

Multimedia Computing Communications And Applications Ralf Steinmetz Klara Nahrstedt

Information on integrating soft computing techniques into video surveillance is widely scattered among conference papers, journal articles, and books. Bringing this research together in one source, Handbook on Soft Computing for Video Surveillance illustrates the application of soft computing techniques to different tasks in video surveillance. Worldwide experts in the field present novel solutions to video surveillance problems and discuss future trends. After an introduction to video surveillance systems and soft computing tools, the book gives examples of neural network-based approaches for solving video surveillance tasks and describes summarization techniques for content identification. Covering a broad spectrum of video surveillance topics, the remaining chapters explain how soft computing techniques are used to detect moving objects, track objects, and classify and recognize target objects. The book also explores advanced surveillance systems under development. Incorporating both existing and new ideas, this handbook unifies the basic concepts, theories, algorithms, and applications of soft computing. It demonstrates why and how soft computing methodologies can be used in various video surveillance problems.

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In recent years rapid Internet growth has pushed the development of new multimedia applications in all aspects of life such as entertainment, communication, collaborative work and electronic commerce. Future applications will make use of different technologies like voice, data and video, but in order to make such a wide variety of multimedia applications successful, a number of technology and management issues must be addressed. *Multimedia Networking: Technology, Management and Applications* addresses the dynamic and efficient uses of resources ? a fundamental aspect of multimedia networks. Geared toward professionals, educators and students alike, this exciting new book will detail current research and the future direction of multimedia networking.

The two-volume set LNCS 7732 and 7733 constitutes the thoroughly refereed proceedings of the 19th International Conference on Multimedia Modeling, MMM 2012, held in Huangshan, China, in January 2013. The 30 revised regular papers, 46 special session papers, 20 poster session papers, and 15 demo session papers, and 6 video browser showdown were carefully reviewed and selected from numerous submissions. The two volumes contain papers presented in the topical sections on multimedia annotation I and II, interactive and mobile

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multimedia, classification, recognition and tracking I and II, ranking in search, multimedia representation, multimedia systems, poster papers, special session papers, demo session papers, and video browser showdown.

In the last few years we have observed an explosive growth of multimedia computing, communication and applications. This revolution is transforming the way people live, work, and interact with each other, and is impacting the way business, government services, education, entertainment and healthcare are operating. Yet, several issues related to modeling, specification, analysis and design of distributed multimedia database systems and multimedia information retrieval are still challenging to both researchers and practitioners. Distributed Multimedia Databases: Techniques and Applications points out these challenges and provides valuable suggestions toward the necessary solutions, by focusing on multimedia database techniques.

Prentice Hall????

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Database Semantics: Semantic Issues in Multimedia Systems reflects the state of the art of emerging research on the meaning of multimedia information, as presented during IFIP's Eighth Data Semantics Working Conference (DS-8), organized by its Working Group 2.6 on Databases, and held at Rotorua, New Zealand, in January 1999. DS-8 was planned as an active forum for researchers and practitioners focusing on those issues that involve the semantics of the information represented, stored, and manipulated by multimedia systems.

Depending on the topic and state of research, issues may be covered either deeply theoretically or quite practically, or even both. These proceedings contain twenty-one papers carefully selected by an International Programme Committee and organized in six thematic areas: Video Data Modelling and Use; Image Databases; Applications of Multimedia Systems; Multimedia Modeling in General; Multimedia Information Retrieval; Semantics and Metadata. For almost every area, important topics and issues include: data modeling and query languages for media such as audio, video, and images; methodological aspects of multimedia database design; intelligent multimedia information retrieval; knowledge

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discovery and data mining in multimedia information; multimedia user interfaces. Three visionary keynote addresses, by famous experts Ramesh Jain, Hermann Maurer and Masao Sakauchi, set the stage for discussion and future directions for the field. The collection of papers that resulted now offers a glimpse of the excitement and enthusiasm from DS-8. Database Semantics: Semantic Issues in Multimedia Systems is suitable as a secondary text for a graduate-level course on database systems, multimedia systems, or information retrieval systems and as a reference for practitioners and researchers in industry.

Multimedia Computing provides a thorough overview of multimedia for system designers, system planners, and management decision-makers, covering hot topics such as information design, systems of representation, and recent advances in multimedia technology. The book illustrates a full spectrum of applications, discusses the tools used to produce them, and addresses the major technical issues involved, all documented with examples from the authors' direct experience.

Multimedia computing has emerged in the last few years as a major area of research. Multimedia computer systems have opened a wide range of applications by combining a variety of information sources, such as voice, graphics, animation, images, audio, and full-motion video. Looking at the big

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picture, multimedia can be viewed as the merging of three industries: the computer, communications, and broadcasting industries. Research and development efforts in multimedia computing can be divided into two areas. As the first area of research, much effort has been centered on the stand-alone multimedia workstation and associated software systems and tools, such as music composition, computer-aided education and training, and interactive video. However, the combination of multimedia computing with distributed systems offers even greater potential. New applications based on distributed multimedia systems include multimedia information systems, collaborative and videoconferencing systems, on-demand multimedia services, and distance learning. Multimedia Tools and Applications is one of two volumes published by Kluwer, both of which provide a broad introduction to this fast moving area. This book covers selected tools applied in multimedia systems and key multimedia applications. Topics presented include multimedia application development techniques, techniques for content-based manipulation of image databases, techniques for selection and dissemination of digital video, and tools for digital video segmentation. Selected key applications described in the book include multimedia news services, multimedia courseware and training, interactive television systems, digital video libraries, multimedia messaging systems, and

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interactive multimedia publishing systems. The second book, *Multimedia Systems and Techniques*, covers fundamental concepts and techniques used in multimedia systems. The topics include multimedia objects and related models, multimedia compression techniques and standards, multimedia interfaces, multimedia storage techniques, multimedia communication and networking, multimedia synchronization techniques, multimedia information systems, scheduling in multimedia systems, and video indexing and retrieval techniques. *Multimedia Tools and Applications*, along with its companion volume, is intended for anyone involved in multimedia system design and applications and can be used as a textbook for advanced courses on multimedia.

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

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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. [Administration (référence électronique) ; informatique].

This book highlights cutting-edge research on various aspects of human–computer interaction (HCI). It includes selected research papers presented at the Third International Conference on Computing, Communication and Signal Processing (ICASP 2018), organized by Dr. Babasaheb Ambedkar Technological University in Lonere-Raigad, India on January 26–27, 2018. It covers pioneering topics in the field of computer, electrical, and electronics engineering, e.g. signal and image processing, RF and microwave engineering, and emerging technologies such as IoT, cloud computing, HCI, and green computing. As such, the book offers a valuable guide for all scientists, engineers

and research students in the areas of engineering and technology.

This book constitutes the refereed papers of the International Conference on Intelligent Interactive Assistance and Mobile Multimedia Computing, IMC 2009, which was held in Rostock-Warnemünde, Germany, in November 2009. The 26 revised full papers presented together with 5 short papers and 3 invited talks were carefully reviewed and selected from 50 submissions. The papers are organized in topical sections on Innovative User Interfaces, Assistive Systems, Mobile Communication, Context Awareness, Semantics, System Development, Intelligence, and Security and Privacy.

This book contains four review articles in the area of scalable computing. Two of the articles discuss methods and tools for the parallel solution of irregular problems, which have been satisfactorily worked out in heterogeneous systems. One surveys the technology and applications of multimedia server clusters, which are playing an increasing role in the current networked environment. An additional article discusses SilkRoad, which adds distributed shared memory capabilities to the Cilk parallel programming system. Once again, the book represents a new set of steps forward in parallel systems. Graduate students, academics and researchers in supercomputing and computer engineering. There has long been a chasm between researchers and practitioners in a field

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that requires making good choices from a wide range of disciplines. This book, with its extensive references, closes that gap. -Dan Swinehart, Principal Scientist, Xerox Palo Alto Research Center The first comprehensive survey of all the layers of compressing, storing, transporting, and indexing multimedia content. The selection of papers covers both the intellectual history of the field as well as the state of the art. I look forward to using the book in courses I teach. -Henning Schulzrinne, Associate Professor, Columbia University Here are seminal papers from a group of the top researchers in the field, who help set the tone for future inventions and discoveries. The editors provide overviews and suggest the best sources for additional study, to bring us up to date, across the board, in this rapidly developing area. I know of no other place where you can find so much important information about multimedia information, systems, and networking. -Edward A. Fox, Professor, Virginia Polytechnic University

Readings in Multimedia Computing and Networking captures the broad areas of research and developments in this burgeoning field, distills the key findings, and makes them accessible to professionals, researchers, and students alike. For the first time, the most influential and innovative papers on these topics are presented in a cohesive form, giving shape to the diverse area of multimedia computing. The seminal moments are recorded by a dozen visionaries in the field

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and each contributing editor provides a context for their area of research by way of a thoughtful, focused chapter introduction. The volume editors, Kevin Jeffay and HongJiang Zhang, offer further incisive interpretations of past and present developments in this area, including those within media and content processing, operating systems, and networking support for multimedia. This book will provide you with a sound understanding of the theoretical and practical issues at work in the field's continuing evolution. Features Offers an in-depth look at the technical challenges in multimedia and provides real and potential solutions that promise to expand the role of multimedia in business, entertainment, and education.

Examines in Part One issues at the heart of multimedia processes: the means by which multimedia data are coded, compressed, indexed, retrieved, and otherwise manipulated. Examines in Part Two the accommodation of these processes by storage systems, operating systems, network protocols, and applications. Written by leading researchers, the introductions give shape to a field that is continually defining itself and place the key research findings in context to those who need to understand the state-of-the art developments.

Multimedia computing (MMC) is becoming an increasingly popular technology. The widespread use of personal computers, together with significant scientific and economic breakthroughs in multimedia technology have begun to make

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multimedia a practical paradigm of end user computing, from the interactive text and graphics model that has developed since the 1950s into one that is more compatible with the digital electronic world of the next century. Although the field of multimedia computing is more than 30 years old, the rapidly changing personal computing industry has become obsessed with a set of technologies, products and practices that falls under the rubric of multimedia computing. As the industry continues to race toward the 21st century, it is becoming more and more difficult for people who are interested, but not directly involved in the development of MMC to identify and understand the important and key issues that underlie this topic. Multimedia Computing: Preparing for the 21st Century addresses the modern environment of MMC by providing you with a contemporary and extensive source book for issues surrounding MMC today and trends and issues related to the next generation of end user computing utilizing the technologies of multimedia.

Multimedia computing has emerged as a major area of research. Coupled with high-speed networks, multimedia computer systems have opened a spectrum of new applications by combining a variety of information sources, such as voice, graphics, animation, images, audio, and video. Handbook on Multimedia Computing provides a comprehensive resource on advanced topics in this field,

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considered here as the integration of four industries: computer, communication, broadcasting/entertainment, and consumer electronics. This indispensable reference compiles contributions from 80 academic and industry leaders, examining all the major subsets of multimedia activity. Four parts divide the text: Basic Concepts and Standards introduces basic multimedia terminology, taxonomy, and concepts, including multimedia objects, user interfaces, and standards Multimedia Retrieval and Processing Techniques addresses various aspects of audio, image, and video retrieval; indexing; and processing techniques and systems Multimedia Systems and Techniques covers critical multimedia issues, such as multimedia synchronization, operating systems for multimedia, multimedia databases, storage organizations, and processor architectures Multimedia Communications and Networking discusses networking issues, such as quality of service, resource management, and video transport An indispensable reference, Handbook on Multimedia Computing covers every aspect of multimedia applications and technology. It gives you the tools you need to understand and work in this fast-paced, continuously changing field. "The topic of multimedia is speedily becoming an essential in computer science and engineering prospectuses, exclusively now that multimedia touches most facets of these fields. Multimedia was originally seen as an upright application

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area; that is, a niche application with approaches that belong only to itself. However, like pervasive computing, multimedia is now principally a parallel application area and forms an imperative component of the study of computer graphics, image processing, databases, real-time systems, operating systems, information retrieval, computer networks, computer vision, and so on. Multimedia is no longer just a toy but forms part of the technological environment in which we work and think. This book fills the need for a College & university-level text that examines a good deal of the central outline computer science sees as belonging to this subject area. Multimedia has become allied with a certain set of issues in computer science and engineering, and we address those here. The book is not an introduction to simple design issues—it serves a more progressive audience than that. On the other hand, it is not a reference work — it is more a traditional textbook. While we inevitably discuss multimedia tools, we would like to give a sense of the underlying ideologies in the tasks those tools carry out. Students who undertake and succeed in a course based on this text can be said to really understand fundamental matters in regard to this material; hence the title of the text. In conjunction with this text, a fullfledged course should also allow students to make use of this knowledge to carry out interesting or even wonderful practical projects in multimedia, interactive projects that engage and sometimes amuse

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and, perhaps, even teach these same concepts. The book *Multimedia & Computing* comprehends five chapters for skill development course of B.A/B.Sc/BCA Semester 5th according to the syllabus of University of Jammu, which inculcates theoretical & practical portions."

This book addresses the main subject areas associated with multimedia communications (applications, networks, protocols, and standards) at a level that enables the reader to develop an in-depth understanding of the technical issues associated with this rapidly evolving subject. It is an updated approach to the author's *Data Communications, Computer Networks and Open Systems*, Fourth Edition, set in the context of the increasingly important area of multimedia. The book identifies the different types of multimedia applications, quantifies their communication requirements, and describes the operation and protocols of the different kinds of networks that are used to support them. These networks include LANs, the Internet and World Wide Web, and home-entertainment networks such as cable and satellite. It also includes coverage of the main compression algorithms used with text, images, speech, audio, and video. This book is suitable for programmers interested in learning the integral multimedia aspects of networked communications.

The rapid advancement of digital multimedia technologies has not only

revolutionized the production and distribution of audiovisual content, but also created the need to efficiently analyze TV programs to enable applications for content managers and consumers. Leaving no stone unturned, TV Content Analysis: Techniques and Applications provides a de

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Computing is ubiquitous and if you think otherwise, that in itself might be the best evidence that it is so. Computers are omnipresent in modern life and the multimedia computing environment of today is becoming more and more seamless. Bringing together contributions from dozens of leading experts, Ubiquitous Multimedia Computing educates readers on Ubi-Media Computing on three levels: infrastructures, where fundamental technologies are being developed; middleware, where the integration of technologies and software systems continues to be defined; and applications, where its concepts are evolving into real-world products and processes. In presenting a wealth of new directions and new technology that is changing the way we communicate, learn, play, and live day by day, this book – Examines various architectures for

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delivering multimedia content including streaming devices , wireless networks, and various hybrids Looks at rapidly developing sensor technology including wearable computers Demonstrates the use of advanced HCI devices that allow the simplest body gestures to govern increasingly complex tasks Introduces newsputers that take the use of embedded image information in a host of practical directions Looks at how ubiquitous computing can eliminate traffic congestion and improve the efficiency and quality of medical care Looks at how computing is personalizing learning environments and revolutionizing our approach to the three R's. While these pages serve as a timely reference for researchers working in all areas of product development and human computer interaction, they also provide engineers, doctors, and many other professionals, as well as educators and graduate students with a view that reveals the otherwise invisible seams of this age of ubi-media computing.

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Multimedia computing is a logical next step by which computing technology will become ever more useful and ubiquitous in our everyday lives. From the perspective of technical challenges, multimedia affects nearly every aspect of computer hardware and software. The long-heralded marriage of computing, communications, and information services is now being consummated, and is manifesting itself in literally dozens of new alliances between companies ranging from semiconductors to cable TV, from newspapers and telephone companies to computer hardware and software.

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

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future multimedia communication systems, also showing experimental results from systems and applications.

"This set addresses a range of e-collaboration topics through advanced research chapters authored by an international partnership of field experts"--Provided by publisher.

The fields of computer vision and image processing are constantly evolving as new research and applications in these areas emerge. Staying abreast of the most up-to-date developments in this field is necessary in order to promote further research and apply these developments in real-world settings. Computer Vision: Concepts, Methodologies, Tools, and Applications is an innovative reference source for the latest academic material on development of computers for gaining understanding about videos and digital images. Highlighting a range of topics, such as computational models, machine learning, and image processing, this multi-volume book is ideally designed for academicians, technology professionals, students, and researchers interested in uncovering the latest innovations in the field.

"This book serves as a vital resource for practitioners to learn about the latest research and methodology within the field of wireless technology, covering important aspects of emerging technologies in the heterogeneous next generation network environment with a focus on wireless communications and their quality"--Provided by publisher.

An uncoded multimedia transmission (UMT) system is one that skips quantization and

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entropy coding in compression and all subsequent binary operations, including channel coding and bit-to-symbol mapping of modulation. By directly transmitting non-binary symbols with amplitude modulation, the uncoded system avoids the annoying cliff effect observed in the coded transmission system. This advantage makes uncoded transmission more suited to both unicast in varying channel conditions and multicast to heterogeneous users. Particularly, in the first part of *Uncoded Multimedia Transmission*, we consider how to improve the efficiency of uncoded transmission and make it on par with coded transmission. We then address issues and challenges regarding how to better utilize temporal and spatial correlation of images and video in the uncoded transmission, to achieve the optimal transmission performance. Next, we investigate the resource allocation problem for uncoded transmission, including subchannel, bandwidth and power allocation. By properly allocating these resources, uncoded transmission can achieve higher efficiency and more robust performance. Subsequently, we consider the image and video delivery in MIMO broadcasting networks with diverse channel quality and varying numbers of antennas across receivers. Finally, we investigate the cases where uncoded transmission can be used in conjunction with digital transmission for a balanced efficiency and adaptation capability. This book is the very first monograph in the general area of uncoded multimedia transmission written in a self-contained format. It addresses both the fundamentals and the applications of uncoded transmission. It gives a systematic introduction to the

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fundamental theory and concepts in this field, and at the same time, also presents specific applications that reveal the great potential and impacts for the technologies generated from the research in this field. By concentrating several important studies and developments currently taking place in the field of uncoded transmission in a single source, this book can reduce the time and cost required to learn and improve skills and knowledge in the field. The authors have been actively working in this field for years, and this book is the final essence of their years of long research in this field. The book may be used as a collection of research notes for researchers in this field, a reference book for practitioners or engineers, as well as a textbook for a graduate advanced seminar in this field or any related fields. The references collected in this book may be used as further reading lists or references for the readers.

This book presents a summary of the multimodal analysis of user-generated multimedia content (UGC). Several multimedia systems and their proposed frameworks are also discussed. First, improved tag recommendation and ranking systems for social media photos, leveraging both content and contextual information, are presented. Next, we discuss the challenges in determining semantics and sentics information from UGC to obtain multimedia summaries. Subsequently, we present a personalized music video generation system for outdoor user-generated videos. Finally, we discuss approaches for multimodal lecture video segmentation techniques. This book also explores the extension of these multimedia system with the use of heterogeneous continuous

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streams.

This book constitutes the refereed proceedings of the 19th Iberoamerican Congress on Pattern Recognition, CIARP 2014, held in Puerto Vallarta, Jalisco, Mexico, in November 2014. The 115 papers presented were carefully reviewed and selected from 160 submissions. The papers are organized in topical sections on image coding, processing and analysis; segmentation, analysis of shape and texture; analysis of signal, speech and language; document processing and recognition; feature extraction, clustering and classification; pattern recognition and machine learning; neural networks for pattern recognition; computer vision and robot vision; video segmentation and tracking.

The last few years have seen an explosive growth in multimedia computing, communications and applications. This revolution is transforming the way people live, work, and interact with one another, and is impacting the way businesses, government services, education, entertainment, and health care are operating. It is safe to say that the multimedia revolution is underway. Yet, several issues related to modeling, specification, analysis and design of distributed multimedia systems and applications are still challenging both researchers and practitioners. This book addresses fundamental design issues and research topics, related to multimedia systems, and provides a comprehensive study of the issues. The topics covered include: distributed multimedia databases and computing; multiparadigmatic information retrieval; modeling and analysis of distributed multimedia systems; OS support for distributed multimedia systems; multimedia communications and networking; multimedia digital libraries and mail systems; multimedia human-computer interaction; multimedia applications for CSCW, distant education, electronic commerce teleconferencing, telemedicine; visual and

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multidimensional languages for multimedia applications; multimedia workflows; multimedia stream synchronization. In addition, a number of tutorial and overview articles are included so that the volume strikes a balance between introductory tutorials and advanced topics.

Contents: Advances in Multimedia Information Access (S K Chang) Fluid-Flow Model for Variable-Bit-Rate Video in ATM Networks (N E Rikli) A Network Architecture to Support Policing and Scheduling of Tolerant Real-Time and Best-Effort Applications (M S Boykin & T Znati) An Architecture for the Structured Analysis and Design of Participator Dependent Multimedia Presentations (T K Shih et al.) Advance Reservation System in VOD Services (K H Lee & Y T Chen) Routing with Quality of Service Constraints (M Nour et al.) SCM — A Multimedia Conference System (J G P Filho et al.) and other papers Readership: Computer scientists, and engineers and students in computer science. Keywords:

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available at <http://www.ScholarlyEditions.com/>.

The world is inherently complex and multimedia in nature. The development of computer systems to tackle real-world problems is an extremely difficult task. As computers capable of manipulating multimedia information are becoming more powerful and commonplace, larger and more complex systems are increasingly being built. To fully comprehend the complexity of such undertakings, proper modeling of multimedia information and systems must be carried out. A model provides a high-level abstraction of the system in which the implementation is based upon. It permits the desirable properties of the system to be extracted and analyzed and also provides a uniform framework for integration between different systems, and for interactions between the system and human users. This volume is devoted to the discussion of effective modeling of multimedia information and systems for a wide range of applications. It aims to provide common modeling frameworks for the integration of the diverse subjects in the field of multimedia information.

Humans are the best functioning example of multimedia communication and computing - that is, we understand information and experiences through the unified perspective offered by our five senses. This innovative textbook presents emerging techniques in multimedia computing from an experiential perspective in which each medium - audio, images, text, and so on - is a strong component of the complete, integrated exchange of information or experience. The authors' goal is to present current techniques in computing and communication that will lead to the development of a unified and holistic approach to computing using heterogeneous data sources. Gerald Friedland and Ramesh Jain introduce the fundamentals of multimedia computing, describing the properties of perceptually encoded information, presenting common

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algorithms and concepts for handling it, and outlining the typical requirements for emerging applications that use multifarious information sources. Designed for advanced undergraduate and beginning graduate courses, the book will also serve as an introduction for engineers and researchers interested in understanding the elements of multimedia and their role in building specific applications.

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There has been an explosive growth in multimedia computing, communication and applications. This title summarizes recent research topics, focusing on intelligent content-based information retrieval and virtual world, quality-of-services of multimedia data and intelligent agents.

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