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OSS for Telecom Networks - Kundan Misra 2012-12-06
Places OSS software in the context of telecommunications as a business Gives a concrete understanding of what OSS is, what it does and how it does it, avoiding deep technical details Frequently relates OSS software to business drivers of telecom service providers
Distributed Computer and Communication Networks: Control, Computation, Communications - Vladimir M. Vishnevskiy 2021-12-14
This book constitutes the refereed post-conference proceedings of the 24th International Conference on Distributed and Computer and Communication Networks, DCCN 2021, held in Moscow, Russia, in September 2021. The 26 revised full papers and 3 revised short papers were carefully reviewed and selected from 151 submissions. The papers cover the following topics: computer and communication networks; analytical modeling of distributed systems; and distributed systems applications.
Computer Networks and Systems - Thomas G Robertazzi 1990-11-06

Performance of Distributed Systems and Integrated Communication Networks - T. Hasegawa 2014-06-28
This book explores new analytical techniques and tools for the performance evaluation of distributed and integrated computer communication systems. The systems considered are those arising in LAN, MAN, WAN broadband ISDN, and ATM switching. These systems are mathematically modelled and analysed. Analytical results are presented on the basic queueing models such as multi-queue, priority queue, queueing network, queue with bursty input and superposed input, and multi-server queue. These results can be usefully applied for the performance evaluation of all the above systems.
Telecommunication Networks - John Edward Flood 1997
This book discusses the structure and performance of networks in the context of the services they provide. Chapters are devoted to public and private networks, ISDN, intelligent networks, mobile radio networks and broadband networks.
Blockchain Systems and Communication Networks: From Concepts to Implementation - Mubashir Husain Rehmani 2021-05-19
This book provides extensive insights on blockchain systems, starting from a historical perspective and moving towards building foundational knowledge, with focus on communication networks. It covers blockchain applications, algorithms, architectures, design and implementation, and security and privacy issues, providing the reader with a comprehensive overview. Further, it discusses blockchain systems and its integration to communication networks. The book includes hands-on, practical tutorials, self-assessment exercises, and review questions; tips and sample programs are also provided throughout. Complementary supporting material for instructors, including open source programming code for practical tutorials and exercises, is also available. The target audience includes graduate students, professionals, and researchers working in the areas of blockchain systems, distributed ledger technology, computer networks and communications, artificial intelligence, and cybersecurity.
Official Gazette of the United States Patent and Trademark Office - 2004

Communication Networks and Computer Systems - Javier A. Barria 2006
Evaluating the performance of communications and computer systems constitutes a challenge. This volume contains contributions and presentations made by international researchers at a workshop which was held in April 2004 to honour Professor Erol Gelenbe on the occasion of his inaugural lecture as the Dennis Gabor Chair at Imperial College London.
Communications and Networking - Xingang Liu 2019-01-15
The book constitutes the refereed proceedings of the 13th EAI International Conference on Communications and Networking, held in October 2018 in Chengdu, China. The 71 papers presented were carefully selected from 114 submissions. The papers are organized in topical sections on wireless communications and networking, next generation WLAN, big data networks, cloud communications and networking, ad hoc and sensor networks, satellite and space communications and networking, optical communications and networking, information and coding theory, multimedia communications and smart networking, green communications and computing, signal processing for communications, network and information security, machine-to-machine and IoT, communication QoS, reliability and modeling, cognitive radio and networks, smart internet of things modeling, pattern recognition and image signal processing, digital audio and video signal processing, antenna and microwave communications, radar imaging and target recognition, and video coding and image signal processing.
Intelligent Broadband Multimedia Networks - Syed V. Ahamed 2012-12-06
Intelligent Broadband Multimedia Networks is a non-mathematical, but highly systems oriented, coverage of modern intelligent information networks. This volume focuses on the convergence of computers and communications technologies. Most of the concepts that are generic to all intelligent networks, and their microscopic and macroscopic functions, are presented. This book includes specific architectures that can be used by network designers and planners, telecommunications managers, computer scientists, and telecommunications professionals. The breadth of this coverage and the systems orientation of this work make the text suitable for use in advanced level courses on intelligent communications networks. The material in this volume ranges from defining intelligent networks to more specific coverage of educational, medical, and knowledge-based networks. Each of the 20 chapters address issues that can help make the transition from computer design, to the underlying concepts of modern telecommunications systems, to considerations necessary for the implementation of intelligent network services. Special and timely coverage of emerging technologies, such as HDSL, ADSL, BISDN, wireless, broadband access, ATM, and other topics, are given expanded treatment. The authors have included design methodologies for installing intelligence into almost any communications systems, and procedures for using such intelligence according to the type of function expected from these networks. Unique features of the book are: a 64-page glossary of key terms (with expanded explanations) used in the field, a 23-page index that makes it easy to search for important

information, running headers on each page to help the busy professional use the book as a reference/design tool, complete references including additional reading for more detailed information, and accurate and concise information to help telecommunications professionals understand the intricacies of the field.

Performance Guarantees in Communication Networks - Cheng-Shang Chang 2000

Providing performance guarantees is one of the most important issues for future telecommunication networks. This book describes theoretical developments in performance guarantees for telecommunication networks from the last decade. Written for the benefit of graduate students and scientists interested in telecommunications-network performance this book consists of two parts. The first introduces the recently-developed filtering theory for providing deterministic (hard) guarantees, such as bounded delay and queue length. The filtering theory is developed under the min-plus algebra, where one replaces the usual addition with the min operator and the usual multiplication with the addition operator. As in the classical linear system theory, the filtering theory treats an arrival process (or a departure process) as a signal and a network element as a system. Network elements, including traffic regulators and servers, can be modelled as linear filters under the min-plus algebra, and they can be joined by concatenation, "filter bank summation", and feedback to form a composite network element. The problem of providing deterministic guarantees is equivalent to finding the impulse response of composite network elements. This section contains material on: - (s, r)-calculus - Filtering theory for deterministic traffic regulation, service guarantees and networks with variable-length packets - Traffic specification - Networks with multiple inputs and outputs - Constrained traffic regulation The second part of the book addresses stochastic (soft) guarantees, focusing mainly on tail distributions of queue lengths and packet loss probabilities and contains material on: - (s(q), r(q))-calculus and q-envelope rates - The large deviation principle - The theory of effective bandwidth The mathematical theory for stochastic guarantees is the theory of effective bandwidth. Based on the large deviation principle, the theory of effective bandwidth provides approximations for the bandwidths required to meet stochastic guarantees for both short-range dependent inputs and long-range dependent inputs.

TELECOMMUNICATION SYSTEMS AND TECHNOLOGIES- Volume II - Paolo Bellavista 2009-10-17

Telecommunication Systems and Technologies theme is a component of Encyclopedia of Physical Sciences, Engineering and Technology Resources in the global Encyclopedia of Life Support Systems (EOLSS), which is an integrated compendium of twenty one Encyclopedias. Telecommunication systems are emerging as the most important infrastructure asset to enable business, economic opportunities, information distribution, culture dissemination and cross-fertilization, and social relationships. As any crucial infrastructure, its design, exploitation, maintenance, and evolution require multi-faceted know-how and multi-disciplinary vision skills. The theme is structured in four main topics: Fundamentals of Communication and Telecommunication Networks; Telecommunication Technologies; Management of Telecommunication Systems/Services; Cross-Layer Organizational Aspects of Telecommunications, which are then expanded into multiple subtopics, each as a chapter. These two volumes are aimed at the following five major target audiences: University and College students Educators, Professional practitioners, Research personnel and Policy analysts, managers, and decision makers and NGOs

Telecommunication Networks - Mischa Schwartz 1987

Here is the first book to present a unified discussion of protocols that treats both voice and data networks. It emphasizes quantitative performance education of telecommunication network systems. Of interest to electrical engineers and computer science professionals working with networks, data communication and distributed systems.

Computing in Communication Networks - Frank Fitzek 2020-05-20

Computing in Communication Networks: From Theory to Practice provides comprehensive details and practical implementation tactics on the novel concepts and enabling technologies at the core of the paradigm shift from store and forward (dumb) to compute and forward (intelligent) in future communication networks and systems. The book explains how to create virtualized large scale testbeds using well-established open source software, such as Mininet and Docker. It shows how and where to place disruptive techniques, such as machine learning, compressed sensing, or network coding in a newly built testbed. In addition, it presents a comprehensive overview of current standardization activities. Specific chapters explore upcoming communication networks that support verticals in transportation, industry, construction, agriculture, health care and energy grids, underlying concepts, such as network slicing and mobile edge cloud, enabling technologies, such as SDN/NFV/ ICN, disruptive innovations, such as network coding, compressed sensing and machine learning, how to build a virtualized network infrastructure testbed on one’s own computer, and more. Provides a uniquely comprehensive overview on the individual building blocks that comprise the concept of computing in future networks Gives practical hands-on activities to bridge theory and implementation Includes software and examples that are not only employed throughout the book, but also hosted on a dedicated website

Database and Data Communication Network Systems, Three-Volume Set - Cornelius T. Leondes 2002-07-09

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 * 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

Computer Networking and Communication Systems - Connor Butler 2020-09-08

A computer network is defined as a digital telecommunications network in which computing devices share resources using data links between nodes. Data links can be established over cable media or wireless media. Computer networks support a number of services and applications, such as digital audio, digital video and access to the World Wide Web. In a computer network, data is transmitted or received in the form of packets between nodes. Local Area Network, Wide Area Network and Metropolitan Area Network are the three main types of networks. The chief components of computer networks are servers, transmission media, clients, network interface card, network operating system, etc. A communication system is a collection of communication networks, relay stations, transmission systems, tributary stations, and data terminal equipment that are able to interoperate and interconnect. Communication systems can be of different types, depending on the type of media and technology used, and application area, such as optical communication system, radio communication system, tactical communications system, etc. This book discusses the fundamentals as well as modern approaches of computer networking. Also included in it is a detailed explanation of the various concepts and applications of communication systems. This book on computer networking and communication systems is a collective contribution of a renowned group of international experts.

Telecommunications Network Planning - Brunilde Sansò 2012-12-06

Telecommunications - central to our daily lives - continues to change dramatically. These changes are the result of technological advances, deregulation, the proliferation of broadband service offers, and the spectacular popularity of the Internet and wireless services. In such adynamic technological and economic environment, competition is increasing among service providers and among equipment manufacturers. Consequently, optimization of the planning process is becoming essential. Although telecommunications network planning has been tackled by the Operations Research community for some time, many fundamental problems remain challenging. Through its fourteen chapters, this book covers some new and some still challenging older problems which arise in the planning of telecommunication networks. Telecommunications Network Planning will benefit both telecommunications practitioners looking for efficient methods to solve their problems and operations researchers interested in telecommunications. The book examines network design and dimensioning problems; it explores Operation Research issues related to a new standard Asynchronous Transfer Mode (ATM); it overviews problems that arise when designing survivable SDH/SONET Networks; it considers some broadband network problems; and it concludes with three chapters on wireless and mobile networks. Leading area researchers have contributed their recent research on the telecommunications and network topics treated in the volume.

Performance Guarantees in Communication Networks - Cheng-Shang Chang 2012-12-06

Providing performance guarantees is one of the most important issues for future telecommunication networks. This book describes theoretical developments in performance guarantees for telecommunication networks from the last decade. Written for the benefit of graduate students and scientists interested in telecommunications-network performance this book consists of two parts. The first introduces the recently-developed filtering theory for providing deterministic (hard) guarantees, such as bounded delay and queue length. The filtering theory is developed under the min-plus algebra, where one replaces the usual addition with the min operator and the usual multiplication with the addition operator. As in the classical linear system theory, the filtering theory treats an arrival process (or a departure process) as a signal and a network element as a system. Network elements, including traffic regulators and servers, can be modelled as linear filters under the min-plus algebra, and they can be joined by concatenation, "filter bank summation", and feedback to form a composite network element. The problem of providing deterministic guarantees is equivalent to finding the impulse response of composite network elements. This section contains material on: - (s, r)-calculus - Filtering theory for deterministic traffic regulation, service guarantees and networks with variable-length packets - Traffic specification - Networks with multiple inputs and outputs - Constrained traffic regulation The second part of the book addresses stochastic (soft) guarantees, focusing mainly on tail distributions of queue lengths and packet loss probabilities and contains material on: - (s(q), r(q))-calculus and q-envelope rates - The large deviation principle - The theory of effective bandwidth The mathematical theory for stochastic guarantees is the theory of effective bandwidth. Based on the large deviation principle, the theory of effective bandwidth provides approximations for the bandwidths required to meet stochastic guarantees for both short-range dependent inputs and long-range dependent inputs.

Analysis of Computer and Communication Networks - Fayez Gebali 2008-06-24

Analysis of Computer and Communication Networks provides the basic techniques for modeling and analyzing two of the fundamental components of high performance networks: switching equipment, and software employed at the end nodes and intermediate switches. The book also reviews the design options used to build efficient switching equipment. Topics covered include Markov chains and queuing analysis, traffic modeling, interconnection networks, and switch architectures and buffering strategies. This book covers the mathematical theory and techniques necessary for analyzing telecommunication systems. Queuing and Markov chain analyses are provided for many protocols currently in use. The book then discusses in detail applications of Markov chains and queuing analysis to model more than 15 communications protocols and hardware components.

Telecommunication Networks - Eugenio Iannone 2017-12-19

Many argue that telecommunications network infrastructure is the most impressive and important technology ever developed. Analyzing the telecom market’s constantly evolving trends, research directions, infrastructure, and vital needs, Telecommunication Networks responds with revolutionized engineering strategies to optimize network construction. Omnipresent in society, telecom networks integrate a wide range of technologies. These include quantum field theory for the study of optical amplifiers, software architectures for network control, abstract algebra required to design error correction codes, and network, thermal, and mechanical modeling for equipment platform design. Illustrating how and why network developers make technical decisions, this book takes a practical engineering approach to systematically assess the network as a whole—from transmission to switching. Emphasizing a uniform bibliography and description of standards, it explores existing technical developments and the potential for projected alternative architectural paths, based on current market indicators. The author characterizes new device and equipment advances not just as quality improvements, but as specific responses to particular technical market necessities. Analyzing design problems to identify potential links and commonalities between different parts of the system, the book addresses interdependence of these elements and their individual influence on network evolution. It also considers power consumption and real estate, which sometimes outweigh engineering performance data in determining a product’s success. To clarify the potential and limitations of each presented technology and system analysis, the book includes quantitative data inspired by real products and prototypes. Whenever possible, it applies mathematical modeling to present measured data, enabling the reader to apply demonstrated concepts in real-world situations. Covering everything from high-level architectural elements to more basic component physics, its focus is to solve a problem from different perspectives, and bridge descriptions of well-consolidated solutions with newer research trends.

2018 International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS) - IEEE Staff 2018-07-09

The conference focuses on performace, reliability and dependability eveluation of telecommunication networks, computer systems and related areas in emerging technologies e g regarding big data handling, security and multiparadigm modelling and simulation Applications of new methodologies are also expected

International Telecommunications Law and Policy - Uchenna Jerome Orji 2019-01-18

Since the revolution in modern telecommunications that followed the invention of the telegraph, telecommunication networks have provided channels for the fast delivery of communications across national borders. This transnational nature of telecommunication networks have led to the establishment of international regulatory regimes on the subject. On the other hand, developing countries consider regional economic integration as a major strategy for promoting trade and development, telecommunications have been seen within this context as a strategic tool for facilitating regional economic integration. This has also led to the establishment of regional telecommunication regulatory regimes that aim to promote regional integration and regulatory harmonization. This book discusses telecommunication regimes established by international and regional organizations such as the United Nations, the International Telecommunication Union, the World Trade Organization, the African Union, the Economic Community of West African States, and the Southern African Development Community, among a number of others. It will be relevant to policy makers, regulators, lawyers, law students, investors and telecommunication operators, as well as any person interested in international and African regional telecommunication regimes.

Optimal Load Balancing in Distributed Computer Systems - Hisao Kameda 2012-12-06

An important consideration in improving the performance of a distributed computer system is the balancing of the load between the host computers. Load balancing may be either static or dynamic; static balancing strategies are generally based on information about the system's average behavior rather than its actual current state, while dynamic strategies react to the current state when making transfer decisions. Although it is often conjectured that dynamic load balancing outperforms static, careful investigation shows that this view is not always valid. Recent research on the problem of optimal static load balancing is clearly and intuitively presented, with coverage of distributed computer system models, problem formulation in load balancing, and effective algorithms for implementing optimization. Providing a thorough understanding of both static and dynamic strategies, this book will be of interest to all researchers and practitioners working to optimize performance in distributed computer systems.

Communication Networks and Computer Systems - Javier A Barria 2006-06-19

Communication networks and computer systems research is entering a new phase in which many of the established models and techniques of the last twenty years are being challenged. The research community is continuing to free itself from past intellectual constraints so that it may fully exploit the convergence of computing and communications. Evaluating the performance of emerging communications and computer systems constitutes a huge challenge. Thus, current research provides a set of heterogeneous tools and techniques embracing the uncertainties of time and space varying environments when the requests for diverse services are made in real time, and with very different quality of service expectations. These novel techniques will lead to fast and economic service deployment and effective dynamic resource management, and hence to new business strategies and infrastructures that will facilitate the emergence of future services and applications. This volume contains contributions and presentations made by leading international researchers at a workshop which was held in April 2004 to honour Professor Erol Gelenbe on the occasion of his inaugural lecture as the Dennis Gabor Chair at Imperial College London. Contents:Erol Gelenbe's Contributions to Computer and Networks Performance (A Bensoussan)Rethinking Incentives for Mobile Ad Hoc Networks (E Huang et al.)Fair and Efficient Allocation of Resources in the Internet (R M Salles & J A Barria)The Locality Principle (P J Denning)A Simulation-Based Performance Analysis of Epoch Task Scheduling in Distributed Processors (H Karatza)Counter Intuitive Aspects of Statistical Independence in Steady State Distributions (J P Buzen)The Non-Stationary Loss Queue: A Survey (K A Alnowibet & H Perros)Stabilization Techniques for Load-Dependent Queueing Networks Algorithms (G Casale & G Serazzi)Modelling and Simulation of Interdependent Critical Infrastructure: The Road Ahead (E Casalicchio et al.)Stochastic Automata Networks and Lumpable Stochastic Bounds: Bounding Availability (J M Fourneau et al.)Aggregation Methods for Cross-Layer Simulations (M Becker et al.)Space and Time Capacity in Dense Mobile Ad Hoc Networks (P Jacquet)Stochastic Properties of Peer-to-Peer Communication Architecture in a Military Setting (D P Gaver & P A Jacobs)Quantifying the Quality of Audio and Video Transmissions over the Internet: The PSQA Approach (G Rubino)A Study of the Dynamic Behavior of a Web Site (M C Calzarossa & D Tessera) Readership: Postgraduate and graduate students in computing and electrical & electronic engineering; computer and communication systems engineers. Keywords:Resource Management;Modeling;Simulation;Computer and Communication NetworksKey Features:A selection of outstanding research contributions by international experts in the field of networks and computer systemsUseful for graduate students, researchers and experts

Fundamentals of Performance Evaluation of Computer and Telecommunication Systems - Mohammed S. Obaidat 2010-01-26

The only singular, all-encompassing textbook on state-of-the-art technical performance evaluation Fundamentals of Performance Evaluation of Computer and Telecommunication Systems uniquely presents all techniques of performance evaluation of computers systems, communication networks, and telecommunications in a balanced manner. Written by the renowned Professor Mohammad S. Obaidat and his coauthor Professor Noureddine Boudriga, it is also the only resource to treat computer and telecommunication systems as inseparable issues. The authors explain the basic concepts of performance evaluation, applications, performance evaluation metrics, workload types, benchmarking, and characterization of workload. This is followed by a review of the basics of probability theory, and then, the main techniques for performance evaluation—namely measurement, simulation, and analytic modeling—with case studies and examples. Contains the practical and applicable knowledge necessary for a successful performance evaluation in a balanced approach Reviews measurement tools, benchmark programs, design of experiments, traffic models, basics of queueing theory, and operational and mean value analysis Covers the techniques for validation and verification of simulation as well as random number generation, random variate generation, and testing with examples Features numerous examples and case studies, as well as exercises and problems for use as homework or programming assignments Fundamentals of Performance Evaluation of Computer and Telecommunication Systems is an ideal textbook for graduate students in computer science, electrical engineering, computer engineering, and information sciences, technology, and systems. It is also an excellent reference for practicing engineers and scientists.

Modeling Telecom Networks and Systems Architecture - Thomas Muth 2012-12-06

The book outlines Sysnet Modelling, a method for modelling systems architecture. The method is particularly well suited for telecom networks and systems, although a large part of it may be used in a wider context.

Switching Systems in Telecommunication Networks - dr. eng. Alexandru Rusu-Casandra 2019-05-15

Switching and routing are two types of procedures having the same fundamental purpose which is transferring information between different users of communication networks. But, while routing must be viewed at the overall level of the communication network, the information being exchanged between network nodes, switching refers to operations involving a single communication node, the information being transferred between its input / output access ports. It should also be noted that the routing is executed according to a routing protocol used on the network, while the switching is based on elements belonging to a single node in the network, namely its switching structure, routing table and path selection algorithm between ports.

Distributed Computer and Communication Networks - Vladimir M. Vishnevskiy 2021-01-01

This book constitutes the refereed post-conference proceedings of the 23rd International Conference on Distributed and Computer and Communication Networks, DCCN 2020, held in Moscow, Russia, in September 2020. The 54 revised full papers and 1 revised short paper were carefully reviewed and selected from 167 submissions. The papers cover the following topics: computer and communication networks; analytical modeling of distributed systems; and distributed systems applications.

Fundamentals of Telecommunication Networks - Tarek N. Saadawi 1994-09-28

This book focuses on the fundamental techniques, concepts, and mechanisms used in the design, development, and operation of telecommunication networks. Topics covered include Data Communication Fundamentals, Network Protocols Architecture and the ISO Reference Model, Local Area Network Protocols and Technology, Integrated Services Digital Network (ISDN), Broadband ISDN, and more.

Communications and Networking - Jun Peng 2010-09-28

This book "Communications and Networking" focuses on the issues at the lowest two layers of communications and networking and provides recent research results on some of these issues. In particular, it first introduces recent research results on many important issues at the physical layer and data link layer of communications and networking and then briefly shows some results on some other important topics such as security and the application of wireless networks. In summary, this book covers a wide range of interesting topics of communications and

networking. The introductions, data, and references in this book will help the readers know more abut this topic and help them explore this exciting and fast-evolving field.

Security for Telecommunications Networks - Patrick Traynor 2008-07-12

This book responds to the growing need to secure critical infrastructure by creating a starting place for new researchers in secure telecommunications networks. It is the first book to discuss securing current and next generation telecommunications networks by the security community. The book not only discusses emerging threats and systems vulnerability, but also presents the open questions posed by network evolution and defense mechanisms. It is designed for professionals and researchers in telecommunications. The book is also recommended as a secondary text for graduate-level students in computer science and electrical engineering.

The Fundamental Role of Teletraffic in the Evolution of Telecommunications Networks - J. Labetoulle 2013-10-22

The International Teletraffic Congress (ITC) is a recognized international organization taking part in the work of the International Telecommunications Union. The congress traditionally deals with the development of teletraffic theory and its applications to the design, planning and operation of telecommunication systems, networks and services. The contents of ITC 14 illustrate the important role of teletraffic in the current period of rapid evolution of telecommunication networks. A large number of papers address the teletraffic issues behind developments in broadband communications and ATM technology. The extension of possiblities for user mobility and personal communications together with the generalization of common channnel signalling and the provision of new intelligent network services are further extremely significant developments whose teletraffic implications are explored in a number of contributions. ITC 14 also addresses traditional teletraffic subjects, proposing enhancements to traffic engineering practices for existing circuit and packet switched telecommunications networks and making valuable original contributions to the fundamental mathematical tools on which teletraffic theory is based. The contents of these Proceedings accurately reflect the extremely wide scope of the ITC, extending from basic mathematical theory to day-to-day traffic engineering practices, and constitute the state of the art in 1994 of one of the fundamental telecommunications sciences.

Multiple Access Protocols - Raphael Rom 2011-10-03

Computer communication networks have come of age. Today, there is hardly any professional, particularly in engineering, that has not been the user of such a network. This proliferation requires the thorough understanding of the behavior of networks by those who are responsible for their operation as well as by those whose task it is to design such networks. This is probably the reason for the large number of books, monographs, and articles treating relevant issues, problems, and solutions in this field. Among all computer network architectures, those based on broadcast mul tiple access channels stand out in their uniqueness. These networks appear naturally in environments requiring user mobility where the use of any fixed wiring is impossible and a wireless channel is the only available option. Because of their desirable characteristics multiple access networks are now used even in environments where a wired point-to-point network could have been installed. The understanding of the operation of multiple access network through their performance analysis is the focus of this book.

Teletraffic - Haruo Akimaru 2012-12-06

Contemporary information networks are developing to meet social demands, and as a result new technologies and systems are being introduced. The fundamental problem in this process is the optimization of system dimensions and configuration for a particular level of performance. In the second edition of this innovative text, basic teletraffic theories and their applications are described in detail and practical formulae for advanced models, with references for further reading, are provided. Examples and exercises illustrate the theories' application to real systems. The revised and expanded text includes sections on ATM (asynchronous transfer mode) with the latest performance evaluations for mixed bursty traffic and bursty traffic with finite buffers, and LANs (local area networks) with an improved performance evaluation method for CSMD/CD (Ethernet). Explanations throughout the book have also been refined. The second edition of Teletraffic is a translation and expansion of the original Japanese text by two leading authors. It enables researchers, engineers and telecommunication and computer network managers, even those not experts in teletraffic, to put the latest theories and engineering into practice.

e-Business and Telecommunication Networks - João Ascenso 2006-08-18

This book contains the best papers of the First International Conference on e-Business and Telecommunication Networks held in 2004. The book presents recent research on e-business and telecommunication networks. It includes analyses aspects of global communication information systems and services, and describes security and reliability problems and solutions in information systems and networks.

Computer-communication Networks - Norman Abramson 1973

Planning computer - communication networks; System design for computer networks; Optimal file allocation in a computer network; Scheduling, queueing, and delays in time-shared systems and computer networks; Common-carrier data communication; Interfacing and data concentration; Asynchronous time-division multiplexing systems; Multiple-access communications for computer nets; Regulatory policy and future date-transmission services; Economic considerations in computer-communication systems; The dartmounth time sharing network; Exploratory research on netting at IBM; The ARPA network.

OSS for Telecom Networks - Kundan Misra 2004-08-09

Places OSS software in the context of telecommunications as a business Gives a concrete understanding of what OSS is, what it does and how it does it, avoiding deep technical details Frequently relates OSS software to business drivers of telecom service providers

Multiservice Loss Models for Broadband Telecommunication Networks - Keith W. Ross 2012-12-06

Loss networks ensure that sufficient resources are available when a call arrives. However, traditional loss network models for telephone networks cannot cope with today's heterogeneous demands, the central attribute of Asynchronous Transfer Mode (ATM) networks. This requires multiservice loss models. This publication presents mathematical tools for the analysis, optimization and design of multiservice loss networks. These tools are relevant to modern broadband networks, including ATM networks. Addressed are networks with both fixed and alternative routing, and with discrete and continuous bandwidth requirements. Multiservice interconnection networks for switches and contiguous slot assignment for synchronous transfer mode are also presented.

Distributed Computer and Communication Networks - Vladimir M. Vishnevskiy 2018-09-03

This book constitutes the refereed proceedings of the 21th International Conference on Distributed and Computer and Communication Networks, DCCN 2018, held in Moscow, Russia, in September 2018. The 50 full papers and the 9 short papers were carefully reviewed and selected from 168 submissions. The papers cover the following topics: computer and communication networks architecture optimization; control in computer and communication networks; performance and QoS/QoE evaluation in wireless networks; analytical modeling and simulation of next-generation communications systems; queueing theory and reliability theory applications in computer networks; wireless 4G/5G networks, cm- and mm-wave radio technologies; RFID technology and its application in intellectual transportation networks; Internet of Things, wearables, and applications of distributed information systems; probabilistic and statistical models in information systems; mathematical modeling of high-tech systems; mathematical modeling and control problems; distributed and cloud computing systems, big data analytics.

Nature-Inspired Computing Applications in Advanced Communication Networks - Gupta, Govind P. 2019-12-27

With the rapid growth of technology in society, communication networks have become a heavily researched topic. Implementing these advanced systems is a challenge, however, due to the

abundance of optimization problems within these networks. The use of meta-heuristic algorithms and nature-inspired computing has become a prevalent technique among researchers for solving these complex problems within communication networks. Despite its popularity, this specific computing technique lacks the appropriate amount of research that is needed for professionals to grasp a definite understanding. Nature-Inspired Computing Applications in Advanced Communication Networks is a collection of innovative research on the methods and applications of natural computation techniques and algorithms within communication systems such as wireless sensor networks, vehicular adhoc networks, and internet of things. While highlighting topics including mobile sensor deployment, routing optimization, and sleep scheduling, this book is ideally designed for researchers, network professionals, computer scientists, mathematicians, developers, scholars, educators, and students seeking to enhance their understanding of nature-inspired computing and its solutions within various advanced communication networks.