Wireless And Le Network Architectures

Provides a detailed analysis of the standards and technologies enabling applications for the wireless Internet of Things The Wireless Internet of Things: A Guide to the Lower Layers presents a practitioner’s perspective toward the Internet of Things (IoT) focusing on over-the-air interfaces used by applications such as home automation, sensor networks, smart grid, and healthcare. The author—a noted expert in the field—examines IoT as a protocol-stack detailing the physical layer of the wireless links, as both a radio and a modem, and the media access control (MAC) that enables communication in congested bands. Focusing on low-power wireless personal area networks (WPANs) the text outlines the physical and MAC layer standards used by ZigBee, Bluetooth LE, Z-Wave, and Thread. The text deconstructs these standards and provides background including relevant communication theory, modulation schemes, and access methods. The author includes a discussion on Wi-Fi and gateways, and explores their role in IoT. He introduces radio topologies used in software-defined radio implementations for the WPANs. The book also discusses channel modelling and link budget analysis for WPANs in IoT. This important text: Introduces IEEE 802.15.4, ITU-T G.9959, and Bluetooth LE as physical layer technology standards enabling wireless IoT Takes a layered approach in order to cultivate an appreciation for the various standards that enable interoperability Provides clarity on wireless standards with particular focus on actual implementation Written for IoT application and platform developers as well as digital signal processing, network, and wireless communication engineers; The Wireless Internet of Things: A Guide to the Lower Layersoffers an inclusive overview of the complex field of wireless IoT, exploring its beneficial applications that are proliferating in a variety of industries.

Systems.” The workshop consisted of seven papers selected by the Program Committee of the workshop, chaired by Guanling Chen and Wei Ding.

The next-generation of wireless communications are envisioned to be supported by heterogeneous networks by using various wireless access technologies. The popular cellular networks and wireless local area networks (WLANs) present perfectly complementary characteristics in terms of service capacity, mobility support, and quality-of-service (QoS) provisioning. The cellular/WLAN interworking is an effective way to promote the evolution of wireless networks. Interworking of Wireless LANs and Cellular Networks focuses on three aspects, namely access selection, call admission control and load sharing to investigate heterogeneous interworking for cellular/WLAN integrated networks. It not only reveals important observations but also offers useful tools for performance evaluation. The unique traffic and network characteristics are exploited to enhance interworking effectiveness. Theoretical analysis and simulation validation demonstrate benefits of cellular/WLAN interworking in real networks. Last but not the least, this brief highlights promising future research directions to guide interested readers.

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

There have been recent advancements in wireless network technologies such as wireless virtualization to accommodate the exponential growth in demand, as well as to increase energy and infrastructure efficiencies. This SpringerBrief discusses the user-association and resource-allocation aspects in Virtualized Wireless Networks (VWNs) and highlights key technology innovations to meet their requirements. Various issues in practical implementation of VWNs are discussed along with potential techniques such as Massive MIMO, Cloud-Radio Access Network (C-RAN), and non-orthogonal multiple access (NOMA). This SpringerBrief will target researchers and professionals working on current and next-generation wireless networks. The content is also valuable for advanced-level students interested in wireless communications and signal processing for communications.

Learn the essentials of wireless networking Configure, manage, and secure wireless networks using the step-by-step details in this practical resource. Wireless Network Administration: A Beginner's Guide shows you how to work with the latest wireless networking standards, including the 802.11x family, on Windows, Mac, and Linux platforms. The book covers wireless network planning, design, hardware, services, protocols, device configuration, security, troubleshooting, and more. This hands-on guide will get you started administering wireless networks in no time. Get details on regulatory and technical organizations Learn about different wireless standards and the basics of RF technologies Understand and determine client-side hardware requirements, including chipsets and various wireless interfaces Select infrastructure-side wireless hardware, such as antennas, wireless access points (WAPs), residential gateways, switches/controllers, routers, and bridges Learn about WLANs, WWANs, WMANs, and WPANs Work with standard wireless network protocols--TCP/IP (IPv4 and IPv6) Understand DNS, DHCP, and other supporting infrastructure services Secure wireless networks using cryptography Configure infrastructure devices, including a wireless access point device and wireless network switches and controllers Configure and manage wireless Microsoft Windows, Mac OS X, and Linux clients Plan, design, survey, deploy, and troubleshoot your wireless network

Emerging Communication Technologies Based on Wireless Sensor Networks: Current Research and Future Applications fills a gap in the existing literature by combining a plethora of WSN-based emerging technologies into a single source so that researchers can form opinions regarding these technologies. It presents different types of emerging communication technologies based on WSNs and describes how wireless sensor networks can be integrated with other communication technologies. It covers many of the new techniques and demonstrates the application of WSNs. The book’s 14 chapters are divided into four parts. The first part covers the basics of wireless sensor networks and their principal working methods. The authors then move on to discuss different types of WSNs, characteristics of different types of emerging

technologies based on WSNs, renewable energy sources, battery replenishment strategies, and application-specific energy challenges of WSNs. The second part is dedicated to issues related to wireless body area networks (WBANs). It discusses wearable WSNs and their applications, standards, and research trends. The authors also discuss routing schemes devised for WBANs and thermal-aware routing protocols for WBANs. The third part focuses on different emerging communication technologies based on WSNs, including electromagnetic wireless nanosensor networks, WSNs in the IoT, management of WSNs through satellite networks, WSNs in smart homes, and cognitive radio technology in conjunction with WSNs. The last part of the book covers topics generally related to typical WSNs, including energy-efficient data collection in WSNs, key distribution mechanisms in WSNs, distributed data gathering algorithms for mobile WSNs, and finally, a novel mobility scheme for WSNs that supports IPv6.

An authoritative collection of research papers and surveys, Emerging Wireless Networks: Concepts, Techniques, and Applications explores recent developments in next-generation wireless networks (NGWNs) and mobile broadband networks technologies, including 4G (LTE, WiMAX), 3G (UMTS, HSPA), WiFi, mobile ad hoc networks, mesh networks, and wireles

Learn all you need to know about wireless sensor networks! Protocols and Architectures for Wireless Sensor Networks provides a thorough description of the nuts and bolts of wireless sensor networks. The authors give an overview of the state-of-the-art, putting all the individual solutions into perspective with one and other. Numerous practical examples, case studies and illustrations demonstrate the theory, techniques and results presented. The clear chapter structure, listing learning objectives, outline and summarizing key points, help guide the reader expertly through the material. Protocols and Architectures for Wireless Sensor Networks: Covers architecture and communications protocols in detail with practical implementation examples and case studies. Provides an understanding of mutual relationships and dependencies between different protocols and architectural decisions. Offers an in-depth investigation of relevant protocol mechanisms. Shows which protocols are suitable for which tasks within a wireless sensor network and in which circumstances they perform efficiently. Features an extensive website with the bibliography, PowerPoint slides, additional exercises and worked solutions. This text provides academic researchers, graduate students in computer science, computer engineering, and electrical engineering, as well as practitioners in industry and research engineers with an understanding of the specific design challenges and solutions for wireless sensor networks. Check out www.wiley.com/go/wsn for accompanying course material! "I am deeply impressed by the book of Karl & Willig. It is by far the most complete source for wireless sensor networks...The book covers almost all topics related to sensor networks, gives an amazing number of references, and, thus, is the perfect source for students, teachers, and researchers. Throughout the book the reader will find high quality text, figures, formulas, comparisons etc. - all you need for a sound basis to start sensor network research." Prof. Jochen Schiller, Institute of Computer Science, Freie Universität Berlin

Wireless Network Administration A Beginner's GuideMcGraw Hill Professional

Recent years have witnessed tremendous growth in the population of mobile users demanding high performance, reliability and quality-of-service (QoS). Wireless networks are undergoing rapid developments and dramatic changes in the underlying technologies, in order to cope with the difficulties posed by the scarce wireless resource as well as keep up with the increasing day-to-day demand for cost-effective service of multimedia applications. Predicting and optimising the performance and QoS of wireless networks using analytical modelling, simulation experiments, monitoring and testbed-based measurements are crucial to the proper design, tuning, resource management and capacity planning of such networks. This book is dedicated to review important developments and results, explore recent state-of-the-art research and discuss new strategies for performance modelling, analysis and enhancement of wireless networks. The objective is to make analytical modelling, simulation and measurement tools, and innovative performance evaluation methodology possible and understandable to a wider audience.

This book constitutes the joint refereed proceedings of the 17th International Conference on Next Generation Wired/Wireless Advanced Networks and Systems, NEW2AN 2017, the 10th Conference on Internet of Things and Smart Spaces, ruSMART 2017. The 71 revised full papers presented were carefully reviewed and selected from 202 submissions. The papers of NEW2AN focus on advanced wireless networking and applications; lower-layer communication enablers; novel and innovative approaches to performance and efficiency analysis of ad-hoc and machine-type systems; employed game-theoretical formulations, Markov chain models, and advanced queuing theory; grapheme and other emerging material, photonics and optics; generation and processing of signals; and business aspects. The ruSMART papers deal with fully-customized applications and services. The NsCC Workshop papers capture the current state-of-the-art in the field of molecular a nd nanoscale communications such as information, communication and network theoretical analysis of molecular and nanonetwork, mobility in molecular and nanonetworks; novel and practical communication protocols; routing schemes and architectures; design/engineering/evaluation of molecular and nonoscale communication systems; potential applications and interconnections to the Internet (e.g. the Internet of Nano Things).

Wireless Body Area Networks (WBANs) are expected to promote new applications for the ambulatory health monitoring of chronic patients and elderly population, aiming to improve their quality of life and independence. These networks are composed by wireless sensor nodes (WSNs) used for measuring physiological variables (e.g., glucose level in blood or body temperature) or controlling therapeutic devices (e.g., implanted insulin pumps). These nodes should exhibit a high degree of energy autonomy in order to extend their battery lifetime or even make the node supply to rely on harvesting techniques. Typically, the power budget of WSNs is dominated by the wireless link and, hence, many efforts have been directed during the last years toward the implementation of power efficient transceivers. Because of the short range (typically no more than a few meters) and low data rate (typically in between 10 kb/s and 1 Mb/s), simple communication protocols can be employed. One of these protocols, specifically tailored for WBAN applications, is the Bluetooth low energy (BLE) standard. This book describes the challenges and solutions for the design of ultra-low power transceivers for WBANs applications and presents the implementation details of a BLE transceiver prototype. Coverage includes not only the main concepts and architectures for achieving low power consumption, but also the details of the circuit design and its implementation in a standard CMOS technology.

The communication of information is a crucial point in the development of our future way of life. We are living more and more in an information society. Perhaps the more obvious applications are those devoted to distributed cooperative multimedia systems. In both industry and academia, people are involved in such projects. HPN'95 is an international forum where both communities can find a place for dialogues and interchanges. The conference is targeted to the new mechanisms, protocols, services and architectures derived from the need of emerging applications, as well as from the requirements of new communication environments. This workshop belongs to the series started in 1987 in Aachen (Germany), followed by Liege (Belgium) in 1988, Berlin (Germany) in 1991, Liege (Belgium) again in 1992 and Grenoble (France) in 1994. HPN'95 is the sixth event of the series sponsored by IFIP WG 6.4 and will be held at the Arxiduc Lluis Salvador building on the campus of the University of the Balearic Islands in Palma de Mallorca (Spain) from September 13 to 15.

Many times helpdesks have limited staff to handle the high volume of support calls. This can result in higher hold times or delays in answering your technical questions. The answer may be as simple as restarting the computer. Having the knowledge of simple technical tools

will help you avoid long hold times or a long conversation. Not only do you save yourself from frustration from long tech support calls but you also get your computer up and running quicker.

Although there are many books available on WSNs, most are low-level, introductory books. The few available for advanced readers fail to convey the breadth of knowledge required for those aiming to develop next-generation solutions for WSNs. Filling this void, Wireless Sensor Networks: From Theory to Applications supplies comprehensive coverage of WSNs. In order to provide the wide-ranging guidance required, the book brings together the contributions of domain experts working in the various subfields of WSNs worldwide. This edited volume examines recent advances in WSN technologies and considers the theoretical problems in WSN, including issues with monitoring, routing, and power control. It also details methodologies that can provide solutions to these problems. The book's 25 chapters are divided into seven parts: Data Collection Physical Layer and Interfacing Routing and Transport Protocols Energy-Saving Approaches Mobile and Multimedia WSN Data Storage and Monitoring Applications The book examines applications of WSN across a range of fields, including health, military, transportation, and mining. Addressing the main challenges in applying WSNs across all phases of our life, it explains how WSNs can assist in community development. Complete with a list of references at the end of each chapter, this book is ideal for senior undergraduate and postgraduate students, researchers, scholars, academics, industrial researchers, and practicing engineers working on WSNs. The text assumes that readers possess a foundation in computer networks, wireless communication, and basic electronics.

Wireless networks of moving objects have drawn significant attention recently. These types of networks consist of a number of autonomous or semi-autonomous wireless nodes/objects moving with diverse patterns and speeds while communicating via several radio interfaces simultaneously. To overcome current shortcomings, a number of research challenges have to be addressed in this area, ranging from initial conceptualization and modelling, to protocols and architectures engineering, and development of suitable tools, applications and services, and to the elaboration of realistic use-case scenarios by taking into account corresponding societal and economic aspects. By applying a systematic approach the objective of this book is to assess the state of the art and consolidate the main research results achieved in this area. It was prepared as the Final Publication of the COST Action IC0906 "Wireless Networking for Moving Objects (WiNeMO)". The book contains 15 chapters and is a show-case of the main outcomes of the action in line with its scientific goals. The book will serve as a valuable reference for undergraduate students, post-graduate students, educators, faculty members, researchers, engineers, and research strategists working in this field.

As we all know by now, wireless networks offer many advantages over fixed (or wired) networks. Foremost on that list is mobility, since going wireless frees you from the tether of an Ethernet cable at a desk. But that's just the tip of the cable-free iceberg. Wireless networks are also more flexible, faster and easier for you to use, and more affordable to deploy and maintain.The de facto standard for wireless networking is the 802.11 protocol, which includes Wi-Fi (the wireless standard known as 802.11b) and its faster cousin, 802.11g. With easy-to-install 802.11 network hardware available everywhere you turn, the choice seems simple, and many people dive into wireless computing with less thought and planning than they'd give to a wired network. But it's wise to be familiar with both the capabilities and risks associated with the 802.11 protocols. And 802.11 Wireless Networks: The Definitive Guide, 2nd Edition is the perfect place to start.This updated edition covers everything you'll ever need to know about wireless technology. Designed with the system administrator or serious home user in mind, it's a no-nonsense guide for setting up 802.11 on Windows and Linux. Among the wide range of topics covered are discussions on: deployment considerations network monitoring and performance tuning wireless security issues how to use and select access points network monitoring essentials wireless card configuration security issues unique to wireless networks With wireless technology, the advantages to its users are indeed plentiful. Companies no longer have to deal with the hassle and expense of wiring buildings, and households with several computers can avoid fights over who's online. And now, with 802.11 Wireless Networks: The Definitive Guide, 2nd Edition, you can integrate wireless technology into your current infrastructure with the utmost confidence.

The major expectation from the fourth generation (4G) of wireless communication networks is to be able to handle much higher data rates, allowing users to seamlessly reconnect to different networks even within the same session. Advanced Wireless Networks gives readers a comprehensive integral presentation of the main issues in 4G wireless networks, showing the wide scope and inter-relation between different elements of the network. This book adopts a logical approach, beginning each chapter with introductory material, before proceeding to more advanced topics and tools for system analysis. Its presentation of theory and practice makes it ideal for readers working with the technology, or those in the midst of researching the topic. Covers mobile, WLAN, sensor, ad hoc, bio-inspired and cognitive networks as well as discussing cross-layer optimisation, adaptability and reconfigurability Includes hot topics such as network management, mobility and hand-offs, adaptive resource management, QoS, and solutions for achieving energy efficient wireless networks Discusses security issues, an essential element of working with wireless networks Supports the advanced university and training courses in the field and includes an extensive list of references Providing comprehensive coverage of the current status of wireless networks and their future, this book is a vital source of information for those involved in the research and development of mobile communications, as well as the industry players using and selling this technology. Companion website features three appendices: Components of CRE, Introduction to Medium Access Control and Elements of Queueing Theory

With Bluetooth Low Energy (BLE), smart devices are about to become even smarter. This practical guide demonstrates how this exciting wireless technology helps developers build mobile apps that share data with external hardware, and how hardware engineers can gain easy and reliable access to mobile operating systems. This book provides a solid, high-level overview of how devices use BLE to communicate with each other. You'll learn useful low-cost tools for developing and testing BLE-enabled mobile apps and embedded firmware and get examples using various development platforms—including iOS and Android for app developers and embedded platforms for product designers and hardware engineers. Understand how data is organized and transferred by BLE devices Explore BLE's concepts, key limitations, and network topology Dig into the protocol stack to grasp how and why BLE operates Learn how BLE devices discover each other and establish secure connections Set up the tools and infrastructure for BLE application development Get examples for connecting BLE to iPhones, iPads, Android devices, and sensors Develop code for a simple device that transmits heart rate data to a mobile device

The advances in sensor design have decreased the size, weight, and cost of sensors by orders of magnitude, yet with the increase of higher spatial and temporal re- lution and accuracy. With the fast progress of sensors design and communications technique, sensor networks have also been quickly evolving in both research and practical domains in the last decade. More and more sensor networks have been - ployed in real-world to gather information for our daily life. Applications of sensor networks can be found in battle?eld surveillance, environmental monitoring, b- logical detection, smart spaces, industrial diagnostics, etc. Although the technique of sensor networks has a very promising future, many challenges are still deserving lots of research efforts for its successful applications.

Thisbookisdevotedtocoveragecontrol,oneofthemostfundamentalandimportant research issues in sensor networks. The aim of the book is to provide tutorial-like and up-to-date reference resources on various coverage control problems in sensor networks, a hot topic that has been intensively researched in recent years. Due to some unique characteristics of sensor networks such as energy constraint and - hoc topology, the coverage problems in sensor networks have many new scenarios and features that entitle them an important research issue in recent years. I have done my best to include in the book the most recent advances, techniques, protocols, results, and ?ndings in this ?eld.

With the increasing popularization of personal hand-held mobile devices, more people use them to establish network connectivity and to query and share data among themselves in the absence of network infrastructure, creating mobile social networks (MSNet). Since users are

only intermittently connected to MSNets, user mobility should be exploited to bridge network partitions and forward data. Currently, data route/forward approaches for such intermittently connected networks are commonly "store-carry-and-forward" schemes, which exploit the physical user movements to carry data around the network and overcome path disconnection. And since the source and destination may be far away from each other, the delay for the destination to receive the data from the source may be long. MSNets can be viewed as one type of socially-aware delay tolerant networks (DTNs). Observed from social networks, the contact frequencies are probably different between two friends and two strangers, and this difference should be taken into consideration when designing data dissemination and query schemes in MSNets. In this book, the fundamental concepts of MSNets are introduced including the background, key features and potential applications of MSNets, while also presenting research topics, such as, MSNets as realistic social contact traces and user mobility models. Because the ultimate goal is to establish networks that allow mobile users to quickly and efficiently access interesting information, particular attention is paid to data dissemination and query schemes in subsequent sections. Combined with geography information, the concepts of community and centrality are employed from a social network perspective to propose several data dissemination and query schemes, and further use real social contact traces to evaluate their performance, demonstrating that such schemes achieve better performance when exploiting more social relationships between users.

This book constitutes the thoroughly refereed post-conference proceedings of the 12th International Conference on Wired/Wireless Internet Communication, WWIC 2014, held in Paris, France, during May 27-28, 2014. The 22 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on wireless and wired networks; resource management and next generation services; next generation services, network architecture and applications.

This book provides a comprehensive guide to the emerging field of network slicing and its importance to bringing novel 5G applications into fruition. The authors discuss the current trends, novel enabling technologies, and current challenges imposed on the cellular networks. Resource management aspects of network slicing are also discussed by summarizing and comparing traditional game theoretic and optimization based solutions. Finally, the book presents some use cases of network slicing and applications for vertical industries. Topics include 5G deliverables, Radio Access Network (RAN) resources, and Core Network (CN) resources. Discusses the 5G network requirements and the challenges therein and how network slicing offers a solution Features the enabling technologies of future networks and how network slicing will play a role Presents the role of machine learning and data analytics for future cellular networks along with summarizing the machine learning approaches for 5G and beyond networks

"This book further explores various issues and proposed solutions for the provision of Quality of Service (QoS) on the wireless networks"--Provided by publisher.

This book provides recent results of game theory for networking applications. The contributors address the major opportunities and challenges in applying traditional game theory as well as intelligent game theory to the understanding and designing of modern network systems, with emphasis on both new analytical techniques and novel application scenarios. After an overview of game theory for networks, the book narrows in on game theory in communications, game theory in wireless networks, and game theory applications. The book features contributions from researchers and professionals around the world. Presents a variety of perspectives on game theory for networking applications; Shows how game theory can apply to the study of data traffic, new generation networks, and smartgrid; Includes recent results of applied game theory for networks, providing some technical progresses in GAMENETS.

This brief presents a comprehensive review of the network architecture and communication technologies of the smart grid communication network (SGCN). It then studies the strengths, weaknesses and applications of two promising wireless mesh routing protocols that could be used to implement the SGCN. Packet transmission reliability, latency and robustness of these two protocols are evaluated and compared by simulations in various practical SGCN scenarios. Finally, technical challenges and open research opportunities of the SGCN are addressed. Wireless Communications Networks for Smart Grid provides communication network architects and engineers with valuable proven suggestions to successfully implement the SGCN. Advanced-level students studying computer science or electrical engineering will also find the content helpful.

This book provides comprehensive information on Wireless technologies with a deeper focus on Bluetooth and WiFi. The book starts from the ground up but does a quick progression into the technical details. The technology detail is not exhaustive but mostly illustrative to give the reader a ring side view and provide a platform for a more exhaustive exploration. The book is structured as the following: 1. Overview on Wireless Technologies and related taxonomy. 2. Technology architectures of Bluetooth and WiFi 3. Comparative Analysis of Bluetooth and WiFi along with lesser known technologies like HyperLand and HomeRF. 4. Usage scenarios and a market focussed future outlook. 5. [New] Sections on Zigbee and WiMax. "Wireless Technologies: An introduction to Bluetooth and WiFi" is perfect for readers from both technical and non-technical backgrounds getting started on Wireless as it assumes little technical knowhow from its reader. This book is a great pick to use in an introductory class on Wireless Networks and is being used by few universities around the world. It is also a great place to start for marketing and industry focussed readers as the book goes beyond the technology and elaborates a more consumer centric, usage focused detail of the industry.

As technology advances, the emergence of 5G has become an essential discussion moving forward as its applications and benefits are expected to enhance many areas of life. The introduction of 5G technology to society will improve communication speed, the efficiency of information transfer, and end-user experience to name only a few of many future improvements. These new opportunities offered by 5G networks will spread across industry, government, business, and personal user experiences leading to widespread innovation and technological advancement. What stands at the very core of 5G becoming an integral part of society is the very fact that it is expected to enrich society in a multifaceted way, enhancing connectivity and efficiency in just about every sector including healthcare, agriculture, business, and more. Therefore, it has been a critical topic of research to explore the implications of this technology, how it functions, what industries it will impact, and the challenges and solutions of its implementation into modern society. Research Anthology on Developing and Optimizing 5G Networks and the Impact on Society is a critical reference source that analyzes the use of 5G technology from the standpoint of its design and technological development to its applications in a multitude of industries. This overall view of the aspects of 5G networks creates a comprehensive book for all stages of the

implementation of 5G, from early conception to application in various sectors. Topics highlighted include smart cities, wireless and mobile networks, radio access technology, internet of things, and more. This all-encompassing book is ideal for network experts, IT specialists, technologists, academicians, researchers, and students.

Short-range Wireless Communication, Third Edition, describes radio theory and applications for wireless communication with ranges of centimeters to hundreds of meters. Topics covered include radio wave propagation, the theory of antennas and transmission lines, architectures of transmitters, and radio system design guidelines as a function of basic communication parameters, such as sensitivity, noise and bandwidth. Topics new to this edition include MIMO, metamaterials, inductance coupling for loop antennas, very high throughput Wi-Fi specifications, Bluetooth Low Energy, expanded coverage of RFID, wireless security, location awareness, wireless sensor networks, Internet of Things, millimeter wave and optical short-range communications, body area networks, energy harvesting, and more. Engineers, programmers, technicians and sales management personnel who support short-range wireless products will find the book a comprehensive and highly readable source to boost on-the-job performance and satisfaction. Presents comprehensive, up-to-date coverage of short-range wireless technologies Provides an in-depth explanation of wave propagation and antennas Describes communication system components and specifications, including transmitters, receivers, frequency synthesizers, sensitivity, noise, distortion, and more Includes an introduction to error detection and correction

Do you need to design efficient wireless communications systems? This unique text provides detailed coverage of radio resource allocation problems in wireless networks and the techniques that can be used to solve them. Covering basic principles and mathematical algorithms, and with a particular focus on power control and channel allocation, you will learn how to model, analyze, and optimize the allocation of resources in both physical and data link layers, and for a range of different network types. Both established and emerging networks are considered, including CDMA and OFDMA wireless networks, relay-based wireless networks, and cognitive radio networks. Numerous exercises help you put knowledge into practice, and provide the tools needed to address some of the current research problems in the field. This is an essential reference whether you are a graduate student, researcher or industry professional working in the field of wireless communication networks.

Issues in Networks Research and Application: 2011 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Networks Research and Application. The editors have built Issues in Networks Research and Application: 2011 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Networks Research and Application in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Networks Research and Application: 2011 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

This SpringerBriefs is an overview of the emerging field of wireless access and mobile network virtualization. It provides a clear and relevant picture of the current virtualization trends in wireless technologies by summarizing and comparing different architectures, techniques and technologies applicable to a future virtualized wireless network infrastructure. The readers are exposed to a short walkthrough of the future Internet initiative and network virtualization technologies in order to understand the potential role of wireless virtualization in the broader context of next-generation ubiquitous networks. Three main wireless virtualization perspectives are explored, along with the potential challenges and requirements of a sustainable wireless virtualization framework. Finally, it presents an example of a multi-perspective wireless virtualization framework. The readers learn the latest concepts in the application of wireless virtualization as well as its relationship with cutting-edge wireless technologies such as software-defined radio (SDR) and cognitive radio.

This book constitutes the refereed post-conference proceedings of the IFIP WG 11.4 International Workshop, iNetSec 2010, held in Sofia, Bulgaria, in March 2010. The 14 revised full papers presented together with an invited talk were carefully reviewed and selected during two rounds of refereeing. The papers are organized in topical sections on scheduling, adversaries, protecting resources, secure processes, and security for clouds.

The Perfect Reference for the Multitasked SysAdmin The Microsoft Windows Vista operating system offers several changes and improvements over its predecessors. It not only brings a new and redesigned interface, but also improves on many administrative utilities and management consoles. It also enhances the system's reliability, performance, and problem-solving tools. As administrators, Vista will sometimes look like its predecessor, Windows XP, and at other times, look like an all-new operating system. How to Cheat will help you get Vista up and running as quickly and safely as possible and provide you with a solid idea of all the important changes and improvements the new Microsoft Vista OS has to offer. In the book you will: * Automate Windows Vista Installation See how Windows installations can be automated for large-scale deployments using the Windows Automated Installation Kit (WAIK). * Install and Maintain Devices Windows Vista contains device drivers for hundreds of PnP devices, and the Device Manager snap-in is the main utility on a local computer for managing them. * Customize Appearances, Taskbars, and Toolbars See how to use a personalization page, use the taskbar, and customize desktop themes. * Manage File System Formats, Partitions, and Volumes Learn how Windows Vista supports basic and dynamic volumes and two partition styles: MBR and GPT. * Increase File System Performance Learn how using tools such as disk defragging, cluster size adjustment, removing short filename support, and compression can help with performance. * Administer via Remote Remote Desktop and Windows Firewall can help administrators perform administrative tasks on remote computers. * Managing Services The Services utility allows you to view the status of services, as well as to disable nonessential services. * Configure TCP/IP in Vista See how to configure TCP/IP (both IPv4 and IPv6) via the user interface or via the netsh command. * See What's New with Wireless in Vista Understand wireless security and learn how to install a wireless network. * Optimize Windows Startup, the Hard Disk, and More Optimize memory, applications, and the network connection, and see how to monitor performance. Contents Include Introducing and Installing Microsoft Vista Installing and Maintaining Hardware Devices and Drivers Customizing Desktop Properties Managing File Systems and Disks General Administration Tasks Managing Local Networking Essentials Managing the Wireless World and Its Security Managing Security Essentials Securing User Access Tuning for Better Performance Troubleshooting Provides the multi-tasked SysAdmin with the essential information needed to perform the daily tasks Covers the major new release of Windows, which will create significant challenges for IT managers Emphasizes best-practice security measures

Do you want to find out how a computer network works? Do you want to understand what it all takes to keep a network up and running? This

book is all you need! When the first computers were built during the second world war, they were expensive and isolated. However, after about twenty years, as their prices gradually decreased, the first experiments began to connect computers together. At the time, sharing them over a long distance was an interesting idea. Computers and the Internet have changed this world and our lifestyle forever. We just need to touch a small button and within a fraction of a second, we can make a call, send a file or video message. The major factor that lies behind this advanced technology is none other than computer network. That's why it's important to know how it works! NETWORKING FOR BEGINNERS will help you navigate your way to becoming proficient with the network fundamentals through the following topics: Networking Basics - Types of computer networks, network topologies, and network architecture. Network Hardware - The different network components (routers, hubs, switches, etc.). Network Cabling - The different cabling standards (coaxial, fiber optic cable, twisted-pair copper cable, etc.). Wireless Networking - Fundamental technicalities of wireless technology, how to enjoy the benefits of Wi-Fi technology, and how to set up and configure a computer for wireless connectivity. IP Addressing - Basics of IP addressing, and the different number systems (binary, decimal, and hexadecimal). IP Subnetting - Introduction to concepts of subnetting. Network Protocols - Various protocols of the TCP/IP suite. Internet Essentials - Different terminologies regarding the Internet, the worldwide web, and history of the Internet. Virtualization in cloud computing - Concept of virtualization, its relevance in computer networking and an examination of cloud services. Network Troubleshooting - Effective network management must address all issues pertaining to the following: hardware, administration and end-user support, software, data management. NETWORKING FOR BEGINNERS is an easy-to-read book for anyone hungry for computer networking knowledge. The language used is simple, and even the very technical terms that pop from time to time have been explained in a way that is easy to understand. So, what are you waiting for? Scroll to the top of the page and grab your copy!

Radio interference is a problem that has plagued air communication since its inception. Advances in cognitive radio science help to mitigate these concerns. Cognitive Radio Technology Applications for Wireless and Mobile Ad Hoc Networks provides an in-depth exploration of cognitive radio and its applications in mobile and/or wireless network settings. The book combines a discussion of existing literature with current and future research to create an integrated approach that is useful both as a textbook for students of computer science and as a reference book for researchers and practitioners engaged in solving the complex problems and future challenges of cognitive radio technologies.

Are you looking for a complete guide to better manage a computer network? Here is the book for you! Computer network was created to connect individual computers to form a more powerful computing environment. In short, to increase productivity. From the age of batch processing to the age of computer networks, there is no doubt that this is the case that computer networks are intended to. Now, however, there seems to be a subtle shift in technology. One of the primary purposes of modern computer networks can be said to be to connect people. People around the world can connect, communicate and exchange ideas via the Internet. This, however, was not possible in the early days of computer networks. This human-to-human computer network has gradually brought about great changes in people's daily life, school education, Scientific Research, and company development. The wide areas of applications of wireless networks in modern times are an indication of what the technology will offer in the future. At the moment, wireless networks have simplified a lot of human activities such as communication, business transactions, and other activities. However, the future is brighter than most people can imagine. The modern wireless network will be child's play compared to what the future promises. Let's consider some of the major future development of wireless networks and the potential huge impact they will have on the users. In the wireless industry, there are top wireless carriers such as AT & T, Verizon, Sprint, and T-Mobile. These carriers have significantly contributed to the growth of this sector by churning out high-performance communication technologies and devices that have proved invaluable to the growth and general acceptance of wireless communication. There are different types of wireless communication, such as satellite communication, IR wireless communication, microwave radio, and broadcast radio. This guide will cover the following topics: Virtual Private Networks (VPNs) Virtualization & Cloud Computing Connection-Oriented and Connectionless-Oriented Managing and Troubleshooting the Network Networking Macs and PCs Unified Communications and Virtualization Future protocols Switching The OSI and TCP/IP models The IP addresses and subnets Patch Panel or RJ45 Plugs Patch Panel Cabinet or Wall mounted Scanning the Network Wardriving and the Wireless Pirates... AND MORE! Buy this book NOW, you will acquire high and important information about computer networking!!!