

# Data Communications And Computer Networks A Business Users Approach

Fully revised and updated, the fourth edition includes new chapters on broadband multi-service networks, a revamped chapter with extended and updated coverage of FDDI, and a new section on Fast Ethernet, covering 100BaseT, 100Base X, wireless LANs, and several additional candidate technologies.

Modern organizations are critically dependent on data communications and network systems utilized in managing information and communications, vital to continuity and success of operations. "Breakthrough Perspectives in Network and Data Communications Security, Design and Applications" addresses key issues and offers expert viewpoints into the field of network and data communications, providing the academic, information technology, and managerial communities with the understanding necessary to implement robust, secure, and effective solutions. This much-needed addition to library and professional collections offers a matchless set of high quality research articles and premier technologies to address the most salient issues in network and data communications.

Appropriate for a first course on computer networking, this textbook describes the architecture and function of the application, transport, network, and link layers of the internet protocol stack, then examines audio and video networking applications, the underpinnings of encryption

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and network security, and the key issues of network management. Th

The protocols and standards for networking are numerous and complex. Multivendor internetworking, crucial to present day users, requires a grasp of these protocols and standards. *Data and Computer Communications: Networking and Internetworking*, a comprehensive text/reference, brings clarity to all of the complex issues involved in networking activity, providing excellent instruction for students and an indispensable reference for practitioners. This systematic work answers a vast array of questions about overall network architecture, design, protocols, and deployment issues. It offers a practical, thorough treatment of the applied concepts of data and computer communication systems, including signaling basics, transmission of digital signals, and layered architecture. The book features in-depth discussions of integrated digital networks, integrated services digital networks, and high-speed networks, including currently evolving technologies, such as ATM switching, and their applications in multimedia technology. It also presents the state-of-the-art in Internet technology, its services, and implementations. The balance of old and new networking technologies presents an appealing set of topics for both undergraduate students and computer and networking professionals. This book presents all seven layers of OSI-based networks in great detail, covering services, functions, design issues, interfacing, and protocols. With its introduction to the basic concepts and practical aspects of the field, *Data and Computer*

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Communications: Networking and Internetworking helps you keep up with the rapidly growing and dominating computer networking technology.

Providing essential information on data communication in an interesting, simple, and straightforward way, this comprehensive overview examines the primary components which make up data communications networks, and helps students build a foundation for understanding the more technical aspects of the subject.

Data Communications and Computer Networks: A Business User's Approach Cengage Learning

Data communications and computer networks are becoming increasingly more important--today's business world could not function without either. DATABASE COMMUNICATIONS AND COMPUTER NETWORKS offers a balance between technical and practical aspects of data communication. Business managers, computer programmers, system designers, and home computer users alike need a through understanding of the basic features, operations, and limitations of different types of computer networks. DATA COMMUNICATIONS AND COMPUTER NETWORKS introduces concepts that help the reader achieve an in-depth understanding of the often complex topic of data communications and computer networks by balancing the more technical aspects and the everyday practical aspects. The sixth edition retains many of the elements that made the fifth edition so popular, including readability and coverage of the most current technologies. This book offers full coverage of wireless technologies, industry convergence, compression techniques, network security,

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LAN technologies, VoIP, and expanded coverage of error detection and correction. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version. Thoroughly updated for currency, this book offers a clear presentation of data communications and network fundamentals. Featuring a wide array of applications, the book fully explains concepts and supports them with case studies or descriptions of specific software and other products. Students learn the protocols of analog and digital signals, data compression, data integrity, data security, local area networks, asynchronous transfer mode (ATM), and much more. The third edition includes important information on the latest developments of the Internet.

Computer Networks & Communications (NetCom) is the proceedings from the Fourth International Conference on Networks & Communications. This book covers theory, methodology and applications of computer networks, network protocols and wireless networks, data communication technologies, and network security. The proceedings will feature peer-reviewed papers that illustrate research results, projects, surveys and industrial experiences that describe significant advances in the diverse areas of computer networks & communications.

What every electrical engineering student and technical professional needs to know about data

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exchange across networks While most electrical engineering students learn how the individual components that make up data communication technologies work, they rarely learn how the parts work together in complete data communication networks. In part, this is due to the fact that until now there have been no texts on data communication networking written for undergraduate electrical engineering students. Based on the author's years of classroom experience, *Fundamentals of Data Communication Networks* fills that gap in the pedagogical literature, providing readers with a much-needed overview of all relevant aspects of data communication networking, addressed from the perspective of the various technologies involved. The demand for information exchange in networks continues to grow at a staggering rate, and that demand will continue to mount exponentially as the number of interconnected IoT-enabled devices grows to an expected twenty-six billion by the year 2020. Never has it been more urgent for engineering students to understand the fundamental science and technology behind data communication, and this book, the first of its kind, gives them that understanding. To achieve this goal, the book:

- Combines signal theory, data protocols, and wireless networking concepts into one text
- Explores the full range of issues that affect common processes such as media downloads and online games
- Addresses

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services for the network layer, the transport layer, and the application layer Investigates multiple access schemes and local area networks with coverage of services for the physical layer and the data link layer Describes mobile communication networks and critical issues in network security Includes problem sets in each chapter to test and fine-tune readers' understanding Fundamentals of Data Communication Networks is a must-read for advanced undergraduates and graduate students in electrical and computer engineering. It is also a valuable working resource for researchers, electrical engineers, and technical professionals.

Database and Data Communication Network Systems examines the utilization of the Internet and Local Area/Wide Area Networks in all areas of human endeavor. This three-volume set covers, among other topics, database systems, data compression, database architecture, data acquisition, asynchronous transfer mode (ATM) and the practical application of these technologies. The international collection of contributors was culled from exhaustive research of over 100,000 related archival and technical journals. This reference will be indispensable to engineering and computer science libraries, research libraries, and telecommunications, networking, and computer companies. It covers a diverse array of topics, including: \* Techniques in emerging database system architectures \*

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Techniques and applications in data mining \* Object-oriented database systems \* Data acquisition on the WWW during heavy client/server traffic periods \* Information exploration on the WWW \* Education and training in multimedia database systems \* Data structure techniques in rapid prototyping and manufacturing \* Wireless ATM in data networks for mobile systems \* Applications in corporate finance \* Scientific data visualization \* Data compression and information retrieval \* Techniques in medical systems, intensive care units

Intended primarily as a textbook for the students of computer science and engineering, electronics and communication engineering, master of computer applications (MCA), and those offering IT courses, the book provides a comprehensive coverage of the subject. Basic elements of communication such as data, signal and channel alongwith their characteristics such as bandwidth, bit internal and bit rate have been explained. Contents related to guided and unguided transmission media, Bluetooth wireless technology, developed for Personal Area Network (PAN) and issues related to routing covering popular routing algorithms namely RIP, OSPF and BGP, have been introduced in the book. Various aspects of data link control alongwith their application in HDLC network and techniques such as encoding, multiplexing and encryption/decryption are presented in detail. Characteristics and

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implementation of PSTN, SONET, ATM, LAN, PACKET RADIO network, Cellular telephone network and Satellite network have also been explained. Different aspects of IEEE 802.11 WLAN and congestion control protocols have also been discussed in the book. Key Features • Each chapter is divided into section and subsection to provide flexibility in curriculum design. • The text contains numerous solved examples, and illustrations to bring clarity to the subject and enhance its understanding. • Review questions given at the end of each chapter, are meant to enable the teacher to test student's grasping of the subject.

As the world grows increasingly interconnected, data communications has become a critical aspect of business operations. Wireless and mobile technology allows us to seamlessly transition from work to play and back again, and the Internet of things has brought our appliances, vehicles, and homes into the network; as life increasingly takes place online, businesses recognize the opportunity for a competitive advantage. Today's networking professionals have become central to nearly every aspect of business, and this book provides the essential foundation needed to build and manage the scalable, mobile, secure networks these businesses require. Although the technologies evolve rapidly, the underlying concepts are more constant. This book combines the foundational

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concepts with practical exercises to provide a well-grounded approach to networking in business today. Key management and technical issues are highlighted and discussed in the context of real-world applications, and hands-on exercises reinforce critical concepts while providing insight into day-to-day operations. Detailed technical descriptions reveal the tradeoffs not presented in product summaries, building the analytical capacity needed to understand, evaluate, and compare current and future technologies.

Whether you are preparing for a career as a business manager, computer programmer or system designer, or you simply want to be an informed home computer user, West's DATA

### COMMUNICATIONS AND COMPUTER

NETWORKS, 9th Edition provides an understanding of the essential features, operations and limitations of today's computer networks. You learn about systems both on premises and in the cloud as the author balances technical concepts with practical, everyday issues. Updates address the latest developments and practices in cloud business principles and security techniques, software-defined networking, 5G, the Internet of Things, data analytics and supporting remote workforces. This edition also covers the CompTIA's Cloud Essentials+ exam to help you prepare for this vendor-neutral, business-oriented cloud computing certification. Hands-on

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learning features and thought-provoking content also guide you through virtual networking technologies, industry convergence and wired and wireless LAN technologies.

As the number and variety of communication services grow, so do the challenges of designing cost-effective networks that meet the requirements of emerging technologies in wireless, sensor, and mesh networks. *Computer and Communication Networks* is the first book to offer balanced coverage of all these topics using extensive case studies and examples. This essential reference begins by providing a solid foundation in TCP/IP schemes, wireless networking, Internet applications, and network security. The author then delves into the field's analytical aspects and advanced networking protocols.

Students and researchers will find up-to-date, comprehensive coverage of fundamental and advanced networking topics, including: Packet-switched networks and Internet Network protocols Links LAN Protocols Wireless Networks Transport Protocols Applications and Management Network Security Delay Analysis QoS High speed protocols Voice over IP Optical Networks Multicasting Protocols Compression of Voice and Video Sensor/Mesh Networks Network architecture books are often criticized for not offering enough practical, scenario-based information. *Computer and Communication Networks* provides an effective blend of theory and implementation not found in other books. Key features include: Figures and images that simplify complex topics Equations and algorithms Case studies that further explain concepts and theory Exercises and examples honed through the author's twelve years of teaching about networking Overall, readers will find a thorough design and performance evaluation that provides a foundation for developing the ability to analyze and simulate complex communication

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networks.

Data Communications and Networks uses a top-down, Internet-focussed approach to tackle the problem of communication system design. An integrated approach is taken to networks and data communications, with an emphasis that starts from the top level requirements and works downwards, describing how such requirements are fulfilled by lower layers of the transmission chain. While the book contains sufficient detail to provide an excellent foundation, clarity is paramount and care is taken not to swamp the reader with information to the point where the underlying concepts are obscured. The Internet is used as the principle example of a communication system, allowing the reader to follow the system from the application layers, with source coding and security, through the network, with naming and routing algorithms, down to transport and physical aspects of a communication system. Modern techniques such as mobile radio, Voice over IP, and ASDL, are covered, while more traditional aspects such as circuit switching, which still form a significant part of current systems, are not overlooked. By providing a technical introduction and including application examples, this text will have significant appeal to final year students, postgraduates and professionals with a science or engineering background wishing to gain a basic understanding of the key concepts behind data communications engineering.

The use of data communications and computer networks is constantly increasing, bringing benefits to most of the countries and peoples of the world, and serving as the lifeline of industry. Now there is a textbook that discusses data communications and networking in a readable form that can be easily understood by students who will become the IS professionals of the future. Advanced Data Communications and Networks provides a comprehensive and practical

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treatment of rapidly evolving areas. The text is divided into seven main sections and appendices: " General data compression " Video, images, and sound " Error coding and encryption " TCP/IP and the Internet " Network operating systems " LANs/WANs " Cables and connectors Other topics include error detection/correction, image/video compression, digital video, digital audio, TCP/IP, HTTP, electronic mail, HTML, Windows NT, NetWare, UNIX, Fast Ethernet, ATM, FDDI, and much more. Written by a respected academician who is also an accomplished engineer, this textbook uses the author's wide practical experience in applying techniques and theory toward solving real engineering problems. It also includes an accompanying Web site that contains software, source code, and other supplemental information.

Data and Computer Communications, 10e, is a two-time winner of the best Computer Science and Engineering textbook of the year award from the Textbook and Academic Authors Association. It is ideal for one/two-semester courses in Computer Networks, Data Communications, and Communications Networks in CS, CIS, and Electrical Engineering departments. This book is also suitable for Product Development personnel, Programmers, Systems Engineers, Network Designers and others involved in the design of data communications and networking products. With a focus on the most current technology and a convenient modular format, this best-selling text offers a clear and comprehensive survey of the entire data and computer communications field. Emphasizing both the fundamental principles as well as the critical role of performance in driving protocol and network design, it explores in detail all the critical technical areas in data communications, wide-area networking, local area networking, and protocol design. Data Communication And Computer Networks Deals With Various Aspects Of The Subject Vis-À-Vis The Emerging

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Trends In Network-Centric Information Technology. It Provides The Reader With An In-Depth Framework Of The Fundamental Concepts. Networking Involves The latest edition of Curt White's top-selling text maintains a balanced approach between the technical and the practical aspects of data communications, providing a solid understanding not only of how things work, but how they can be applied to create business solutions. Updated to reflect new technologies, this text covers current concepts such as voice over wireless LAN, convergence, MPLS, and PPP, while maintaining the pedagogical elements that have been successful for students in the past.

On computer networks

Balancing the most technical concepts with practical everyday issues, DATABASE COMMUNICATIONS AND COMPUTER NETWORKS, 8e provides thorough coverage of the basic features, operations, and limitations of different types of computer networks--making it the ideal resource for future business managers, computer programmers, system designers, as well as home computer users. Offering a comprehensive introduction to computer networks and data communications, the book includes coverage of the language of computer networks as well as the effects of data communications on business and society. It provides full coverage of wireless technologies, industry convergence, compression techniques, network security, LAN technologies, VoIP, and error detection and correction. The Eighth Edition also offers up-to-the-minute coverage of near field communications, updated USB interface, lightning interface, and IEEE 802.11 ac and ad wireless standards, firewall updates, router

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security problems, the Internet of Things, cloud computing, zero-client workstations, and Internet domain names. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

"This book presents quality articles focused on key issues concerning the planning, design, maintenance, and management of telecommunications and networking technologies"--Provided by publisher.

Computer communications is one of the most rapidly developing technologies and it is a subject with which everyone in the computer systems profession should be familiar. Computer communications and networks is an introduction to communications technology and system design for practising and aspiring computer professionals. The subject is described from the computer system designer's point of view rather than from the communications engineer's viewpoint. The presentation is suitable for introductory reading as well as for reference. The emphasis is on practical, rather than theoretical, aspects and on technology which will become more important in the future. The majority of the subject matter applies to civil and military communications but some aspects which are unique to military applications have been included where considered significant. Computer communications is a rapidly changing and highly complex subject. Sufficient practical knowledge of the subject is not usually gained at university or college but is generally developed over a period of several years by trial and error, attending courses, reading reference books and journals; this book

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attempts to simplify and speed up the process by bringing together a body of information which is otherwise distributed throughout many books and journals. The information is presented in a framework which makes a wider understanding of the subject possible. Basic knowledge of communications is assumed, a general familiarity with computer systems is anticipated in later chapters, and, where relevant, theory is explained.

This fully revised and updated book, now in its Fourth Edition, continues to provide a comprehensive coverage of data communications and computer networks in an easy to understand style. The text places as much emphasis on the application of the concepts as on the concepts themselves. While the theoretical part is intended to offer a solid foundation of the basics so as to equip the student for further study, the stress on the applications is meant to acquaint the student with the realistic status of data communications and computer networks as of now. Audience Intended primarily as a textbook for the students of computer science and engineering, electronics and communication engineering, master of computer applications (MCA), and those offering IT courses, this book would also be useful for practising professionals. **NEW TO THIS EDITION** • Three new chapters on: o Network Architecture and OSI Model o Wireless Communication Technologies o Web Security • Appendix on Binary and Hexadecimal Numbering Key features • Illustrates the application of the principles through highly simplified block diagrams. • Contains a comprehensive glossary which gives simple

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and accurate descriptions of various terms. • Provides Questions and Answers at the end of the book which facilitate quick revision of the concept.

Primarily intended as a text for undergraduate courses in Electronics and Communications Engineering, Computer Science, IT courses, and Computer Applications, this up-to-date and accessible text gives an indepth analysis of data communications and computer networks in an easy-to-read style. Though a new title, it is a completely revised and fully updated version of the author's earlier book Data Communications. The rapid strides made during the last decade in the fields of data communication and networking, and the close link between these two subjects have prompted the author to add several chapters on computer networks in this text. The book gives a masterly analysis of topics ranging from the principles of data transmission to computer networking applications. It also provides standard protocols, thereby enabling to bridge the gap between theory and practice. What's more, it correlates the network protocols to the concepts, which are explained with the help of numerous examples to facilitate students' understanding of the subject. This well-organized text presents the latest developments in the field and details current topics of interest such as Multicasting, MPLS, IPv6, Gigabit Ethernets, IPSec, SSL, Auto-negotiation, Wireless LANs, Network security, Differentiated services, and ADSL. Besides students, the practicing professionals would find the book to be a valuable resource. The book, in its second edition introduces a full chapter on Quality of Service,

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highlighting the meaning, parameters and functions required for quality of service. This book is recommended in Kaziranga University, Nagaland, IIT Guwahati, Assam and West Bengal University of Technology (WBUT), West Bengal for B.Tech. Key Features • The book is self-contained and student friendly. • The sequential organization lends flexibility in designing courses on the subject. • Large number of examples, diagrams and tables illustrate the concepts discussed in the text. • Numerous exercises (with answers), a list of acronyms, and references to protocol standards.

Introduction, datacommunications, information theory, introduction to local area networks. Internet protocols ...

The usage of data communications and computer networks are ever in creasing. It is one of the few technological areas which brings benefits to most of the countries and the peoples of the world. Without it many industries could not exist. It is the objective of this book to discuss data communications in a readable form that students and professionals all over the world can understand. As much as possible the text uses diagrams to illustrate key points. Most currently available data communications books take their view point from either a computer scientists top-down approach or from an electronic engineers bottom-up approach. This book takes a practical ap proach and supports it with a theoretical background to create a textbook which can be used by electronic engineers, computer engineers, computer scientists and industry professionals. It discusses most of the current and future key data

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communications technologies, including: • Data Communications Standards and Models; • Local Area Networks (Ethernet, Token Ring and FDDI); • Transmission Control Protocol/Internet Protocol (TCP/IP); • High-level Data Link Control (HDLC); • X.25 Packet-switching; • Asynchronous Communications (RS-232) and Modems; • Pulse Coded Modulation (PCM); • Integrated Digital Services Network (ISDN); • Asynchronous Transfer Mode (ATM); • Error Control; • X-Windows. The chapters are ordered in a possible structure for the presentation of the material and have not been sectioned into data communications areas. Capacity assignment in networks; Capacity assignment in distributed network; Centralized networks: time delay-cost trade offs; Elements of queueing theory; Concentration and buffering in store-and-forward networks; Concentration: finite buffers, dynamic buffering, block storage; Centralized network design: multipoint connections; Network design algorithms; Routing and flow control; Polling in networks; Random access techniques; Line control procedures.

This example-laden book/disk combination is a practical resource for communications professionals who are interested in the nuts and bolts of implementing data communications systems using object-oriented design in C++. The author illustrates such fundamental data communications concepts as layering, flow control, sliding window protocols, and error detection and recovery.

