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KEY=MOST - LACI PITTS

Machine-to-machine (M2M) Communications Architecture, Performance and Applications Elsevier Part one of Machine-to-Machine (M2M) Communications covers machine-to-machine systems, architecture and components. Part two assesses performance management techniques for M2M communications. Part three looks at M2M applications, services, and standardization. Machine-to-machine communications refers to autonomous communication between devices or machines. This book serves as a key resource in M2M, which is set to grow significantly and is expected to generate a huge amount of additional data traffic and new revenue streams, underpinning key areas of the economy such as the smart grid, networked homes, healthcare and transportation. Examines the opportunities in M2M for businesses Analyses the optimisation and development of M2M communications Chapters cover aspects of access, scheduling, mobility and security protocols within M2M communications

DigiWorld 2005 : télécoms, Internet, médias : les enjeux du numérique COMMUNICATIONS & STRATEGIES Succédant à une période de crise et de doute, l'année écoulée a connu un début de banalisation de l'accès à Internet haut débit dans beaucoup de pays entraînant un essor remarquable des usages (commerce électronique, messagerie instantanée, blogs), une nouvelle génération de produits dans l'électronique grand public (écrans plats, magnétoscopes à disque dur, lecteurs MP3,...), le lancement sur les principaux marchés des services mobiles de 3ème génération, et de multiples annonces dans le domaine de la télévision (Télévision Numérique de Terre, TV sur ADSL, premiers tests de télévision sur mobile, TV Haute Définition). Ces innovations s'accompagnent de nombreuses questions tant elles remettent en cause les métiers et les découpages traditionnels des marchés entre les acteurs des télécommunications, de l'Informatique et de l'EGP, de la télévision et de la musique, sans compter le poids croissant des nouveaux intermédiaires à l'instar des moteurs de recherche sur Internet. Comment vont s'organiser les modèles gagnant-gagnant entre les acteurs du contenu et des réseaux ? Quelles nouvelles pratiques de consommation vont s'affirmer ? Le secteur des mobiles saura-t-il maintenir sa croissance face aux infrastructures pour partie alternatives (WiMax et Wi-Fi), l'émergence de la Voix sur IP ou des opérateurs virtuels ? Les logiciels libres peuvent-ils acquérir une place centrale dans les plates-formes applicatives des entreprises ? Quelle sera la place de l'Europe dans le DigiWorld face aux Etats-Unis, au Japon et à la Corée du Sud, mais aussi devant les ambitions de la Chine, voire de l'Inde ? Cette cinquième édition du rapport DigiWorld fournit à travers les données de l'IDATE et les analyses de ses experts, une vision actualisée et structurée des grands défis du monde numérique.

Northern African Wireless Communications Artificial Intelligence for Sustainable Development: Theory, Practice and Future Applications Springer Nature This book highlights the latest advances in the field of artificial intelligence and related technologies, with a special focus on sustainable development and environmentally friendly artificial intelligence applications. Discussing theory, applications and research, it covers all aspects of artificial intelligence in the context of sustainable development.

TCP/IP Network Administration Help for Unix System Administrators "O'Reilly Media, Inc." This complete guide to setting up and running a TCP/IP network is essential for network administrators, and invaluable for users of home systems that access the Internet. The book starts with the fundamentals -- what protocols do and how they work, how addresses and routing are used to move data through the network, how to set up your network connection -- and then covers, in detail, everything you need to know to exchange information via the Internet. Included are discussions on advanced routing protocols (RIPv2, OSPF, and BGP) and the gated software package that implements them, a tutorial on configuring important network services -- including DNS, Apache, sendmail, Samba, PPP, and DHCP -- as well as expanded chapters on troubleshooting and security. TCP/IP Network Administration is also a command and syntax reference for important packages such as gated, pppd, named, dhcpcd, and sendmail. With coverage that includes Linux, Solaris, BSD, and System V TCP/IP implementations, the third edition contains: Overview of TCP/IP Delivering the data Network services Getting started M Basic configuration Configuring the interface Configuring routing Configuring DNS Configuring network servers Configuring sendmail Configuring Apache Network security Troubleshooting Appendices include dip, pppd, and chat reference, a gated reference, a dhcpcd reference, and a sendmail reference This new edition includes ways of configuring Samba to provide file and print sharing on networks that integrate Unix and Windows, and a new chapter is dedicated to the important task of configuring the Apache web server. Coverage of network security now includes details on OpenSSH, stunnel, ppp, iptables, and the access control mechanism in xinetd. Plus, the book offers updated information about DNS, including details on BIND 8 and BIND 9, the role of classless IP addressing and network prefixes, and the changing role of registrars. Without a doubt, TCP/IP Network Administration, 3rd Edition is a must-have for all network administrators and anyone who deals with a network that transmits data over the Internet.

Internet of Things From Hype to Reality The Road to Digitization Springer 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

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

Internet of Things Applications From Research and Innovation to Market Deployment Internet of Things Applications aims to provide a broad overview of various topics of Internet of Things (IoT) from the research, innovation, and development priorities to enabling technologies, nanoelectronics, cyber physical systems, architecture, interoperability, and industrial applications. It is intended to be a standalone book in a series that covers the IoT activities of the Internet of Things European Research Cluster (IERC) from technology to international cooperation and the global "state of play." The book builds on the ideas put forward by the IERC Strategic Research Agenda and presents global views and state-of-the-art results on the challenges the research, development, and deployment of IoT face at the global level. IoT is creating a revolutionary new paradigm with opportunities in every industry, including Health Care, Pharmaceuticals, Food and Beverage, Agriculture, Computer, Electronics Telecommunications, Automotive, Aeronautics, Transportation Energy, and Retail, to apply the massive potential of the IoT to achieving real-world solutions. The beneficiaries will include semiconductor companies, device and product companies, infrastructure software companies, application software companies, consulting companies, and telecommunication and cloud service providers. IoT will create new revenues annually for these stakeholders and potentially create substantial market share shakeups due to increased technology competition. The IoT will fuel technology innovation by creating the means for machines to communicate several different types of information with one another. At the same time, it will contribute to the increased value of information created by the number of interconnections among things and the transformation of the processed information into knowledge shared in the Internet of Everything. The success of IoT depends strongly on enabling technology development, market acceptance, and standardization, which provides interoperability, compatibility, reliability, and effective operations on a global scale. The connected devices are part of ecosystems connecting people, processes, data, and things which are communicating in the cloud, using the increased storage and computing power and pushing for standardization of communication and metadata. In this context, product manufacturers have to address security, privacy, safety, and trust through the life cycle of their products, from design to the support processes. The IoT developments address the whole IoT spectrum - from devices at the edge to cloud and datacentres on the backend and everything in between - through ecosystems created by industry, research, and application stakeholders that enable real-world use cases to accelerate the IoT and establish open interoperability standards and common architectures for IoT solutions. Enabling technologies such as nanoelectronics, sensors/actuators, cyber-physical systems, intelligent device management, smart gateways, telematics, smart network infrastructure, cloud computing, and software technologies will create new products, services, and interfaces by creating smart environments and smart spaces with applications ranging from Smart Cities, smart transport, buildings, energy, and grid to smart health and life. Technical topics discussed in the book include: * Introduction * Internet of Things Strategic Research and Innovation Agenda * Internet of Things in the industrial context: Time for deployment. * Integration of heterogeneous smart objects, applications and services * Evolution from device to semantic and business interoperability * Software define and virtualization of network resources * Innovation through interoperability and standardisation when everything is connected anytime at anyplace * Dynamic context-aware scalable and trust-based IoT Security, Privacy framework * Federated Cloud service management and the Internet of Things * Internet of Things Applications

Digitising the Industry - Internet of Things Connecting the Physical, Digital and Virtual Worlds River Publishers This book provides an overview of the current Internet of Things (IoT) landscape, ranging from the research, innovation and development priorities to enabling technologies in a global context. A successful deployment of IoT technologies requires integration on all layers, be it cognitive and semantic aspects, middleware components, services, edge devices/machines and infrastructures. It is intended to be a standalone book in a series that covers the Internet of Things activities of the IERC - Internet of Things European Research Cluster from research to technological innovation, validation and deployment. The book builds on the ideas put forward by the European Research Cluster and the IoT European Platform Initiative (IoT-EPI) and presents global views and state of the art results on the challenges facing the research, innovation, development and deployment of IoT in the next years. The IoT is bridging the physical world with virtual world and requires sound information processing capabilities for the "digital shadows" of these real things. The research and innovation in nanoelectronics, semiconductor, sensors/actuators, communication, analytics technologies, cyber-physical systems, software, swarm intelligent and deep learning systems are essential for the successful deployment of IoT applications. The emergence of IoT platforms with multiple functionalities enables rapid development and lower costs by offering standardised components that can be shared across multiple solutions in many industry verticals. The IoT applications will gradually move from vertical, single purpose solutions to multi-

purpose and collaborative applications interacting across industry verticals, organisations and people, being one of the essential paradigms of the digital economy. Many of those applications still have to be identified and involvement of end-users including the creative sector in this innovation is crucial. The IoT applications and deployments as integrated building blocks of the new digital economy are part of the accompanying IoT policy framework to address issues of horizontal nature and common interest (i.e. privacy, end-to-end security, user acceptance, societal, ethical aspects and legal issues) for providing trusted IoT solutions in a coordinated and consolidated manner across the IoT activities and pilots. In this context IoT ecosystems offer solutions beyond a platform and solve important technical challenges in the different verticals and across verticals. These IoT technology ecosystems are instrumental for the deployment of large pilots and can easily be connected to or build upon the core IoT solutions for different applications in order to expand the system of use and allow new and even unanticipated IoT end uses. Technical topics discussed in the book include: Introduction Digitising industry and IoT as key enabler in the new era of Digital Economy IoT Strategic Research and Innovation Agenda IoT in the digital industrial context: Digital Single Market Integration of heterogeneous systems and bridging the virtual, digital and physical worlds Federated IoT platforms and interoperability Evolution from intelligent devices to connected systems of systems by adding new layers of cognitive behaviour, artificial intelligence and user interfaces. Innovation through IoT ecosystems Trust-based IoT end-to-end security, privacy framework User acceptance, societal, ethical aspects and legal issues Internet of Things Applications **From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence** Academic Press 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 **IBM IMS Solutions for Automating Database Management** IBM Redbooks Over the last few years, IBM® IMSTM and IMS tools have been modernizing the interfaces to IMS and the IMS tools to bring them more in line with the current interface designs. As the mainframe software products are becoming more integrated with the Windows and mobile environments, a common approach to interfaces is becoming more relevant. The traditional 3270 interface with ISPF as the main interface is no longer the only way to do some of these processes. There is also a need to provide more of a common looking interface so the tools do not have a product-specific interface. This allows more cross product integration. Eclipse and web-based interfaces being used in a development environment, tooling using those environments provides productivity improvements in that the interfaces are common and familiar. IMS and IMS tools developers are making use of those environments to provide tooling that will perform some of the standard DBA functions. This book will take some selected processes and show how this new tooling can be used. This will provide some productivity improvements and also provide a more familiar environment for new generations DBAs. Some of the functions normally done by DBA or console operators can now be done in this eclipse-based environment by the application developers. This means that the need to request these services from others can be eliminated. This IBM Redbooks® publication examines specific IMS DBA processes and highlights the new IMS and IMS tools features, which show an alternative way to accomplish those processes. Each chapter highlights a different area of the DBA processes like: PSB creation Starting/stopping a database in an IMS system Recovering a database Cloning a set of databases **Internet of Things Converging Technologies for Smart Environments and Integrated Ecosystems** River Publishers The book aims to provide a broad overview of various topics of the Internet of Things (IoT) from the research and development priorities to enabling technologies, architecture, security, privacy, interoperability and industrial applications. It is intended to be a stand-alone book in a series that covers the Internet of Things activities of the IERC - Internet of Things European Research Cluster - from technology to international cooperation and the global "state of play." The book builds on the ideas put forward by the European Research Cluster on the Internet of Things Strategic Research and Innovation Agenda and presents views and state of the art results on the challenges facing the research, development and deployment of IoT at the global level. Today we see the integration of Industrial, Business and Consumer Internet which is bringing together the Internet of People, Internet of Things, Internet of Energy, Internet of Vehicles, Internet of Media, Services and Enterprises in forming the backbone of the digital economy, the digital society and the foundation for the future knowledge and innovation based economy. These developments are supporting solutions for the emerging challenges of public health, aging population, environmental protection and climate change, the conservation of energy and scarce materials, enhancements to safety and security and the continuation and growth of economic prosperity. Penetration of smartphones and advances in nanoelectronics, cyber-physical systems, wireless communication, software, and Cloud computing technology will be the main drivers for IoT development. The IoT contribution is seen in the increased value of information created by the number of interconnections among things and the transformation of the processed information into knowledge shared into the Internet of Everything. The connected devices are part of ecosystems connecting people, processes, data, and things which are communicating in the Cloud using the increased storage and computing power while attempting to standardize communication and metadata. In this context, the next generation of Cloud computing technologies will need to be flexible enough to scale autonomously, adaptive enough to handle constantly changing connections and resilient enough to stand up to the huge flows of data that will occur. In 2025, analysts forecast that there will be six devices per human on the planet, which means around 50 billion more connected devices over the next 12 years. The Internet of Things market is connected to this anticipated device growth from industrial Machine to Machine (M2M) systems, smart meters and wireless sensors. Internet of Things technology will generate new services and new interfaces by creating smart environments and smart spaces with applications ranging from Smart Cities, Smart Transport, Buildings, Energy, Grid, to Smart Health and Life. **Enabling the Internet of Things From Integrated Circuits to Integrated Systems** Springer This book offers the first comprehensive view on integrated circuit and system design for the Internet of Things (IoT), and in particular for the tiny nodes at its edge. The authors provide a fresh perspective on how the IoT will evolve based on recent and foreseeable trends in the semiconductor industry, highlighting the key challenges, as well as the opportunities for circuit and system innovation to address them. This book describes what the IoT really means from the design point of view, and how the constraints imposed by applications translate into integrated circuit requirements and design guidelines. Chapter contributions equally come from industry and academia. After providing a system perspective on IoT nodes, this book focuses on state-of-the-art design techniques for IoT applications, encompassing the fundamental sub-systems encountered in Systems on Chip for IoT: ultra-low power digital architectures and circuits low- and zero-leakage memories (including emerging technologies) circuits for hardware security and authentication System on Chip design methodologies on-chip power management and energy harvesting ultra-low power analog interfaces and analog-digital conversion short-range radios miniaturized battery technologies packaging and assembly of IoT integrated systems (on silicon and non-silicon substrates). As a common thread, all chapters conclude with a prospective view on the foreseeable evolution of the related technologies for IoT. The concepts developed throughout the book are exemplified by two IoT node system demonstrations from industry. The unique balance between breadth and depth of this book: enables expert readers quickly to develop an understanding of the specific challenges and state-of-the-art solutions for IoT, as well as their evolution in the foreseeable future provides non-experts with a comprehensive introduction to integrated circuit design for IoT, and serves as an excellent starting point for further learning, thanks to the broad coverage of topics and selected references makes it very well suited for practicing engineers and scientists working in the hardware and chip design for IoT, and as textbook for senior undergraduate, graduate and postgraduate students (familiar with analog and digital circuits). **F & S Index United States Annual Smart Connected World Technologies and Applications Shaping the Future** Springer This book provides an overview of the emerging smart connected world, and discusses the roles and the usage of underlying semantic computing and Internet-of-Things (IoT) technologies. The book comprises ten chapters overall, grouped in two parts. Part I "Smart Connected World: Overview and Technologies" consists of seven chapters and provides a holistic overview of the smart connected world and its supporting tools and technologies. Part II "Applications and Case Studies" consists of three chapters that describe applications and case studies in manufacturing, smart cities, health, and more. Each chapter is self-contained and can be read independently; taken together, readers get a bigger picture of the technological and application landscape of the smart connected world. This book is of interest for researchers, lecturers, and practitioners in Semantic Web, IoT and related fields. It can serve as a reference for instructors and students taking courses in hybrid computing getting abreast of cutting edge and future directions of a connected ecosystem. It will also benefit industry professionals like software engineers or data scientists, by providing a synergy between Web technologies and applications. This book covers the most important topics on the emerging field of the smart connected world. The contributions from leading active researchers and practitioners in the field are thought provoking and can help in learning and further research. The book is a valuable resource that will benefit academics and industry. It will lead to further research and advancement of the field. Bharat K. Bhargava, Professor of Computer Science, Purdue University, United States **Green Communications Principles, Concepts and Practice** John Wiley & Sons This book provides a comprehensive view of green communications considering all areas of ICT including wireless and wired networks. It analyses particular concepts and practices, addressing holistic approaches in future networks considering a system perspective. It makes full use of tables, illustrations, performance graphs, case studies and examples making it accessible for a wide audience. **IoT Fundamentals Networking Technologies, Protocols, and Use Cases for the Internet of Things** Cisco Press 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 **The Internet of Things Enabling Technologies, Platforms, and Use Cases** CRC Press 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. **Internet of Things and Sensors Networks in 5G Wireless Communications** MDPI The Internet of Things (IoT) has attracted much attention from society, industry and academia as a promising technology that can enhance day to day activities, and the creation of new business models, products and services, and serve as a broad source of research topics and ideas. A future digital society is envisioned, composed of numerous wireless connected sensors and devices. Driven by huge demand, the massive IoT (mIoT) or massive machine type communication (mMTC) has been identified as one of the three main communication scenarios for 5G. In addition to connectivity, computing and storage and data management are also long-standing issues for low-cost devices and sensors. The book is a collection of outstanding technical research and industrial papers covering new research results, with a wide range of features

within the 5G-and-beyond framework. It provides a range of discussions of the major research challenges and achievements within this topic. **Industry 4.0 A Global Perspective** Routledge The Fourth Industrial Revolution, also known as Industry 4.0, refers to the industrial paradigm bringing together the digital and physical worlds through the cyber-physical Systems, enhanced by the Internet of Things aimed to increase the effectiveness of human-machine cooperation (HMC). This book deals with issues related to the challenges of Industry 4.0 that are faced by enterprises and universities. Contrary to most publications on the subject, it covers both technological and business aspects of these challenges and shows how strong they are intertwined, bringing new value to readers. The book also presents new findings that will guide enterprises through Industry 4.0. This book offers readers an in-depth discussion of important areas of enterprises' activities in the context of Industry 4.0. The first area concerns human resources management; in particular, what new employee competencies will be needed on the labor market, how to use modern concepts (e.g. design thinking), and how to manage multi-national teams of employees. The second area is related to marketing and covers issues regarding customized products. The third area is devoted to technical aspects such as autonomous vehicles, Internet of Things (IoT), radio-frequency identification (RFID) systems, and Bluetooth Low Energy (BLE) technology. The fourth area concerns IT systems, including systems that support work and business management, strategic information systems, and cyber-physical systems. Aimed at researchers, academics, practitioners, and students, it will be of value to those in the fields of human resource management, marketing, organizational studies, and management of technology and innovation. **Wireless Sensor and Actuator Networks for Smart Cities** MDPI This book is a printed edition of the Special Issue "Wireless Sensor and Actuator Networks for Smart Cities" that was published in JSAN **The Tactile Internet** John Wiley & Sons The Tactile Internet will change the landscape of communication by introducing a new paradigm that enables the remote delivery of haptic data. This book answers the many questions surrounding the Tactile Internet, including its reference architecture and adapted compression methods for conveying haptic information. It also describes the key enablers for deploying the applications of the Tactile Internet. As an antecedent technology, the IoT is tackled, explaining the differences and similarities between the Tactile Internet, the Internet of Things and the Internet of Everything. The essentials of teleoperation systems are summarized and the challenges that face this paradigm in its implementation and deployment are also discussed. Finally, a teleoperation case study demonstrating an application of the Tactile Internet is investigated to demonstrate its functionalities, architecture and performance. **Internet of Things Technology, Applications and Standardization** BoD – Books on Demand The term "Internet of Things" (IoT) refers to an ecosystem of interconnected physical objects and devices that are accessible through the Internet and can communicate with each other. The main strength of the IoT vision is the high impact it has created and will continue to do so on several aspects of the everyday life and behavior of its potential users. This book presents some of the state-of-the-art research work in the field of the IoT, especially on the issues of communication protocols, interoperability of protocols and semantics, trust security and privacy issues, reference architecture design, and standardization. It will be a valuable source of knowledge for researchers, engineers, practitioners, and graduate and doctoral students who are working in various fields of the IoT. It will also be useful for faculty members of graduate schools and universities. **Demystifying Internet of Things Security Successful IoT Device/Edge and Platform Security Deployment** Apress Break down the misconceptions of the Internet of Things by examining the different security building blocks available in Intel Architecture (IA) based IoT platforms. This open access book reviews the threat pyramid, secure boot, chain of trust, and the SW stack leading up to defense-in-depth. The IoT presents unique challenges in implementing security and Intel has both CPU and Isolated Security Engine capabilities to simplify it. This book explores the challenges to secure these devices to make them immune to different threats originating from within and outside the network. The requirements and robustness rules to protect the assets vary greatly and there is no single blanket solution approach to implement security. Demystifying Internet of Things Security provides clarity to industry professionals and provides an overview of different security solutions What You'll Learn Secure devices, immunizing them against different threats originating from inside and outside the network Gather an overview of the different security building blocks available in Intel Architecture (IA) based IoT platforms Understand the threat pyramid, secure boot, chain of trust, and the software stack leading up to defense-in-depth Who This Book Is For Strategists, developers, architects, and managers in the embedded and Internet of Things (IoT) space trying to understand and implement the security in the IoT devices/platforms. **Internet of Things with Arduino Cookbook** Packt Publishing Ltd Over 60 recipes will help you build smart IoT solutions and surprise yourself with captivating IoT projects you thought only existed in Bond movies About This Book This book offers key solutions and advice to address the hiccups faced when working on Arduino-based IoT projects in the real world Take your existing skills and capabilities to the next level by building challenging IoT applications with ease. Be the tech disruptor you always wanted to be with key recipes that help you solve Arduino IoT related problems smarter and faster. Put IoT to work through recipes on building Arduino-based devices that take control of your home, health, and life! Who This Book Is For This book is primarily for tech enthusiasts and early IoT adopters who would like to make the most of IoT and address the challenges encountered while developing IoT-based applications with Arduino. This book is also good for developers with basic electronics knowledge who need help to successfully build Arduino projects. What You Will Learn Monitor several Arduino boards simultaneously Tweet sensor data directly from your Arduino board Post updates on your Facebook wall directly from your Arduino board Create an automated access control with a fingerprint sensor Control your entire home from a single dashboard Make a GPS tracker that you can track in Google Maps Build a live camera that streams directly from your robot In Detail Arduino is a powerful and very versatile platform used by millions of people around the world to create DIY electronics projects. It can be connected to a wide variety of sensors and other components, making it the ideal platform to build amazing Internet of Things (IoT) projects on—the next wave in the era of computing. This book takes a recipe-based approach, giving you precise examples on how to build IoT projects of all types using the Arduino platform. You will come across projects from several fields, including the popular robotics and home automation domains. Along with being introduced to several forms of interactions within IoT, including projects that directly interact with well-known web services such as Twitter, Facebook, and Dropbox we will also focus on Machine-to-Machine (M2M) interactions, where Arduino projects interact without any human intervention. You will learn to build a few quick and easy-to-make fun projects that will really expand your horizons in the world of IoT and Arduino. Each chapter ends with a troubleshooting recipe that will help you overcome any problems faced while building these projects. By the end of this book, you will not only know how to build these projects, but also have the skills necessary to build your own IoT projects in the future. Style and approach This book takes a recipe-based approach, giving you precise examples on how to build IoT projects using the Arduino platform. You will learn to build fun and easy projects through a task-oriented approach. **Advanced Higher Biology 'Official SQA Past Papers'** provide perfect exam preparation. As well as delivering at least three years of actual past papers - including the 2008 exam - all papers are accompanied by examiner-approved answers to show students how to write the best responses for the most marks. **The Machine Gunners** Nelson Thornes It's 1940, and Britain is at war. Young Chas McGill has the second-best collection of war souvenirs in town, but desperately wants it to be the best. Amidst the bombs and air raids, Chas and his friends plan their own war effort in their newly built bunker. Friendships are forged and loyalties tested, in the adventure of a lifetime. Robert Westall's "The Machine Gunners" has been read, studied - and loved - by successive generations of younger readers. It won the Carnegie Medal and was voted one of the most important children's novels of the past seventy years. This thrilling stage adaptation comes from the award-winning playwright Ali Taylor, and premiered at the Polka Theatre, London. It provides rich opportunities for discussion in the classroom, and for staging by schools, youth theatres and amateur companies. **ICCCE 2019 Proceedings of the 2nd International Conference on Communications and Cyber Physical Engineering** Springer This book is a collection research papers and articles from the 2nd International Conference on Communications and Cyber-Physical Engineering (ICCCE – 2019), held in Pune, India in Feb 2019. Discussing the latest developments in voice and data communication engineering, cyber-physical systems, network science, communication software, image- and multimedia processing research and applications, as well as communication technologies and other related technologies, it includes contributions from both academia and industry. **Cyber Security A Crisis of Prioritization Learning SQL Master SQL Fundamentals** O'Reilly Media Updated for the latest database management systems -- including MySQL 6.0, Oracle 11g, and Microsoft's SQL Server 2008 -- this introductory guide will get you up and running with SQL quickly. Whether you need to write database applications, perform administrative tasks, or generate reports, Learning SQL, Second Edition, will help you easily master all the SQL fundamentals. Each chapter presents a self-contained lesson on a key SQL concept or technique, with numerous illustrations and annotated examples. Exercises at the end of each chapter let you practice the skills you learn. With this book, you will: Move quickly through SQL basics and learn several advanced features Use SQL data statements to generate, manipulate, and retrieve data Create database objects, such as tables, indexes, and constraints, using SQL schema statements Learn how data sets interact with queries, and understand the importance of subqueries Convert and manipulate data with SQL's built-in functions, and use conditional logic in data statements Knowledge of SQL is a must for interacting with data. With Learning SQL, you'll quickly learn how to put the power and flexibility of this language to work. **Internet of Things. User-Centric IoT First International Summit, IoT360 2014, Rome, Italy, October 27-28, 2014, Revised Selected Papers, Part I** Springer The two-volume set LNICST 150 and 151 constitutes the thoroughly refereed post-conference proceedings of the First International Internet of Things Summit, IoT360 2014, held in Rome, Italy, in October 2014. This volume contains 74 full papers carefully reviewed and selected from 118 submissions at the following four conferences: the First International Conference on Cognitive Internet of Things Technologies, COIOTE 2014; the First International Conference on Pervasive Games, PERGAMES 2014; the First International Conference on IoT Technologies for HealthCare, HealthyIoT 2014; and the First International Conference on IoT as a Service, IoTaaS 2014. The papers cover the following topics: user-centric IoT; artificial intelligence techniques for the IoT; the design and deployment of pervasive games for various sectors, such as health and wellbeing, ambient assisted living, smart cities and societies, education, cultural heritage, and tourism; delivery of electronic healthcare; patient care and medical data management; smart objects; networking considerations for IoT; platforms for IoTaaS; adapting to the IoT environment; modeling IoTaaS; machine to machine support in IoT. **Smart Monitoring and Control in the Future Internet of Things** The Internet of Things (IoT) and related technologies have the promise of realizing pervasive and smart applications which, in turn, have the potential of improving the quality of life of people living in a connected world. According to the IoT vision, all things can cooperate amongst themselves and be managed from anywhere via the Internet, allowing tight integration between the physical and cyber worlds and thus improving efficiency, promoting usability, and opening up new application opportunities. Nowadays, IoT technologies have successfully been exploited in several domains, providing both social and economic benefits. The realization of the full potential of the next generation of the Internet of Things still needs further research efforts concerning, for instance, the identification of new architectures, methodologies, and infrastructures dealing with distributed and decentralized IoT systems; the integration of IoT with cognitive and social capabilities; the enhancement of the sensing-analysis-control cycle; the integration of consciousness and awareness in IoT environments; and the design of new algorithms and techniques for managing IoT big data. This Special Issue is devoted to advancements in technologies, methodologies, and applications for IoT, together with emerging standards and research topics which would lead to realization of the future Internet of Things. **Advances in Production Management Systems. Production Management for the Factory of the Future IFIP WG 5.7 International Conference, APMS 2019, Austin, TX, USA, September 1-5, 2019, Proceedings, Part I** Springer Nature The two-volume set IFIP AICT 566 and 567 constitutes the refereed proceedings of the International IFIP WG 5.7 Conference on Advances in Production Management Systems, APMS 2019, held in Austin, TX, USA. The 161 revised full papers presented were carefully reviewed and selected from 184 submissions. They discuss globally pressing issues in smart manufacturing, operations management, supply chain management, and Industry 4.0. The papers are organized in the following topical sections: lean production; production management in food supply chains; sustainability and reconfigurability of manufacturing systems; product and asset life cycle management in smart factories of industry 4.0; variety and complexity management in the era of industry 4.0; participatory methods for supporting the career choices in industrial engineering and management education; blockchain in supply chain management; designing and delivering smart services in the digital age; operations management in engineer-to-order manufacturing; the operator 4.0 and the Internet of Things, services and people; intelligent diagnostics and maintenance solutions for smart manufacturing; smart supply networks; production management theory and methodology; data-driven production management; industry 4.0 implementations; smart factory and IIOT; cyber-physical systems; knowledge management in design and manufacturing; collaborative product development; ICT for collaborative manufacturing; collaborative technology; applications of machine learning in production management; and collaborative technology. **When Things Start to Think Integrating Digital Technology into the Fabric of Our Lives** Henry Holt and Company This is a book for people who want to know what the future is going to look like and for people who want to know how to create the future. Gershenfeld offers a glimpse at the brave new post-computerized world, where microchips work for us instead of against us. He argues that we waste the potential of the microchip when we confine it to a box on our desk: the real electronic revolution will come when computers have all but disappeared into the walls around us. Imagine a digital book that looks like a traditional book printed on paper and is pleasant to read in bed but has all the mutability of a screen display. How about a personal fabricator that can organize digitized atoms into anything you want, or a musical keyboard that can be woven into a denim jacket? In *When Things Start to Think*, Gershenfeld tells the story of his Things that Think group at MIT's Media Lab, the group of innovative scientists and researchers dedicated to integrating digital technology into the fabric of our lives. **IBM Business Process Manager Version 8.0 Production Topologies** IBM Redbooks This IBM® Redbooks® publication describes how to build production topologies for IBM Business Process Manager V8.0. This book is an update of the existing book IBM Business Process Manager V7.5 Production Topologies, SG24-7976. It is intended for IT Architects and IT Specialists who want to understand and implement these topologies. Use this book to select the appropriate production topologies for an environment, then follow the step-by-step instructions to build those topologies. Part 1 introduces IBM Business Process Manager and provides an overview of basic topology components, and Process Server and Process Center. This part also provides an overview of the production topologies described in this book, including a selection criteria for when to select a topology. IBM Business Process Manager security and the presentation layer are also addressed in this part. Part 2

provides a series of step-by-step instructions for creating production topology environments by using deployment environment patterns. This process includes topologies that incorporate IBM Business Monitor. This part also describes advanced topology topics. Part 3 covers post installation instructions for implementing production topology environments such as configuring IBM Business Process Manager to use IBM HTTP Server and WebSphere® proxy server. **SAP Applications on IBM PowerVM** IBM Redbooks IBM® invented the virtualization technology starting in the 1960s on the mainframe, and the functionalities evolved and were ported to other platforms and improved the reliability, availability, and serviceability (RAS) features. With virtualization, you achieve better asset utilization, reduced operating costs, and faster responsiveness to changing business demands. Every technology vendor in the SAP ecosystem understands virtualization as slightly different capabilities on different levels (storage and server hardware, processor, memory, I/O resources or the application, and so on). It is important to understand exactly what functionality is offered and how it supports the client's business requirements. In this IBM Redbooks® publication we focus on server virtualization technologies in the IBM Power Systems™ hardware, AIX®, IBM i, and Linux space and what they mean specifically for SAP applications running on this platform. SAP clients can leverage the technology that the IBM Power Systems platform offers. In this book, we describe the technologies and functions, what they mean, and how they apply to the SAP system landscape. **Internet of Things: A Hands-On Approach** VPT 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 (IoT) 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. **Science Citation Index Vols. for 1964-** have guides and journal lists. **Wireless Sensor Networks Technology, Protocols, and Applications** John Wiley & Sons Infrastructure for Homeland Security Environments Wireless Sensor Networks helps readers discover the emerging field of low-cost standards-based sensors that promise a high order of spatial and temporal resolution and accuracy in an ever-increasing universe of applications. It shares the latest advances in science and engineering paving the way towards a large plethora of new applications in such areas as infrastructure protection and security, healthcare, energy, food safety, RFID, ZigBee, and processing. Unlike other books on wireless sensor networks that focus on limited topics in the field, this book is a broad introduction that covers all the major technology, standards, and application topics. It contains everything readers need to know to enter this burgeoning field, including current applications and promising research and development; communication and networking protocols; middleware architecture for wireless sensor networks; and security and management. The straightforward and engaging writing style of this book makes even complex concepts and processes easy to follow and understand. In addition, it offers several features that help readers grasp the material and then apply their knowledge in designing their own wireless sensor network systems: * Examples illustrate how concepts are applied to the development and application of * wireless sensor networks * Detailed case studies set forth all the steps of design and implementation needed to solve real-world problems * Chapter conclusions that serve as an excellent review by stressing the chapter's key concepts * References in each chapter guide readers to in-depth discussions of individual topics This book is ideal for networking designers and engineers who want to fully exploit this new technology and for government employees who are concerned about homeland security. With its examples, it is appropriate for use as a coursebook for upper-level undergraduates and graduate students. **The Internet of Things Key Applications and Protocols** John Wiley & Sons A project manager must not only master methods and processes, but also have the ability to deal with new, unexpected and critical situations. The book deals with these challenges, the passion for projects and the creativity which is required in order to lead projects and bring them to a successful conclusion. Experienced project managers report on exciting tasks in various countries, daily life as project managers and about their personal experiences and learning effects. Readers will experience the fascinating appeal of the job of a "project manager", which also means constantly being prepared to get into a new task. Furthermore, the book provides ideas about how to overcome social, cultural, organisational, financial, bureaucratic or other hurdles. Not only classic project managers - engineers and economists -, but also lawyers or industrial engineers, who work in projects or are interested in project work, will be inspired by this book, how personal commitment and professional, organisational and social capabilities combine to form this unique profession.