

Forward Error Correction Fec Coding In Video Network Transmission Concepts Modeling And Performance Analysis

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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 about this topic and help them explore this exciting and fast-evolving field.

Advances in Visual Data Compression and Communication - Feng Wu 2014-07-25

Visual information is one of the richest and most bandwidth-consuming modes of communication. To meet the requirements of emerging applications, powerful data compression and transmission techniques are

required to achieve highly efficient communication, even in the presence of growing communication channels that offer increased bandwidth. Presenting the results of the author's years of research on visual data compression and transmission, *Advances in Visual Data Compression and Communication: Meeting the Requirements of New Applications* provides a theoretical and technical basis for advanced research on visual data compression and communication. The book studies the drifting problem in scalable video coding, analyzes the reasons causing the problem, and proposes various solutions to the problem. It explores the author's Barbell-based lifting coding scheme that has been adopted as common software by MPEG. It also proposes a unified framework for deriving a directional transform from the nondirectional counterpart. The structure of the framework and the statistic distribution of coefficients are similar to those of the nondirectional transforms, which facilitates subsequent entropy coding. Exploring the visual correlation that exists in media, the text extends the current coding framework from different aspects, including advanced image synthesis—from description and

reconstruction to organizing correlated images as a pseudo sequence. It explains how to apply compressive sensing to solve the data compression problem during transmission and covers novel research on compressive sensor data gathering, random projection codes, and compressive modulation. For analog and digital transmission technologies, the book develops the pseudo-analog transmission for media and explores cutting-edge research on distributed pseudo-analog transmission, denoising in pseudo-analog transmission, and supporting MIMO. It concludes by considering emerging developments of information theory for future applications.

Broadband Last Mile - Nikil Jayant 2018-10-03

Broadband Last Mile: Access Technologies for Multimedia

Communications provides in-depth treatments of access technologies and the applications that rely upon them or support them. It examines innovations and enhancements along multiple dimensions in access, with the overarching goal of ensuring that the last mile is not the weak link in the broadband chain. Written by experts from the academic and commercial segments of the field, the book's self-contained sections address topics related to the disciplines of communications, networking, computing, and signal processing. The core of this treatment contains contemporary reviews of broadband pipes in the classes of copper, cable, fiber, wireless, and satellite. It emphasizes the coexistence of these classes within a network, the importance of optical communications for unprecedented bandwidth, and the flexibility and mobility provided by wireless. The book also includes perspective on the increasingly important topic of network management, providing insights that are true regardless of the nature of the pipe. The text concludes with a discussion of newly emerging applications and broadband services. This book offers an all-in-one treatment of the physical pipes and network architectures that make rich and increasingly personalized applications possible. It serves as a valuable resource for researchers and practitioners working in the increasingly pervasive field of broadband.

Wireless Communications 3rd Edition - Andreas F. Molisch
2022-12-06

"Wireless communications is one of the most important modern technologies and is interwoven with all aspects of our daily lives. When we wake up, we check social media, email, and news on our smartphones. Before getting up, we adjust the room temperature through a Bluetooth-connected thermostat. After we leave the house and activate the Wi-Fi security cameras, we order a rideshare on a phone app that recognizes our location and are driven to a factory where manufacturing robots are connected and controlled via 5G. And that is only the start of the day.... It is thus no wonder that wireless infrastructure, user devices, and networks are among the largest and most critical industries in most countries. As the demands for wireless services constantly increase, so are the requirements for new products, and for engineers that can develop these products and bring them to market. Such engineers need a deep understanding of both the fundamentals that govern the behavior of wireless systems, the current standardized systems implementations, and more recent research developments that will influence the next generation of products. The goal of this book is to help students, researchers, and practicing engineers to acquire, refresh, or update this knowledge. It is designed to lead them from the fundamental principles and building blocks, such as digital modulation, fading, and reuse of spectrum, to more advanced technologies that underly modern wireless systems, such as multicarrier and multiantenna transmission, to a description of the standardized systems dominating 5G cellular, Wi-Fi, and short-range communications, to the cutting-edge research that will form the basis for beyond-5G systems. In brief, the book leads the reader from the fundamentals to beyond 5G"--

Computational Science - ICCS 2006 - Vassil N. Alexandrov 2006-05-10

This is Volume IV of the four-volume set LNCS 3991-3994 constituting the refereed proceedings of the 6th International Conference on Computational Science, ICCS 2006. The 98 revised full papers and 29 revised poster papers of the main track presented together with 500 accepted workshop papers were carefully reviewed and selected for inclusion in the four volumes. The coverage spans the whole range of

computational science.

Visual Content Processing and Representation - Narciso Garcia
2003-10-02

The purpose of VLBV 2003 was to provide an international forum for the discussion of the state of the art of visual content processing techniques, standards, and applications covering areas such as: video/image analysis, representation and coding, communications and delivery, consumption, synthesis, protection, and adaptation. The topics of special interest include all the areas relevant to image communications nowadays, from representation and coding to content classification, adaptation, and personalization. A meeting covering such a wide range of topics takes many years to develop. So, please follow a brief story of the evolution of this relevant and specialized forum and of its adaptation to the prevailing interests along time. At the beginning of 1993, the idea of a specialized workshop to discuss topics in advanced image communications came in Lausanne, Switzerland, at a meeting of the steering committee of the International Picture Coding Symposium. Therefore, the so-called International Workshop on Coding Techniques for Very Low Bit-rate Video VLBV was born as low bit-rate research was considered to be the leading edge. The first workshop was held at the University of Illinois at Urbana-Champaign, USA, in 1993; the second at the University of Essex in Colchester, UK, in April 1994; the third at NTT in Tokyo, Japan, in November 1995; the fourth at the University of Linköping, Sweden, in July 1997; the fifth in Urbana (again) in October 1998. Until this last workshop, VLBV life was closely tied with MPEG-4, that is to low bit-rate research.

Visual Information Representation, Communication, and Image Processing - Ya-Qin Zhang 1999-05-25

Discusses recent advances in the related technologies of multimedia computers, videophones, video-over-Internet, HDTV, digital satellite TV and interactive computer games. The text analyzes ways of achieving more effective navigation techniques, data management functions, and higher throughput networking. It synthesizes data on visual information venues, tracking the enormous commercial potential for new components

and compatible systems.

The Art of Wireless Sensor Networks - Habib M. Ammari 2013-12-17

During the last one and a half decades, wireless sensor networks have witnessed significant growth and tremendous development in both academia and industry. A large number of researchers, including computer scientists and engineers, have been interested in solving challenging problems that span all the layers of the protocol stack of sensor networking systems. Several venues, such as journals, conferences, and workshops, have been launched to cover innovative research and practice in this promising and rapidly advancing field. Because of these trends, I thought it would be beneficial to provide our sensor networks community with a comprehensive reference on as much of the findings as possible on a variety of topics in wireless sensor networks. As this area of research is in continuous progress, it does not seem to be a reasonable solution to keep delaying the publication of such reference any more. This book relates to the second volume and focuses on the advanced topics and applications of wireless sensor networks. Our rationale is that the second volume has all application-specific and non-conventional sensor networks, emerging techniques and advanced topics that are not as matured as what is covered in the first volume. Thus, the second volume deals with three-dimensional, underground, underwater, body-mounted, and societal networks. Following Donald E. Knuth's above-quoted elegant strategy to focus on several important fields (The Art of Computer Programming: Fundamental Algorithms, 1997), all the book chapters in this volume include up-to-date research work spanning various topics, such as stochastic modeling, barrier and spatiotemporal coverage, tracking, estimation, counting, coverage and localization in three-dimensional sensor networks, topology control and routing in three-dimensional sensor networks, underground and underwater sensor networks, multimedia and body sensor networks, and social sensing. Most of these major topics can be covered in an advanced course on wireless sensor networks. This book will be an excellent source of information for graduate students majoring in computer science, computer engineering, electrical engineering, or any related discipline.

Furthermore, computer scientists, researchers, and practitioners in both academia and industry will find this book useful and interesting.

Videoconferencing - James R. Wilcox 2017-09-29

First published in 2000. Routledge is an imprint of Taylor & Francis, an informa company.

Streaming Media with Peer-to-Peer Networks: Wireless

Perspectives - Fleury, Martin 2012-05-31

The number of users who rely on the Internet to deliver multimedia content has grown significantly in recent years. As this consumer demand grows, so, too, does our dependency on a wireless and streaming infrastructure which delivers videos, podcasts, and other multimedia. *Streaming Media with Peer-to-Peer Networks: Wireless Perspectives* offers insights into current and future communication technologies for a converged Internet that promises soon to be dominated by multimedia applications, at least in terms of bandwidth consumption. The book will be of interest to industry managers, and will also serve as a valuable resource to students and researchers looking to grasp the dynamic issues surrounding video streaming and wireless network development.

Networks - Benny Bing 2002-08-08

The joint conference, ICWLHN 2002 and ICN 2002, covers a wide variety of technical sessions covering all aspects of networking technology. It features some of the world's most dynamic presenters, including leading experts such as Norman Abramson (inventor of the first access protocol — the ALOHA protocol) and Daniel Awduche (pioneer of the MPLambdaS concept, now referred to as GMPLS). The proceedings for this joint conference is accessible to engineers, practitioners, scientists, as well as industry professionals from manufacturers to service providers.

Contents: Wireless Local Area NetworksQuality of ServiceMulticast NetworksHome NetworksNetwork Security and Virtual Private NetworksPower Management and Mobile AgentsMPLS Switching and DiffServTraffic Engineering and ManagementOptical NetworksLast Mile Technologies and Network SwitchingTCP Adaptation, Congestion Control, and Protocol DesignNetwork Performance EvaluationMobile IP

and Ad Hoc NetworksMobile Multimedia, Bluetooth, and Sensor NetworksNetworked Software and Applications3G Wireless and Software Radio Readership: Graduate students, researchers and academics in networking and electrical & electronic engineering. Keywords: *Visual Content Processing and Representation* - Narciso Garcia 2003-09-09

This book constitutes the refereed proceedings of the 8th International Workshop on Visual Content Processing and Representation, VLBV 2003, held in Madrid, Spain in September 2003. The 38 revised full papers presented together with 4 panel summaries were carefully reviewed and selected from 89 submissions. The papers address all current issues in video and image analysis, representation and coding, communications and delivery, consumption, synthesis, protection, adaptation, classification, and personalization.

Channel Coding: Theory, Algorithms, and Applications - 2014-07-29

This book gives a review of the principles, methods and techniques of important and emerging research topics and technologies in Channel Coding, including theory, algorithms, and applications. Edited by leading people in the field who, through their reputation, have been able to commission experts to write on a particular topic. With this reference source you will: Quickly grasp a new area of research Understand the underlying principles of a topic and its applications Ascertain how a topic relates to other areas and learn of the research issues yet to be resolved Quick tutorial reviews of important and emerging topics of research in Channel Coding Presents core principles in Channel Coding theory and shows their applications Reference content on core principles, technologies, algorithms and applications Comprehensive references to journal articles and other literature on which to build further, more specific and detailed knowledge

Video Over IP - Wes Simpson 2013-06-26

Video Over IP gives you everything you need to know to choose from among the many ways of transferring your video over a network. The information is presented in an easy to read format, with comparison charts provided to help you understand the benefits and drawbacks of

different technologies for a variety of practical applications. This new edition is expanded to fully cover HD and wireless technologies and new case studies. Whether your background is video, networking, broadcast, or telecommunications, you will benefit from the breadth of coverage that this book provides. Real-life application examples give readers successful examples of a variety of Video over IP networks that are up and running today.

Issues in Electronics Research and Application: 2012 Edition - 2013-01-10

Issues in Electronics Research and Application: 2012 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Electronics Research. The editors have built Issues in Electronics Research and Application: 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Electronics Research in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Electronics Research and Application: 2012 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

Multimedia Systems, Standards, and Networks - Atul Puri 2000-03-22
Describes ITU H.323 and H.324, H.263, ITU-T video, and MPEG-4 standards, systems, and coding; IP and ATM networks; multimedia search and retrieval; image retrieval in digital laboratories; and the status and direction of MPEG-7.

Mobile Communications Handbook on CD-ROM - Jerry D. Gibson 1999-03-22

On one easy to use CD-ROM, The Mobile Communications Handbook on CD-ROM covers: Principles of analog and digital communication with cordless telephones Wireless local area networks (LANs) International

technology standards. Cellular mobile radio Personal communication systems User location and addressing Wireless data and technology standards Its tremendous scope and ease of use makes Mobile Communications on CD-ROM the primary reference for every aspect of mobile communications. Mobile Communications Handbook on CD-ROM is exactly what you need to keep up with this growing and evolving field.

Mobile Multimedia Communications - Luigi Atzori 2012-04-29

This book constitutes the thoroughly refereed post-conference proceedings of the 7th International ICST Conference on Mobile Multimedia Communications (MOBIMEDIA 2011) held in Cagliari, Italy, in September 2011 The 26 revised full papers presented were carefully selected from numerous submissions and focus topics such as quality of experience, dynamic spectrum access wireless networks in the TV white spaces, media streaming, mobile visual search, image processing and transmission, and mobile applications.

Intelligent Integrated Media Communication Techniques - Jurij F. Tasic 2007-05-08

This volume contains many examples and applied methods explaining the basic architecture of the mobile terminals. It includes sufficient introductory material to enabling even non-expert readers to understand the topics and to make a step towards system integration of complex future applications.

Computational Science and Its Applications - ICCSA 2004 - Antonio Laganà 2004-04-29

The natural mission of Computational Science is to tackle all sorts of human problems and to work out intelligent automata aimed at alleviating the burden of working out suitable tools for solving complex problems. For this reason

Computational Science, though originating from the need to solve the most challenging problems in science and engineering (computational science is the key player in the fight to gain fundamental advances in astronomy, biology, chemistry, environmental science, physics and several other scientific and engineering disciplines) is increasingly turning its attention to all fields of human activity. In all activities, in fact, intensive

computation, information handling, knowledge synthesis, the use of ad-hoc devices, etc. increasingly need to be exploited and coordinated regardless of the location of both the users and the (various and heterogeneous) computing platforms. As a result the key to understanding the explosive growth of this discipline lies in two adjectives that more and more appropriately refer to Computational Science and its applications: interoperable and ubiquitous. Numerous examples of ubiquitous and interoperable tools and applications are given in the present four LNCS volumes containing the contributions delivered at the 2004 International Conference on Computational Science and its Applications (ICCSA 2004) held in Assisi, Italy, May 14-17, 2004.

Broadband Mobile Multimedia - Yan Zhang 2008-06-03

Multimedia service provisioning is believed to be one of the prerequisites to guarantee the success of next-generation wireless networks.

Examining the role of multimedia in state-of-the-art wireless systems and networks, *Broadband Mobile Multimedia: Techniques and Applications* presents a collection of introductory concepts, fundamental tech

The Communications Handbook - Jerry D. Gibson 2018-10-08

For more than six years, *The Communications Handbook* stood as the definitive, one-stop reference for the entire field. With new chapters and extensive revisions that reflect recent technological advances, the second edition is now poised to take its place on the desks of engineers, researchers, and students around the world. From fundamental theory to state-of-the-art applications, *The Communications Handbook* covers more areas of specialty with greater depth than any other handbook available. Telephony Communication networks Optical communications Satellite communications Wireless communications Source compression Data recording Expertly written, skillfully presented, and masterfully compiled, *The Communications Handbook* provides a perfect balance of essential information, background material, technical details, and international telecommunications standards. Whether you design, implement, buy, or sell communications systems, components, or services, you'll find this to be the one resource you can turn to for fast,

reliable, answers.

Handbook of Research on Secure Multimedia Distribution - Lian, Shiguo 2009-03-31

"This handbook is for both secure multimedia distribution researchers and also decision makers in obtaining a greater understanding of the concepts, issues, problems, trends, challenges and opportunities related to secure multimedia distribution"--Provided by publisher.

Multimedia Networking and Coding - Farrugia, Reuben A. 2012-12-31

Advances in multimedia communication systems have enhanced the need for improved video coding standards. Due to the inherent nature of video content, large bandwidths and reliable communication links are required to ensure a satisfactory level of quality experience; inspiring industry and research communities to concentrate their efforts in this emerging research area. *Multimedia Networking and Coding* covers widespread knowledge and research as well as innovative applications in multimedia communication systems. This book highlights recent techniques that can evolve into future multimedia communication systems, also showing experimental results from systems and applications.

Digital Signal Processing Handbook on CD-ROM - VIJAY MADISSETTI 1999-02-26

A best-seller in its print version, this comprehensive CD-ROM reference contains unique, fully searchable coverage of all major topics in digital signal processing (DSP), establishing an invaluable, time-saving resource for the engineering community. Its unique and broad scope includes contributions from all DSP specialties, including: telecommunications, computer engineering, acoustics, seismic data analysis, DSP software and hardware, image and video processing, remote sensing, multimedia applications, medical technology, radar and sonar applications

Encyclopedia of Multimedia - Borko Furht 2008-11-26

This second edition provides easy access to important concepts, issues and technology trends in the field of multimedia technologies, systems, techniques, and applications. Over 1,100 heavily-illustrated pages — including 80 new entries — present concise overviews of all aspects of software, systems, web tools and hardware that enable video, audio and

developing media to be shared and delivered electronically.

Advanced Computer and Communication Engineering Technology - Hamzah Asyrani Sulaiman 2014-11-01

This book covers diverse aspects of advanced computer and communication engineering, focusing specifically on industrial and manufacturing theory and applications of electronics, communications, computing and information technology. Experts in research, industry, and academia present the latest developments in technology, describe applications involving cutting-edge communication and computer systems and explore likely future directions. In addition, access is offered to numerous new algorithms that assist in solving computer and communication engineering problems. The book is based on presentations delivered at ICOCOE 2014, the 1st International Conference on Communication and Computer Engineering. It will appeal to a wide range of professionals in the field, including telecommunication engineers, computer engineers and scientists, researchers, academics and students.

Digital Transmission Systems - David R. Smith 2012-12-06

Digital Transmission Systems, Third Edition, is a comprehensive overview of the theory and practices of digital transmission systems used in digital communication. This new edition has been completely updated to include the latest technologies and newest techniques in the transmission of digitized information as well as coverage of digital transmission design, implementation and testing.

Computational Science - ICCS 2006 - Vassil N. Alexandrov 2006-05-26

The four-volume set LNCS 3991-3994 constitutes the refereed proceedings of the 6th International Conference on Computational Science, ICCS 2006, held in Reading, UK, in May 2006. The main conference and its 32 topical workshops attracted over 1400 submissions. The 98 revised full papers and 29 revised poster papers of the main track presented together with 500 accepted workshop papers were carefully reviewed and selected for inclusion in the four volumes. The papers span the whole range of computational science, with focus on the following major themes: tackling grand challenges problems;

modelling and simulations of complex systems; scalable algorithms and tools and environments for computational science. Of particular interest were the following major recent developments in novel methods and modelling of complex systems for diverse areas of science, scalable scientific algorithms, advanced software tools, computational grids, advanced numerical methods, and novel application areas where the above novel models, algorithms and tools can be efficiently applied such as physical systems, computational and systems biology, environmental systems, finance, and others.

Three-Dimensional Television - H.M. Ozaktas 2007-11-13

This book is the condensed result of an extensive European project developing the future of 3D-Television. The book describes the state of the art in relevant topics: Capture of 3D scene for input to 3DTV system; Abstract representation of captured 3D scene information in digital form; Specifying data exchange format; Transmission of coded data; Conversion of 3DTV data for holographic and other displays; Equipment to decode and display 3DTV signal.

The Mobile Communications Handbook - Jerry D. Gibson 1999-04

In a single volume, this handbook covers the entire field -- from principles of analog and digital communications to cordless telephones, wireless LANs, and international technology standards. The tremendous scope of this second edition ensures that its serving as the primary reference for every aspect of mobile communications. Details and references follow preliminary discussions, providing readers with the most accurate information available on the particular topic.

Multimedia Engineering - A. C. M. Fong 2006-10-02

Multimedia technologies and the internet are increasingly intrinsic to our daily lives, and into the future will continue to transform the way we live. Multimedia Engineering describes the latest advances in this technology applied to the Internet and WWW. It immerses the reader into the development of many practical internet/ multimedia systems, offering an insight into a range of engineering problems and solutions. It provides a broad coverage of internet/WWW and multimedia processing, as well as transmission and practical applications. Provides an overview of state-of-

the-art technologies Addresses commercial, industrial and educational applications and security and privacy issues. Offers a detailed background into how the internet has been used to support multimedia communications Assumes a practical and descriptive problem-solving approach, featuring many worked-through examples Written by widely published authors with years of research in the field Multimedia Engineering will appeal to graduate and senior undergraduate students in electrical and electronic engineering, industrial, systems & computer engineering. It will also be of interest to electrical, computer and systems engineers and web developers interested in, or already engaged in, this emerging field.

Networking and Telecommunications: Concepts, Methodologies, Tools, and Applications - Management Association, Information Resources 2010-01-31

"This multiple-volume publications exhibits the most up-to-date collection of research results and recent discoveries in the transfer of knowledge access across the globe"--Provided by publisher.

Error Correction Coding - Todd K. Moon 2020-12-15

Providing in-depth treatment of error correction Error Correction Coding: Mathematical Methods and Algorithms, 2nd Edition provides a comprehensive introduction to classical and modern methods of error correction. The presentation provides a clear, practical introduction to using a lab-oriented approach. Readers are encouraged to implement the encoding and decoding algorithms with explicit algorithm statements and the mathematics used in error correction, balanced with an algorithmic development on how to actually do the encoding and decoding. Both block and stream (convolutional) codes are discussed, and the mathematics required to understand them are introduced on a "just-in-time" basis as the reader progresses through the book. The second edition increases the impact and reach of the book, updating it to discuss recent important technological advances. New material includes: Extensive coverage of LDPC codes, including a variety of decoding algorithms. A comprehensive introduction to polar codes, including systematic encoding/decoding and list decoding. An introduction to

fountain codes. Modern applications to systems such as HDTV, DVBT2, and cell phones Error Correction Coding includes extensive program files (for example, C++ code for all LDPC decoders and polar code decoders), laboratory materials for students to implement algorithms, and an updated solutions manual, all of which are perfect to help the reader understand and retain the content. The book covers classical BCH, Reed Solomon, Golay, Reed Muller, Hamming, and convolutional codes which are still component codes in virtually every modern communication system. There are also fulsome discussions of recently developed polar codes and fountain codes that serve to educate the reader on the newest developments in error correction.

Next-Generation Video Coding and Streaming - Benny Bing 2015-10-01
Reviews the new High Efficiency Video Coding (HEVC) standard and advancements in adaptive streaming technologies for use in broadband networks and the Internet This book describes next-generation video coding and streaming technologies with a comparative assessment of the strengths and weaknesses. Specific emphasis is placed on the H.265/HEVC video coding standard and adaptive bit rate video streaming. In addition to evaluating the impact of different types of video content and powerful feature sets on HEVC coding efficiency, the text provides an in-depth study on the practical performance of popular adaptive streaming platforms and useful tips for streaming optimization. Readers will learn of new over-the-top (OTT) online TV advancements, the direction of the broadband telecommunications industry, and the latest developments that will help keep implementation costs down and maximize return on infrastructure investment. Reviews the emerging High Efficiency Video Coding (HEVC) standard and compares its coding performance with the MPEG-4 Advanced Video Coding (AVC) and MPEG-2 standards Provides invaluable insights into the intra and inter coding efficiencies of HEVC, such as the impact of hierarchical block partitioning and new prediction modes Evaluates the performance of the Apple and Microsoft adaptive streaming platforms and presents innovative techniques related to aggregate stream bandwidth prediction, duplicate chunk Includes end-of-chapter homework problems and access

to instructor slides Next-Generation Video Coding and Streaming is written for students, researchers, and industry professionals working in the field of video communications. Benny Bing has worked in academia for over 20 years. He has published over 80 research papers and 12 books, and has 6 video patents licensed to industry. He has served as a technical editor for several IEEE journals and an IEEE Communications Society Distinguished lecturer. He also received the National Association of Broadcasters (NAB) Technology Innovation Award for demonstrations of advanced media technologies.

Image and Signal Processing - Abderrahim Elmoataz 2010-06-09

This book constitutes the refereed proceedings of the 4th International Conference on Image and Signal Processing, ICISP 2010, held in Québec, Canada June 30 - July 2, 2010. The 69 revised full papers were carefully selected from 165 submissions. The papers presented are organized in topical sections on Image Filtering and Coding, Pattern Recognition, Biometry, Signal Processing, Video Coding and Processing, Watermarking and Document Processing, Computer Vision and Biomedical Applications.

Advances in Networks and Communications - Natarajan Meghanathan 2010-12-14

This volume constitutes the second of three parts of the refereed proceedings of the First International Conference on Computer Science and Information Technology, CCSIT 2010, held in Bangalore, India, in January 2011. The 66 revised full papers presented in this volume were carefully reviewed and selected. The papers are organized in topical sections on networks and communications; network and communications security; wireless and mobile networks.

Intelligent Multimedia Communication: Techniques and Applications - Chang Wen Chen 2010-03-12

Multimedia data are used more and more widely in human being's life, e.g., videoconferencing, visual telephone, IPTV, etc. Nearly most of the applications need multimedia transmission techniques that send multimedia data from one side to another side and keep the properties of efficiency, robustness and security. Here, the efficiency denotes the time

cost of transmission operations, the robustness denotes the ability to survive transmission errors or noises, and the security denotes the protection of the transmitted media content. Recently, various intelligent or innovative techniques are invented, which bring vast performance improvements to practical applications. For example, such content transmission techniques as p2p, sensor network and ad hoc network are constructed, which adaptively use the peers' properties to improve the network's resources. Multimedia adaptation techniques can adjust the multimedia data rate in order to compliant with the network's bandwidth. Scalable encryption techniques can generate the data stream that can be correctly decrypted after bit rate conversion. Ubiquitous multimedia services make the user share any kind of content anywhere. The book includes fourteen chapters highlighting current concepts, issues and emerging technologies. Distinguished scholars from many prominent research institutions around the world contribute to the book. The book covers various aspects, including not only some fundamental knowledge and the latest key techniques, but also typical applications and open issues. For example, the covered topics include the present and future video coding standards, stereo and multiview coding techniques, free-viewpoint TV techniques, wireless broadcasting techniques, media streaming techniques, wireless media transmission techniques and systems, and User-Generated Content sharing.

Embedded Computer Systems: Architectures, Modeling, and Simulation - Koen Bertels 2009-07-21

This book constitutes the refereed proceedings of the 9th International Workshop on Architectures, Modeling, and Simulation, SAMOS 2009, held on Samos, Greece, on July 20-23, 2009. The 18 regular papers presented were carefully reviewed and selected from 52 submissions. The papers are organized in topical sections on architectures for multimedia, multi/many cores architectures, VLSI architectures design, architecture modeling and exploration tools. In addition there are 14 papers from three special sessions which were organized on topics of current interest: instruction-set customization, reconfigurable computing and processor architectures, and mastering cell BE and GPU execution

platforms.

System Level Hardware/Software Co-Design - Joris van den Hurk

2013-04-17

Hierarchical design methods were originally introduced for the design of digital ICs, and they appeared to provide for significant advances in design productivity, Time-to-Market, and first-time right design. These concepts have gained increasing importance in the semiconductor industry in recent years. In the course of time, the supportive quality of hierarchical methods and their advantages were confirmed. *System Level Hardware/Software Co-design: An Industrial Approach* demonstrates the applicability of hierarchical methods to hardware / software codesign, and mixed analogue / digital design following a similar approach.

Hierarchical design methods provide for high levels of design support, both in a qualitative and a quantitative sense. In the qualitative sense, the presented methods support all phases in the product life cycle of electronic products, ranging from requirements analysis to application

support. Hierarchical methods furthermore allow for efficient digital hardware design, hardware / software codesign, and mixed analogue / digital design, on the basis of commercially available formalisms and design tools. In the quantitative sense, hierarchical methods have prompted a substantial increase in design productivity. *System Level Hardware/Software Co-design: An Industrial Approach* reports on a six year study during which time the number of square millimeters of normalized complexity an individual designer contributed every week rose by more than a factor of five. Hierarchical methods therefore enabled designers to keep track of the ever increasing design complexity, while effectively reducing the number of design iterations in the form of redesigns. *System Level Hardware/Software Co-design: An Industrial Approach* is the first book to provide a comprehensive, coherent system design methodology that has been proven to increase productivity in industrial practice. The book will be of interest to all managers, designers and researchers working in the semiconductor industry.