

Ze-Nian Li · Mark S. Drew · Jiangchuan Liu

Fundamentals of Multimedia

Third Edition

Multimedia is a ubiquitous part of the digital world in which we live and think, touching upon almost all aspects of computer science and engineering.

This comprehensive textbook introduces the *Fundamentals of Multimedia* in an accessible manner, addressing real issues commonly faced in the workplace. Suitable for both advanced undergraduate and graduate students, the essential concepts are explained in a practical way to enable students to apply their existing skills and acquired knowledge to solve problems in multimedia. Fully revised and updated, this new edition now includes coverage of current topics such as 360° video and the video coding standard H.266, new-generation social, mobile and cloud computing for human-centric interactive multimedia, augmented reality and virtual reality, deep learning for multimedia processing, and their attendant technologies.

Topics and Features

- Presents a brief history and overview of the key concepts in multimedia, including important data representations and color science
- Reviews lossless and lossy compression methods and standards for image, video and audio data
- Examines the demands placed by multimedia communications on wired, wireless, and mobile networks
- Discusses the impact of social media and cloud computing on information sharing, and on multimedia content search and retrieval
- Includes study exercises at the end of each chapter
- Provides supplementary resources for both students and instructors at an associated website

This classroom-tested textbook is ideal for upper-level undergraduate and graduate courses on multimedia systems. Practitioners in industry interested in current multimedia technologies will also find the book to be a useful reference.

Drs. Ze-Nian Li, Mark S. Drew, and Jiangchuan Liu are Professors in the School of Computing Science, Simon Fraser University, Vancouver, British Columbia, Canada.