

## <<多媒体通信系统>>

### 图书基本信息

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## 前言

The past years have seen an explosion in the use of digital media. Industry is making significant investments to deliver digital audio, image and video information to consumers and customers. A new infrastructure of digital audio, image and video recorders and players; online services and electronic commerce is rapidly being deployed. At the same time, major corporations are converting their audio, image and video archives to an electronic form. Digital media offer several distinct advantages over analog media. The quality of digital audio, image and video signals is higher than that of their analog counterparts. Editing is easy because one can access the exact discrete locations that need to be changed. Copying is simple with no loss of fidelity. A copy of digital media is identical to the original. Digital audio, image and video are easily transmitted across networked information systems. These advantages have opened up many new possibilities. Multimedia consists of Multimedia data + Set of interactions. Multi-media data is informally considered as the collection of three Ms: multisource, multitype and multiformat data. The interactions among the multimedia components consist of complex relationships without which multimedia would be a simple set of visual, audio and other data. Multimedia and multimedia communication can be globally viewed as a hierarchical system. The multimedia software and applications provide a direct interactive environment for users. When a computer requires information from remote computers or servers, multimedia information must travel through computer networks. Because the amount of information involved in the transmission of video and audio can be substantial, the multimedia information must be compressed before it can be sent through the network in order to reduce the communication delay. Constraints, such as limited delay and jitter, are used to ensure a reasonable video and audio effect at the receiving end. Therefore, communication networks are undergoing constant improvements in order to provide for multimedia communication capabilities.

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### 内容概要

本书首先介绍了多媒体通信的基本元素、数字视频、信号处理的基本方法，各类多媒体通信网络及协议，并重点介绍了多媒体通信的一系列国际标准。

该书的特点是对近年新涌现的新技术、新标准介绍得较全面与细致，但同时又不失基本的原理。

本书可作为通信、计算机、电子等专业的本科或研究生教材，也适合从事相关专业的工程师作为参考使用。

## 作者简介

作者：(美国)拉奥 (K.R.Rao) (美国)博伊科维奇 (Zoran S.Bojkovic) (美国)米洛瓦诺维奇 (Dragorad A.Milovanovic) K. R. Rao, is Professor of Electrical Engineering at the University of Texas at Arlington. He has authored or co-authored several additional leading texts in the field, including Techniques and Standards for Image/Video/Audio Coding, and Packet Video Communications over ATM Networks (Prentice Hall). In 1975, with two other researchers, he introduced the discrete Cosine Transform, one of today's most powerful digital signal processing techniques. He is a Fellow of the IEEE. Zoran S. Bojkovic, received his Ph.D. degree in electrical engineering from the University of Belgrade, Yugoslavia, Faculty of Electrical Engineering. He is currently a professor of electrical engineering at the University of Belgrade. He has taught a wide range of courses in communication networks and signal processing and supervised postgraduate students worldwide. He has published 15 textbooks and more than 300 papers in international books, in peer-reviewed journals and conference proceedings. He is also an active reviewer and a member of the Scientific committee of numerous journals and conferences, and serves as chairman for international conferences, symposiums and workshops. He has conducted workshops/tutorials on multimedia worldwide and participated in many communication, scientific, and industrial projects. He is a member of IEEE Communication Society and EURASIP. Dragorad A. Milovanovic, received the Dipl. Electr. Eng. and Master of Science degree from the University of Belgrade, Yugoslavia Faculty of Engineering. From 1987 to 1991, he was a Research Assistant at the Department of Electrical Engineering, where his research interest includes analysis and design of digital communications systems. He has been working as R&D engineer for DSP software development in digital television industry. Also, he is serving as a consultant for developing standard based and secure solutions for media coding, streaming and distribution. He has participated in numerous scientific projects and published more than 150 papers in international journals and conference proceedings.

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