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Digital Communication Principles of Digital Communication Digital Communications Fundamentals of Digital Communication Digital Communications Digital Communication Digital Communications Digital Communications Introduction to Digital Communication, Second Edition Digital Communication Principles of Digital Communication and Coding Analog and Digital Communication Systems Digital Communication Digital Communication (Ptu) Analog and Digital Communications Introduction to Digital Communication Systems Digital Communication Management The Social Church Introduction to Analog and Digital Communication Digital Communication Systems Using MATLAB and Simulink Digital Communications Digital Communication Over Fading Channels Principles of Digital Communication and Coding An Introduction to Principles of Digital Communication Engineering Digital Communications Multi-Carrier Digital Communications Digital Communication over Fading Channels Secure Digital Communications Communication Systems - I Digital Communication Digital Communication Introduction to Digital Communication Digital Communications Perspectives on Design and Digital Communication Navigating Digital Communication and Challenges for Organizations Exploring Digital Communication The Routledge Handbook of Language and Digital Communication Digital Communications by Satellite Analog and Digital Communication Navigation Design and SEO for Content-Intensive Websites

The authors give a detailed summary about the fundamentals and the historical background of digital communication. This includes an overview of the encoding principles and algorithms of textual information, audio information, as well as images, graphics, and video in the Internet. Furthermore the fundamentals of computer networking, digital security and cryptography are covered. Thus, the book provides a well-founded access to communication technology of computer networks, the internet and the WWW. Numerous pictures and images, a subject-index and a detailed list of historical personalities including a glossary for each chapter increase the practical benefit of this book that is well suited as well as for undergraduate students as for working practitioners. This text provides an introduction to the analysis and design of digital communication systems. The third edition has been updated with a discussion of modern technological advances, providing coverage of such topics as digital modulation and demodulation techniques, source coding, channel coding and decoding, spread spectrum signals, channel equilization, multiuser communications, and modulation and coding for fading multipath channels. In addition, the book has been reorganized so that each chapter builds on previous material, begins with an introduction to the history and classification of channel models and reviews important topics in probability and stochastic processes. This book contains material that should interest students of electrical engineering and computer science specializing in digital communications and also practicing electrical engineers who apply digital communications techni ques to telecommunication systems, digital radio, digital satellites, fiber optics, and the physical layer of computer networks. This book is an outgrowth of lecture notes prepared over a number of years at various universities. In the earlier years I benefited immensely from t 5 the excellent textbooks and monographs in preparing my notes. - With passing time I had to rely more and more on the current periodical literature, mainly the IEEE Transactions and the Bell System Technical Journal. Although the book is intended mainly for those who have already had an introduction to communications, as usually taught in an undergraduate course, it can also be used without this background. For that purpose I concentrated most of the necessary mathematics in Chapter I. If the mathematics is not an obstacle, the reader can start with Chapter 2. I tried, as far as possible, to make each chapter independent of the other chapters, and for that reason many concepts and notations have been defined several times. To keep the book at a reasonable length, however, it was impossible, in most cases, not to rely on derivations and results of previous chapters. The renowned communications theorist Robert Gallager brings his lucid writing style to the study of the fundamental system aspects of digital communication for a one-semester course for graduate students. With the clarity and insight that have characterized his teaching and earlier textbooks, he develops a simple framework and then combines this with careful proofs to help the reader understand modern systems and simplified models in an intuitive yet precise way. A strong narrative and links between theory and practice reinforce this concise, practical presentation. The book begins with data compression for arbitrary sources. Gallager then describes how to modulate the resulting binary data for transmission over wires, cables, optical fibers, and wireless channels. Analysis and intuitive interpretations are developed for channel noise models, followed by coverage of the principles of detection, coding, and decoding. The various concepts covered are brought together in a description of wireless communication, using CDMA as a case study. Digital Communications is the result of the author’s 38 years’ experience in teaching, and in design and development of various wireless communication systems. It covers all primary areas in digital communication systems in engineering. The book intends to give the students a grasp of the basic issues of communication systems during transition from analog to digital. To make the reading interesting as well as systematic, conscious efforts have been made to explain the basics of technology, avoiding complex mathematics as far as possible. Numerical problems are then introduced to help the students fully understand the concepts and applications.KEY FEATURES• Complete and thorough introduction to the analysis and design of digital communication systems• Concepts explained with practical applications derived from the personal experience of the author• Analytical steps of all derivation without any external reference• Numerous numerical examples to help students understand the fundamental applications of the concepts in practice This book shares new research findings and practical lessons learned that will foster advances in digital design, communication design, web, multimedia and motion design, graphic design and branding, and other related areas. It gathers the best papers presented at the 3rd International Conference on Digital Design and Communication, DIGICOM 2019, held on November 15–16, 2019, in Barcelos, Portugal. The respective contributions highlight new theoretical perspectives and practical research directions in design and communication, aimed at promoting their use in a global, digital world. The book offers a timely guide and a source of inspiration for designers of all kinds (Graphic, Digital, Web, UI & UX Design and Social Media), for researchers, advertisers, artists, entrepreneurs, and brand or corporate communication managers, and for teachers and advanced students. The director of communication is an impassioned profession that discovers which strategies are the best and the most intelligent. There are few manuals, and there are some that offer general and sparsely updated information about the change that new technologies imply. We find the literature isolated that can be directly useful. However, we will say that there is no single recipe for DirCom or communication consultants. Each one will offer different models according to the variables or factors that seem to them to be able to rectify the direction of a company according to his or her personal mood. The Routledge Handbook of Language and Digital Communication provides a comprehensive, state- of-the-art overview of language-focused research on digital communication, taking stock and registering the latest trends that set the agenda for future developments in this thriving and fast- moving field. The contributors are all leading figures or established authorities in their areas, covering a wide range of topics and concerns in the following seven sections: - Methods and perspectives - Language resources, genres, and discourses - Digital literacies - Digital communication in public - Digital selves and online-offline lives - Communities, networks, relationships - New debates and further directions. This volume showcases critical syntheses of the established literature on key topics and issues and, at the same time, reflects upon and engages with cutting edge research and new directions for study (as emerging within social media). A wide range of languages are represented, from Japanese, Greek, German and Scandinavian languages, to computer-mediated Arabic, Chinese and African languages. The Routledge Handbook of Language and Digital Communication is an essential resource for advanced undergraduates, postgraduates and researchers within English language and linguistics, applied linguistics and media and communication studies. Digital communications plays an important role in numerical transmission systems due to the proliferation of radio beams, satellite, optic fibbers, radar, and mobile wireless systems. This book provides the fundamentals and basic design techniques of digital communications with an emphasis on the systems of telecommunication and the principles of baseband transmission. With a focus on examples and exercises, this book will prepare you with a practical and real-life treatment of communication problems. A complete analysis of the structures used for emission or reception technology A set of approaches for implementation in current and future circuit design A summary of the design steps with examples and exercises for each circuit Multi-carrier modulation, in particular orthogonal frequency division multiplexing (OFDM), has been successfully applied to a wide variety of digital communications applications for several years. Although OFDM has been chosen as the physical layer standard for a diversity of important systems, the theory, algorithms, and implementation techniques remain subjects of current interest. This book is intended to be a concise summary of the present state of the art

of the theory and practice of OFDM technology. This book offers a unified presentation of OFDM theory and high speed and wireless applications. In particular, ADSL, wireless LAN, and digital broadcasting technologies are explained. It is hoped that this book will prove valuable both to developers of such systems, and to researchers and graduate students involved in analysis of digital communications, and will remain a valuable summary of the technology, providing an understanding of new advances as well as the present core technology. Analysis tools such as Fourier series, Fourier transforms signals, systems and spectral densities are discussed in the second chapter. Introduction is presented in the first chapter. Third chapter presents additional analysis techniques such as probability, random variables, distribution functions and density functions. Probability models and random processes are also discussed. Noise representation, sources, noise factor, noise temperature, filtering of noise, noise bandwidth and performance of AM/FM in presence of noise is discussed in fourth chapter. Analog pulse modulation is presented in fifth chapter. Sampling, PAM, PAM/TDM are discussed in this chapter. Sixth chapter deals with digital pulse modulation methods such as PCM, DM, ADM and DPCM. Seventh chapter presents digital multiplexers, line coding, synchronization, scramblers, ISI, eye patterns and equalization techniques. Digital modulation is presented in eighth chapter. Phase shift keying, frequency shift keying, QPSK, QAM and MSK are presented. Last chapter deals with error performance of these techniques using matched filter. Routledge Introductions to Applied Linguistics is a series of introductory level textbooks covering the core topics in Applied Linguistics, primarily designed for those beginning postgraduate studies or taking an introductory MA course, as well as advanced undergraduates. Titles in the series are also ideal for language professionals returning to academic study. The books take an innovative ‘practice to theory’ approach, with a ‘back-to-front’ structure. This leads the reader from real-world problems and issues, through a discussion of intervention and how to engage with these concerns, before finally relating these practical issues to theoretical foundations. Exploring Digital Communication aims to discuss real-world issues pertaining to digital communication, and to explore how linguistic research addresses these challenges. The text is divided into three sections (Problems and practices; Interventions; and Theory), each of which is further divided into two subsections which reflect linguistic issues relating to digital communication. The author seeks to demystify any perceived divide between online and offline communication, arguing that issues raised in relation to digital communication throw light on language use and practices in general, and thus linguistic interventions in this area have implications not only for users of digital communication but for linguists’ general understanding of language and society. Including relevant research examples, tasks and a glossary, this textbook is an invaluable resource for postgraduate and upper undergraduate students taking New Media or Communication Studies modules within Applied Linguistics and English Language courses. Digital Communications: Theory, Techniques and Applications is written for students of both undergraduate and post-graduate degree programs in engineering for a course on digital communication. In the first four chapters the book builds the theoretical background necessary to understand the principal ideas of digital communication systems. Thereafter, the book in chapters 5 through 9 discusses the core concepts such as digital coding, multiplexing and multiple access, digital modulation, demodulation and detection. The last chapter of the book discusses the applications of digital communication in the domains of satellite, optical and wireless communication systems. Heavily illustrated with more than 500 figures to help understand and relate to theoretical concepts better, the book also provides graded solved problems, challenging review questions, and numerical exercises for the practice. Navigation Design and SEO for Content-Intensive Websites: A Guide for an Efficient Digital Communication presents the characteristics and principal guidelines for the analysis and design of efficient navigation and information access systems on content-intensive websites, such as magazines and other media publications. Furthermore, the book aims to present the tools of information processing, including information architecture (IA) and content categorization systems, so that such designs can ensure a good navigation experience based on the semantic relations between content items. The book also presents best practices in the design of information access systems with regard to their main structures, including search query forms and search result pages. Finally, the book describes the foundations of search engine optimization (SEO), emphasizing SEO oriented to publications focused on communication and the coverage of current affairs, including images and videos. Focuses on the newly emerging and significant sector of content characterized by its use of multimedia: text, image and video Presents comprehensive coverage of sites and their combined information architecture and SEO needs Explores an analysis of existing best practices to offer operational proposals for the development of digital news and current affairs publications Analyzes academic studies by scholars working in this field Public involvement has the power to promote an active circulation of media content and can generate economic and cultural value for organizations. The current perspectives on interactions between audiences, organizations, and content production suggests a relational logic between audiences and media through new productivity proposals. In this sense, it is interesting to observe the reasoning of audience experience through the concepts of interactivity and participation. However, there is a gap between the intentions of communication professionals and their organizations and the effective circulation and content retention among the audiences of interest, as well as the distinction between informing and communicating. Navigating Digital Communication and Challenges for Organizations discusses communication research with a focus on organizational communication that includes a range of methods, strategies, and viewpoints on digital communication. Covering a range of topics such as internal communication and public relations, this reference work is ideal for researchers, academicians, policymakers, business owners, practitioners, instructors, and students. Unlike some other reproductions of classic texts (1) We have not used OCR(Optical Character Recognition), as this leads to bad quality books with introduced typos. (2) In books where there are images such as portraits, maps, sketches etc We have endeavoured to keep the quality of these images, so they represent accurately the original artefact. Although occasionally there may be certain imperfections with these old texts, we feel they deserve to be made available for future generations to enjoy. This is a modern textbook on digital communications and is designed for senior undergraduate and graduate students, whilst also providing a valuable reference for those working in the telecommunications industry. It provides a simple and thorough access to a wide range of topics through use of figures, tables, examples and problem sets. The author provides an integrated approach between RF engineering and statistical theory of communications. Intuitive explanations of the theoretical and practical aspects of telecommunications help the reader to acquire a deeper understanding of the topics. The book covers the fundamentals of antennas, channel modelling, receiver system noise, A/D conversion of signals, PCM, baseband transmission, optimum receiver, modulation techniques, error control coding, OFDM, fading channels, diversity and combining techniques, MIMO systems and cooperative communications. It will be an essential reference for all students and practitioners in the electrical engineering field. Signal quantizing and multiplexing. Satellite communications. Modulation and coding in distorted channels. Worldwide timing by satellite relay. Written by two distinguished experts in the field of digital communications, this classic text remains a vital resource three decades after its initial publication. Its treatment is geared toward advanced students of communications theory and to designers of channels, links, terminals, modems, or networks used to transmit and receive digital messages. The three-part approach begins with the fundamentals of digital communication and block coding, including an analysis of block code ensemble performance. The second part introduces convolutional coding, exploring ensemble performance and sequential decoding. The final section addresses source coding and rate distortion theory, examining fundamental concepts for memoryless sources as well as precepts related to memory, Gaussian sources, and universal coding. Appendixes of useful information appear throughout the text, and each chapter concludes with a set of problems, the solutions to which are available online. The clear, easy-to-understand introduction to digital communications Completely updated coverage of today's most critical technologies Step-by-step implementation coverage Trellis-coded modulation, fading channels, Reed-Solomon codes, encryption, and more Exclusive coverage of maximizing performance with advanced "turbo codes" "This is a remarkably comprehensive treatment of the field, covering in considerable detail modulation, coding (both source and channel), encryption, multiple access and spread spectrum. It can serve both as an excellent introduction for the graduate student with some background in probability theory or as a valuable reference for the practicing ommunication system engineer. For both communities, the treatment is clear and well presented." - Andrew Viterbi, The Viterbi Group Master every key digital communications technology, concept, and technique. Digital Communications, Second Edition is a thoroughly revised and updated edition of the field's classic, best-selling introduction. With remarkable clarity, Dr. Bernard Sklar introduces every digital communication technology at the heart of today's wireless and Internet revolutions, providing a unified structure and context for understanding them -- all without sacrificing mathematical precision. Sklar begins by introducing the fundamentals of signals, spectra, formatting, and baseband transmission. Next, he presents practical coverage of virtually every contemporary modulation, coding, and signal processing technique, with numeric examples and step-by-step implementation guidance. Coverage includes: Signals and processing steps: from information source through transmitter, channel, receiver, and information sink Key tradeoffs: signal-to-noise ratios, probability of error, and bandwidth expenditure Trellis-coded modulation and Reed-Solomon codes: what's behind the math Synchronization and spread spectrum solutions Fading channels: causes, effects, and techniques for withstanding fading The first complete how-to guide to turbo codes: squeezing maximum performance out of digital connections Implementing encryption with PGP, the de facto industry standard Whether you're building wireless systems, xDSL, fiber or coax-based services, satellite networks, or Internet infrastructure, Sklar presents the theory and the practical implementation details you need. With nearly 500 illustrations and 300 problems and exercises,

there's never been a faster way to master advanced digital communications. CD-ROM INCLUDED The CD-ROM contains a complete educational version of Elanix' SystemView DSP design software, as well as detailed notes for getting started, a comprehensive DSP tutorial, and over 50 additional communications exercises. The common principles underlying these and other applications are extracted and presented in a unified framework. Combining theoretical knowledge and practical applications, this advanced-level textbook covers the most important aspects of contemporary digital communication systems. Introduction to Digital Communication Systems focuses on the rules of functioning digital communication system blocks, starting with the performance limits set by the information theory. Drawing on information relating to turbo codes and LDPC codes, the text presents the basic methods of error correction and detection, followed by baseband transmission methods, and single- and multi-carrier digital modulations. The basic properties of several physical communication channels used in digital communication systems are explained, showing the transmission and reception methods on channels suffering from intersymbol interference. The text also describes the most recent developments in the transmission techniques specific to wireless communications used both in wireline and wireless systems. The case studies are a unique feature of this book, illustrating elements of the theory developed in each chapter. Introduction to Digital Communication Systems provides a concise approach to digital communications, with practical examples and problems to supplement the text. There is also a companion website featuring an instructors' solutions manual and presentation slides to aid understanding. Offers theoretical and practical knowledge in a self-contained textbook on digital communications Explains basic rules of recent achievements in digital communication systems such as MIMO, turbo codes, LDPC codes, OFDMA, SC-FDMA Provides problems at the end of each chapter with an instructors' solutions manual on the companion website Includes case studies and representative communication system examples such as DVB-S, GSM, UMTS, 3GPP-LTE This supplement contains worked out solutions to the chapter end problem sets found in Digital Communication, Second Edition, ISBN 0-7923-9391-0. "Did you know that you can see reviews of a church on Google Maps or Yelp? Have you considered what new people might find your church through a friend's social media? How often have you talked about "reaching people where they are"--And realized that much of the time, they are on the internet? This book is for Christians who are advocates of social media and who want to learn better about how to use these new technologies to further the Kingdom of God. Justin Wise speaks about social media as this generation's printing press-a revolutionary technology that can spread the gospel further and faster than we can imagine. Are we ready to think theologically about our digital age and reach people for Christ in a new way?" --Publisher description. A unified presentation, broad coverage, single-volume convenience This timesaving reference provides a unified approach to the performance analysis of digital communication systems over generalized fading channels. Employing alternative forms of such classical mathematical functions as the Gaussian Q-function, the Marcum Q-function, and the incomplete Gamma function, the book expresses communication system error probability performance in terms of the moment generation function (MGF) of the fading process. This MGF-based approach provides the unifying backbone of the book. Digital Communication over Fading Channels discusses in detail coherent, differentially coherent, and noncoherent communication systems as well as a large variety of fading channel models typical of communication links found in the real world. Coverage also includes single- and multichannel reception and, in the case of the latter, a large variety of diversity types. For each combination of communication type, channel fading model, and diversity type, the average bit error rate and/or symbol error rate is expressed in an easy-to-evaluate form. Special features include: * Important results previously scattered over many publications-now in a single volume * Simplified results heretofore available only in complex forms * Extremely broad coverage of topics * Explores practical applications, including the problem of optimum combining in the presence of co-channel interference Digital Communication using MATLAB and Simulink is intended for a broad audience. For the student taking a traditional course, the text provides simulations of the MATLAB and Simulink systems, and the opportunity to go beyond the lecture or laboratory and develop investigations and projects. For the professional, the text facilitates an expansive review of and experience with the tenets of digital communication systems. Elements of Digital Communication and Information TheoryModel of a Digital communication, System, Probability theory and Random variables, Logarithmic measure of information, Entropy and information rate, Conditional entropy and redundancy, Source coding, Fixed and Variable length code words, Source coding theorem, Prefix coding and kraft inequality, Shannon Fanno and Huffman coding.Digital Baseband TransmissionPCM coding, DM, DPCM, ADCM, Data transfer rate, Line coding and its properties, NRZ and RZ types, Signalling format for Unipolar, Polar, Bipolar (AMI) and Manchester coding and their power spectra (No Derivation) matched filter receiver, Derivation of its impulse response and peak pulse signal to noise ratio. Correlation Detector Decision. Threshold and Error Probability for binary unipolar (ON-OFF) signalling, ISI, Nyquist criterion for zero ISI and raised cosine spectrum.Digital Modulation TechniquesGram-Schmidt orthogonalization procedure, Types of digital modulation, Waveforms for amplitude, frequency and phase shift keying, Method of generation and detection of coherent and non-coherent binary ASK, FSK and PSK. Differential phase shift keying, Quadrature modulation techniques QPSK, Probability of error and comparison of various digital modulation techniques.Digital MultiplexingFundamentals of time division, Multiplexing, Electronic commutator, Bit, Byte interleaving T1 carrier system, Synchronization and signalling of T1, TDM, PCM hierarchy, T1 to T4 PCM TDM system (DS1 to DS4 signals).Error Control CodingError free communication over a noise channel, Hamming code, Relation between minimum distance and minimum distance error correcting capability, Linear block codes, Encoding and syndrome decoding, Cyclic codes, Encoder and Decoder for cyclic codes, Convolution codes, Tree diagram, state diagram and Trellis diagram, Viterbi and sequential decoding, Comparison of performance. This book primarily focuses on the design of analog and digital communication systems; and has been structured to cater to the second year engineering undergraduate students of Computer Science, Information Technology, Electrical Engineering and Electronics and Communication departments. For better understanding, the basics of analog communication systems are outlined before the digital communication systems section. The content of this book is also suitable for the students with little knowledge in communication systems. The book is divided into five modules for efficient presentation, and it provides numerous examples and illustrations for the detailed understanding of the subject, in a thorough manner. The four short years since Digital Communication over FadingChannels became an instant classic have seen a virtual explosion ofsignificant new work on the subject, both by the authors and bynumerous researchers around the world. Foremost among these is agreat deal of progress in the area of transmit diversity andspace-time coding and the associated multiple input-multiple output(MIMO) channel. This new edition gathers these and other results,previously scattered throughout numerous publications, into asingle convenient and informative volume. Like its predecessor, this Second Edition discusses in detailcoherent and noncoherent communication systems as well as a largevariety of fading channel models typical of communication linksfound in the real world. Coverage includes single- and multichannelreception and, in the case of the latter, a large variety ofdiversity types. The moment generating function (MGF)-basedapproach for performance analysis, introduced by the authors in thefirst edition and referred to in literally hundreds ofpublications, still represents the backbone of the book'spresentation. Important features of this new edition include: * An all-new, comprehensive chapter on transmit diversity,space-time coding, and the MIMO channel, focusing on performanceevaluation * Coverage of new and improved diversity schemes * Performance analyses of previously known schemes in new anddifferent fading scenarios * A new chapter on the outage probability of cellular mobile radiosystems * A new chapter on the capacity of fading channels * And much more Digital Communication over Fading Channels, Second Edition is anindispensable resource for graduate students, researchersinvestigating these systems, and practicing engineers responsiblefor evaluating their performance. This is a concise presentation of the concepts underlying the design of digital communication systems, without the detail that can overwhelm students. Many examples, from the basic to the cutting-edge, show how the theory is used in the design of modern systems and the relevance of this theory will motivate students. The theory is supported by practical algorithms so that the student can perform computations and simulations. Leading edge topics in coding and wireless communication make this an ideal text for students taking just one course on the subject. Fundamentals of Digital Communications has coverage of turbo and LDPC codes in sufficient detail and clarity to enable hands-on implementation and performance evaluation, as well as 'just enough' information theory to enable computation of performance benchmarks to compare them against. Other unique features include space-time communication and geometric insights into noncoherent communication and equalization. There are eight chapters, useful appendix and solved question papers in the book. Basic digital communication, line codes and sampling methods are presented at the beginning. Digital pulse modulation techniques such as PCM, DPCM, DM, ADM are presented. Continuous wave digital modulation methods such as BPSK, DPSK, QPSK, QAM, BFSK and OOK are presented with mathematical analysis of modulators and receivers. Issues related to baseband transmission such as ISI, Nyquist pulse shaping criterian, optimum reception, matched filter and eye patterns are also discussed. Concepts of information theory such as discrete memoryless channels, mutual information, shannon's theorems on source coding are also presented. Coding using linear block codes, cyclic codes and convolutional coding is also discussed. Secured communication using spread spectrum modulation is also discussed in detail.

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