, controlling jobs, and managing workflows Managing Hadoop efficiently with Apache Ambari–including recipes for HDFS to NFSv3 gateway, HDFS snapshots, and YARN configuration Learning

basic Hadoop 2 troubleshooting, and installing Apache Hue and Apache Spark

Raspberry Pi IoT Projects

802.11 Wireless LAN Fundamentals gives you the background and practical details you need to select, design, install, and run your own WLAN. This book begins with an overview of Ethernet technologies, 802.11 standards, and physical layer technologies, providing you with a frame of reference for the rest of the book. Subsequent chapters address challenges and solutions associated with security, mobility, and QoS. Radio frequency fundamentals are reviewed in detail, as are site-surveying methods. A series of case studies that highlight WLAN design considerations in various business environments helps place all the concepts covered in this book in the context of real-world applications.

802.11 Wireless LAN Fundamentals

Current hype aside, the Internet of Things will ultimately become as fundamental as the Internet itself, with lots of opportunities and trials along the way. To help you navigate these choppy waters, this practical guide introduces a dedicated methodology for businesses preparing to transition towards IoT-based business models. With a set of best practices based on case study analysis, expert interviews, and the authors' own experience, the Ignite | IoT Methodology outlined in this book delivers actionable guidelines to assist you with IoT strategy

management and project execution. You'll also find a detailed case study of a project fully developed with this methodology. This book consists of three parts: Illustrative case studies of selected IoT domains, including smart energy, connected vehicles, manufacturing and supply chain management, and smart cities The Ignite | IoT Methodology for defining IoT strategy, preparing your organization for IoT adoption, and planning and executing IoT projects A detailed case study of the IIC Track & Trace testbed, one of the first projects to be fully developed according to the Ignite | IoT Methodology

Hands-On Artificial Intelligence for IoT

Network Business Series Justify Your Network Investment The definitive guide to IPv6 decision making for non-technical business leaders Every year, organizations rely on Internet applications and services more deeply—and every year, Internet infrastructure grows more powerful and complex. As the limitations of traditional IPv4 addressing become increasingly apparent, many decision makers recognize that a transition to IPv6 is needed far sooner than anticipated. Global IPv6 Strategies gives non-technical decision makers the information to plan and execute an orderly, efficient migration to IPv6—and reap the business benefits. This book's authors offer practical scenarios, proven best practices, and real-world case studies drawn from their unsurpassed experience helping enterprises and service providers move to IPv6. Writing for non-technical decision makers, they systematically review

the costs, benefits, impacts, and opportunities associated with IPv6 migration. Their insights and strategies can help you address both the technical side of IPv6 and the rarely discussed organizational issues that can make or break your transition. Patrick Grossetete, manager of Product Management at Cisco®, is responsible for key Cisco IOS® software technologies including IPv6 and IP Mobility. A member of the IPv6 Forum Technical Directorate, he has been honored with the IPv6 Forum Internet Pioneer Award. Ciprian P. Popoviciu, PhD, CCIE® No. 4499, technical leader at Cisco, focuses on architecting, designing, and testing large IPv6 network deployments for service providers and enterprises worldwide. Grossetete and Popoviciu co-authored Deploying IPv6 Networks (Cisco Press). Fred Wettling manages architecture and strategic planning for Bechtel. Wettling is a member of the IEEE, North American IPv6 Task Force, and IPv6 Forum; directs the IPv6 Business Council; chaired the Network Applications Consortium (NAC); and served on the President's National Security Telecommunications Advisory Committee Next Generation Network Task Force. Understand how efficient IP communications are rapidly becoming even more central to business and economic growth. Get past the "IPv4 vs. IPv6" myths that prevent effective decision making and planning. Objectively assess the constraints of existing IPv4 infrastructures—and learn how IPv6 can overcome them. Develop and analyze the business case for IPv6—with help from real-world, never-before-published case studies. Identify hidden business opportunities IPv6 can unleash. Choose the optimal IPv6 adoption strategy for your enterprise or

organization. Learn realistic best practices for planning successful migrations This volume is in the Network Business Series offered by Cisco Press®. Books in this series provide IT executives, decision makers, and networking professionals with pertinent information about today's most important technologies and business strategies. Category: Networking Technology Covers: IPv6

Hands-On IoT Solutions with Blockchain

Internet of Things emphasizes on the efficient use of internet and wireless network for connecting devices in day to day life. It gives a step-by-step explanation of the connecting interface of hardware with software. This classic text is a vital study guide for the students to master their IoT skills. Salient Features: - Core concepts of hardware and software for Internet of Things - Coverage of latest concepts like RaspberyPi, Arduino - Coverage of Security and threats in IoT scenarios. - Step by step pro typing and designing of IoT Applications

Embedded Software for the IoT

This book reveals the concepts and methods powering perhaps the most ambitious technological concept of the twenty-first century - the Internet of Things (IoT) - and parades all the ridiculously named gadgets techies imagined to saturate the market before the competition.

Fax, Modem, and Text for IP Telephony

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

ROMANCE ACTION & ADVENTURE MYSTERY & THRILLER BIOGRAPHIES & HISTORY CHILDREN'S YOUNG ADULT FANTASY HISTORICAL FICTION HORROR LITERARY FICTION NON-FICTION SCIENCE FICTION