Video Over Wireless

Multi-level Adaptive Video Streaming Over Wireless Channels
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Technology, Trends and Applications
Scalable Video Transmission Over Wireless Networks
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The Proceedings of the Fifth IFIP-TC6 International Conference on Mobile and Wireless Communications Networks
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Architecture and Design, From VoIP to Wireless
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VBR Video Streaming Over Wireless Networks
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Advanced Video Communications over Wireless Networks
Second to Third Generation and Beyond
Wireless Multimedia Communications
Computational Intelligence in Wireless Sensor Networks
5th International Conference, ADHOC-NOW 2006, Ottawa, Canada, August 17-19, 2006 Proceedings
Video Coding for Wireless Communication Systems
17th International Forum, IFTC 2020, Shanghai, China, December 2, 2020, Revised Selected Papers
Recent Advances and Future Challenges
Singapore, 27-29 October 2003
Technology Trends in Wireless Communications
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MCCANN JEFFERSON

Multi-level Adaptive Video Streaming Over Wireless Channels Springer Science & Business Media
This book constitutes the refereed proceedings of the 8th International Conference on Wired/Wireless Internet Communications, WWIC 2010, held in Luleå, Sweden, in June 2010. The 17 revised full papers were carefully reviewed and selected from 45 submissions. The papers are thematically grouped into 5 technical sessions such as cooperation and multimedia traffic management in WN, advances to IEEE 802.11, routing and performance optimization, security, control and signalling, as well as wireless sensor networks.
Video Over Wireless LAP Lambert Academic Publishing
Wireless video communications encompass a broad range of issues and opportunities that serve as the catalyst for technical innovations. To disseminate the most recent advances in this challenging yet exciting field, Advanced Video Communications over Wireless Networks provides an in-depth look at the fundamentals, recent technical achievements, challenges, and emerging trends in mobile and wireless video communications. The editors have carefully selected a panel of researchers with expertise in diverse aspects of wireless video communication to cover a wide spectrum of topics, including the underlying theoretical fundamentals associated with wireless video communications, the transmission schemes tailored to mobile and wireless networks, quality metrics, the architectures of practical systems, as well as some novel directions. They address future directions, including Quality-of-Experience in wireless video communications, video communications over future networks, and 3D video communications. The book presents a collection of tutorials, surveys, and original contributions, providing an up-to-date, accessible reference for further development of research and applications in mobile and wireless video communication systems. The range of coverage and depth of expertise make this book the go-to resource for facing current and future challenges in this field.
Performance Analaysis of H 264 Video Codec in Wireless Environment Springer Nature
Abstract: "Audio: With the advent of cellular technologies, people have begun to realize the potential advantages of mobile communications. Wireless local area networks are beginning to

extend LAN connectivity to mobile users. By integrating voice with the wireless local area data networks, applications can be consolidated onto a single platform. In addition the voice connection can be interfaced to the public telephone system to provide global access from the wireless LAN. This thesis attempts to explore the requirements and feasibility of toll-quality voice over wireless data networks and an interface between the wireless data network and the public telephone system. Video: Real-time video over wireless data networks has been a previously unexplored area of research. The transmission of video over a wireless data network can allow the integration of the video with other data applications, allowing the increased functionality of an integrated environment and the reduced cost of sharing the access medium between applications. An immediate application of digital video over wireless networks is the implementation of a video surveillance system for use on a mobile platform. This thesis investigates the requirements for the acceptable transmission of video over a wireless data network and its application in a security environment."

Video streaming over wireless multi-hop mesh networks Artech House

As the network resource and capacity have been increased, the video quality has also been improved from HD, full HD to 2K and 4K, expecting up to 8K. In addition to the video quality and size, explosively increased demands on video and multimedia content services such as Youtube, Netflix and hulu will accelerate the volume of video traffic in the network, expected to 86% of the whole network traffic by the end of 2016. As network QoS values cannot quantify users satisfaction for video service times, a method to assess the video quality on display accurately and robustly is required to obtain user quality of experience (QoE). Video streaming traffic is very sensitive and heaviest in the network. It is hard to guarantee end-to-end service, especially at the edge wireless networks such as wireless LAN and cellular networks. Pervasive mobile devices such as tablet, iPad, smartphone and laptop are also very significant factors that should be considered in developing metrics and schemes to improve multimedia communications over wireless networks. From these motivations, we propose to consider the characteristics of the multimedia application and that of wireless communications together, and take advantages of these properties to develop communication protocols which can support multimedia delivery effectively. 1. Wireless networks are un-aware of video delivery. Loss of different packets in a video has different impact on video quality. A video-aware MAC protocol in wireless LAN (IEEE 802.11e) is proposed which can efficiently transmit packets and perform perceptual optimizations. 2. Cellular networks use numerous reliability mechanisms in different layers leading to degrade network performance of multimedia multicast and broadcast. We identify these mechanisms and propose a joint probabilistic model for cross-layer coordination in 4G LTE-A video multicast (one-to-many) traffics. 3. Apart from ensuring reliable video-aware delivery, it is important to ensure a good user experience. Video quality assessment tools are not suited for real-time and mobile applications. We propose new metrics for online evaluation (approximation) of subjective video quality which is then feedback-ed to network operators to finetune the network performance. 4. A video streaming service over cloud environment faces different difficulties for syncing and delivering heavy video contents with the current video streaming protocols. We propose VSync for cloud-based video streaming services that can offer realtimely parallel video transcoding and transmission when requested by users. The proposed research makes significant contributions to development of future video delivery paradigm, comprising mobile devices served HD or higher quality video contents with better user QoE over hybrid networks (WiFi, Cellular + WiFi, cellular + Femto).

Technology, Trends and Applications CRC Press

In daily life use of high-quality and low-bit rate video communication is growing day by day. The ending of the 20th century multimedia traffic, especially which video streaming has increased by using H.264/Advanced Video Coding (AVC) standard. The exceptional performance of H.264/AVC has attracted the attention of the electronics industry, and some broadcasted digital programs on wireless mobile phones use a video codec made with the H.264/AVC standard. Streaming video is becoming famous over current generation of mobile wireless network. The applications expected for the H.264/AVC standard consist of broadcast over cable, multi-media streaming services over cable modem, local area network (LAN), and wireless networks; conversational services over wireless and mobile networks, and multimedia messaging services over LAN, wireless, and mobile networks. With such wide application coverage, H.264/AVC quickly received a great deal of recent attention from industry and found wide-spread standard system.

Scalable Video Transmission Over Wireless Networks Elsevier

The International Conference on Wireless and Mobile networks (WiMo) aims to bring together innovative ideas and new research trends in wireless and mobile networks. Wireless networks are the best inventions in history. Wireless networking gives you a cheap and easy way to share one Internet connection between multiple computers, eliminating the need for more than one modem. You can even add new computers to your network simply by plugging in a wireless card and switching them on––they have an Internet connection straight away! There aren't many wired networks that can say that. This conference is dedicated to addressing the challenges in the areas of wireless and mobile networks. It looks for significant contributions to wireless and mobile computing in theoretical and practical aspects. The wireless and mobile computing domain emerges from integrating personal computing, networks, communication te- nologies, cellular technology and Internet technology. Modern applications are eme- ing in the area of mobile ad hoc networks and sensor networks. WiMo 2010 intended to cover contributions in both design and analysis in the context of mobile, wireless, ad hoc, and sensor networks. The goal of the conference was to bring together - searchers and practitioners from academia and industry to focus on advanced wireless and mobile computing concepts and establish new collaborations in these areas.

Enhanced Video Communication Over Wireless Networks IGI Global

Here are the refereed proceedings of the 5th International Conference on Ad-Hoc Networks and Wireless, ADHOC-NOW 2006, held in Ottawa, Canada, August 2006. The book presents 25 revised full papers and 10 revised short papers together with abstracts of 2 invited talks, in sections on routing in sensor networks, Routing in MANET, short papers on routing, security, wireless MAC, short papers on security, QoS and TCP, and upper layer issues.

McGraw Hill Professional

Video streaming applications over wireless networks have turned out to be immensely popular recently. In this thesis, we first study the buffering schemes for the VBR video streaming in heterogeneous wireless networks. An analytical framework is presented to derive the expected number of jitters and average buffering delay. Through experimenting with a wide range of buffering schemes, we quantify the benefit of incorporating user location information in streaming over heterogeneous wireless networks. Second, we consider the delivery of scalable VBR video

streams over wireless channels. We propose adaptive rate control algorithms to improve the combined system performance of video frame quality and playout smoothness based on the feedback information of wireless network estimation, buffer content and playback situation. The proposed adaptive rate control algorithms provide significantly improved streaming quality compared with the non-control policy.

Mixed Streaming of Video Over Wireless Networks Springer Science & Business Media

Wireless video communications encompass a broad range of issues and opportunities that serve as the catalyst for technical innovations. To disseminate the most recent advances in this challenging yet exciting field, Advanced Video Communications over Wireless Networks provides an in-depth look at the fundamentals, recent technical achievements, challenges, and emerging trends in mobile and wireless video communications. The editors have carefully selected a panel of researchers with expertise in diverse aspects of wireless video communication to cover a wide spectrum of topics, including the underlying theoretical fundamentals associated with wireless video communications, the transmission schemes tailored to mobile and wireless networks, quality metrics, the architectures of practical systems, as well as some novel directions. They address future directions, including Quality-of-Experience in wireless video communications, video communications over future networks, and 3D video communications. The book presents a collection of tutorials, surveys, and original contributions, providing an up-to-date, accessible reference for further development of research and applications in mobile and wireless video communication systems. The range of coverage and depth of expertise make this book the go-to resource for facing current and future challenges in this field.

Video Streaming on Collaborated Mobile Devices Over Wireless Mesh Networks CRC Press

Wireless video communications encompass a broad range of issues and opportunities that serve as the catalyst for technical innovations. To disseminate the most recent advances in this challenging yet exciting field, Advanced Video Communications over Wireless Networks provides an in-depth look at the fundamentals, recent technical achievements, challenges, and emerging trends in mobile and wireless video communications. The editors have carefully selected a panel of researchers with expertise in diverse aspects of wireless video communication to cover a wide spectrum of topics, including the underlying theoretical fundamentals associated with wireless video communications, the transmission schemes tailored to mobile and wireless networks, quality metrics, the architectures of practical systems, as well as some novel directions. They address future directions, including Quality-of-Experience in wireless video communications, video communications over future networks, and 3D video communications. The book presents a collection of tutorials, surveys, and original contributions, providing an up-to-date, accessible reference for further development of research and applications in mobile and wireless video communication systems. The range of coverage and depth of expertise make this book the go-to resource for facing current and future challenges in this field.

The Proceedings of the Fifth IFIP-TC6 International Conference on Mobile and Wireless Communications Networks IGI Global

"This book provides a central source of reference on visual information processing in wireless sensor network environments and its technology, application, and society issues"--

Second International Conference, WiMo 2010, Ankara, Turkey, June 26-28, 2010. Proceedings CRC Press

With the increasing demand of video applications in wireless networks, how to better support video transmission over wireless networks has drawn much attention to the research community. Time-varying and error-prone nature of wireless channel makes video transmission in wireless networks a challenging task to provide the users with satisfactory watching experience. For different video applications, we choose different video coding techniques accordingly. E.g., for Internet video streaming, we choose standardized H.264 video codec; for video transmission in sensor networks or multicast, we choose simple and energy-conserving video coding technique based on compressive sensing. Thus, the challenges for different video transmission applications are different. Therefore, This dissertation tackles video transmission problem in three different applications. First, for dynamic adaptive streaming over HTTP (DASH), we investigate the streaming strategy. Specifically, we focus on the rate adaptation algorithm for streaming scalable video (H.264/SVC) in wireless networks. We model the rate adaptation problem as a Markov Decision Process (MDP), aiming to find an optimal streaming strategy in terms of user-perceived quality of experience (QoE) such as playback interruption, average playback quality and playback smoothness. We then obtain the optimal MDP solution using dynamic programming. However, the optimal solution requires the knowledge of the available bandwidth statistics and has a large number of states, which makes it difficult to obtain the optimal solution in real time. Therefore, we further propose an online algorithm which integrates the learning and planning process. The proposed online algorithm collects bandwidth statistics and makes streaming decisions in real time. A reward parameter has been defined in our proposed streaming strategy, which can be adjusted to make a good trade-off between the average playback quality and playback smoothness. We also use a simple testbed to validate our proposed algorithm. Second, for video transmission in wireless sensor networks, we consider a wireless sensor node monitoring the environment and it is equipped with a compressive-sensing based, single-pixel image camera and other sensors such as temperature and humidity sensors. The wireless node needs to send the data out in a timely and energy efficient way. This transmission control problem is challenging in that we need to jointly consider perceived video quality, quality variation, power consumption and transmission delay requirements, and the wireless channel uncertainty. We address the above issues by first building a rate-distortion model for compressive sensing video. Then we formulate the deterministic and stochastic optimization problems and design the transmission control algorithm which jointly performs rate control, scheduling and power control. Third, we propose a low-complex, scalable video coding architecture based on compressive sensing (SVCCS) for wireless unicast and multicast transmissions ...

Architecture and Design, From VoIP to Wireless John Wiley & Sons

Networking capabilities have been significantly enhanced in recent years. With emerging advancements in technology, wireless communication has increased exponentially. Routing Protocols and Architectural Solutions for Optimal Wireless Networks and Security is a comprehensive resource on the latest technological advancements in designing secure wireless networks and secure transmission of data, voice and video over wireless networks and other innovations. Featuring comprehensive coverage across a range of relevant topics such as network planning, radio resource allocation, and broadband wireless networks, this publication is an ideal reference source for network designers, industries, researchers, educators, and

governments who are involved in designing and implementing security and wireless networks and applications.
Theory, Design, and Deployment CRC Press
This book emphasizes the increasingly important role that Computational Intelligence (CI) methods are playing in solving a myriad of entangled Wireless Sensor Networks (WSN) related problems. The book serves as a guide for surveying several state-of-the-art WSN scenarios in which CI approaches have been employed. The reader finds in this book how CI has contributed to solve a wide range of challenging problems, ranging from balancing the cost and accuracy of heterogeneous sensor deployments to recovering from real-time sensor failures to detecting attacks launched by malicious sensor nodes and enacting CI-based security schemes. Network managers, industry experts, academicians and practitioners alike (mostly in computer engineering, computer science or applied mathematics) benefit from th e spectrum of successful applications reported in this book. Senior undergraduate or graduate students may discover in this book some problems well suited for their own research endeavors.
VBR Video Streaming Over Wireless Networks IGI Global
Real Time Video Streaming had taken a prominent role in recent years and had emerged as state of the art technology in the field of Mobile Communications. The advancements in Universal Mobile Telecommunications Systems (UMTS) networks have made it easier to provide a wide variety of multimedia applications that requires robust bandwidth and stable networks. The method of streaming videos is particularly useful in wireless networks since the mobile devices in those wireless networks have limited resources for data storage. However, there is a growing need to share videos in real time as the use of mobile devices increases; mobile devices can receive real time video streams over wireless mobile networks. These would be useful in video conferencing, mobile TV, and the broadcasting of live events. A lot of research is ongoing in the adaptation of present 3G mobile networks to support real-time video streaming services.
Convergence, DSP, QoS, and Security Cambridge University Press
With the rapid evolution of multimedia communications, engineers and other professionals are generally forced to hoard a plethora of different texts and journals to maintain a solid grasp on essential ideas and techniques in the field. Wireless Multimedia Communications provides researchers and students with a primary reference to help readers take maximum advantage of current systems and uncover opportunities to propose new and novel protocols, applications, and services. Extract the Essentials of System Design, Analysis, Implementation A complete technical reference, the text condenses the essential topics of core wireless multimedia communication technologies, convergence, QoS, and security that apply to everything from networking to communications systems, signal processing, and security. From extensive existing literature, the authors distill the central tenets and primary methods of analysis, design, and implementation, to reflect the latest technologies and architectural concepts. The book addresses emerging challenges to inform the system standardization process and help engineers combat the high error rates and stringent delay constraints that remain a significant challenge to various applications and services. Keep Pace with Detailed Techniques to Optimize Technology The authors identify causes of information loss in point-to-point signal transmission through wireless channels, and then they discuss techniques to minimize that loss. They use examples that illustrate the differences in implementing various systems, ranging from cellular voice telephony to wireless Internet access. Each chapter has been carefully organized with the latest information to serve dual purposes as an easy-to-reference guide for professionals and as a principal text for senior-level university students.
Routing Protocols and Architectural Solutions for Optimal Wireless Networks and Security IGI Global
There is an increased awareness on security everywhere and the use of wireless internet technologies for security and surveillance applications is increasing. The Surveillance applications vary from monitoring super markets to large coast line harbors and so on. The solutions currently available in the market are proprietary, expensive and very hard to deploy. The objective of this project is to overcome this complexity and to come up with a simple and scalable solution to stream video wirelessly using open source software and easily available devices. The recent trend in multimedia computing applications requires increasing bandwidth and computing power. As an integral part of multimedia computing, the efficiency of digital video processing is a very compelling issue. This research focuses on an efficient way to wirelessly stream video from any Standard video4linux compatible USB Web Camera which can be scaled to high-end surveillance cameras as well to a mobile user. All communication between the mobile user and the web camera will be performed using a web browser. A real-time video stream will be efficiently encoded and transmitted from the web camera over an 802.11 WLAN and displayed in a mobile user's browser. In this project the end users will be able to remotely view the live video stream using any standard web browser running on any device with a wired or wireless interface. We have proposed a novel video encoding scheme to efficiently transmit video frames to a remote browser. Based on link quality and signal strength, the web camera will adaptively modify the number of frames transmitted per second and the quality of a transmitted frame to reduce packet loss and efficiently saving bandwidth and present the end user with a glitch free video. Based on the available bit rate information and the pre-determined data model the rate-adaptation module uses 'Newton Raphson' method to determine the encoding parameters. The research also includes understanding of various video compression techniques and Real time video streaming methods. Understanding of some open source libraries such as FFmpeg, MPEG4IP and Live555 are also a part of the research.
Multimedia over IP and Wireless Networks Springer
The constant advancements of wireless technologies have influenced modern business practices as well as social interaction. As a result, the continuing study of communications and networking is important to better understand existing modes of information transfer, as well as developing and managing new methods. Advancements and Innovations in Wireless Communications and Network Technologies is a collection of research and case studies which tackle the issues, advancements and techniques on wireless communications and network technologies. This book offers expansive knowledge and different perspectives useful for researchers and students alike.
Advanced Video Communications over Wireless Networks Elsevier
Publisher's Note: Products purchased from Third Party sellers are not guaranteed by the publisher for quality, authenticity, or access to any online entitlements included with the product. State-of-the-art wireless video standards, techniques, and best practices This fully illustrated guide teaches the latest methods for effectively delivering and consuming high-quality mobile Internet video content on cross-platform personal devices. Video Over Wireless features clear and concise explanations of next-generation technologies, including over-the-top TV, wireless broadband, and video streaming and aggregation. Experienced

educator and author Benny Bing offers expert insights on emerging standards as well as invaluable tips for maximizing coding efficiency and enhancing error resiliency. Video Over Wireless covers: Pay, digital, and online TV Internet-based mobile video Media clouds and cloud support for mobile apps Non-real-time TV delivery 802.11ac and 4G/5G LTE standards Wi-Fi deployments and applications Key issues in wireless transmission Single-antenna design for handheld devices Mobile digital TV and ATSC 2.0/3.0 Video traffic smoothing and multiplexing Apple and Microsoft adaptive bit rate streaming Spatial and temporal error concealment WebM, H.264/MPEG-4 AVC, and H.265/HEVC Video coding enhancements and the impact of different content types

Second to Third Generation and Beyond LAP Lambert Academic Publishing

This book presents revised selected papers from the 17th International Forum on Digital TV and Wireless Multimedia Communication, IFTC 2020, held in Shanghai, China, in December 2020. The 21 full papers and 16 short papers presented in this volume were carefully reviewed and selected from 120 submissions. They were organized in topical sections on image processing; machine learning; quality assessment; telecommunications; video surveillance; and virtual reality.