

Borko Furht (Ed.)

Encyclopedia of Multimedia

A-Z

With 565 Figures* and 51 Tables



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Library of Congress Control Number: 2008933697

ISBN: 978-0-387-74724-8

This publication is available also as:
Electronic publication under ISBN: 978-0-387-78414-4 and
Print and electronic bundle under ISBN: 978-0-387-78415-1

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SPIN: 12101603 2109SPi - 5 4 3 2 1 0

Preface

Only a decade ago, multimedia seemed like a brand new research field and an emerging new industry. Today, at the beginning of the new millennium, multimedia has come of age and the multimedia industry has significantly grown. Another aspect of the digital media revolution is the formation of the new media industry comprised of computer, communication, entertainment, and consumer electronic companies.

The *Encyclopedia of Multimedia, 2nd Edition* provides in-depth coverage of the important concepts, issues and technology trends in the field of multimedia technologies, systems, techniques, and applications. It is a comprehensive collection of articles that present perspectives and future trends in the field from hundreds of leading researchers and experts in the field. The articles in the book describe a number of topics in multimedia systems and applications – from multimedia servers, to multimedia databases and multimedia networks and communications, to emerging multimedia applications.

The editor, working with the *Encyclopedia's* Editorial Board and a large number of contributors, surveyed and divided the field of multimedia into specific topics that collectively encompass the foundations, technologies, applications, and emerging elements of this exciting field. The members of the Editorial Board and the contributors are world experts in the field of multimedia from both academia and industry. The *2nd Edition* includes 10 new members of the Editorial Boards, and more than 60 new contributors, who wrote more than 80 new articles. The total number of contributors in *2nd Edition* is over 200, who have written a total of more than 340 articles.

The *2nd Edition* includes articles on new, emerging topics in multimedia, including 3D content-based search and retrieval, 3D television services, interactive virtual humans, large-scale object-based multimedia storage systems, knowledge-based adaptation decision, multimedia personalization, video adaptation, authentication, and stabilization, and many other topics. It also includes articles on emerging standards and services including MPEG-7 and MPEG-21, multimedia metadata standards, and mobile broadcast multicast services. New articles on multimedia applications, such as massively multiuser online games, sports video analysis, person detection, face and facial expression recognition, and object tracking are also part of the *2nd Edition*.

The *Encyclopedia's* intended audience is technically diverse and wide; it includes anyone concerned with multimedia systems and their applications. Specifically, the *Encyclopedia* can serve as a valuable reference for researchers and scientists, system designers, engineers, programmers, and managers who are involved in multimedia system design and their applications.

I would like to thank the members of the Editorial Board for their help in creating this *Encyclopedia*, as well as the authors for their individual contributions. The members of the Editorial Board assisted in selecting the articles, they wrote one or more long and short articles, and they solicited the other contributors. Without the expertise and effort of the contributors, this *Encyclopedia* would never have come to fruition. Special thanks go to Springer's editors and staff, including Jennifer Evans, Susan Lagerstrom-Fife, Jennifer Carlson, and Sharon Palleschi. They deserve my sincere recognition for their support throughout the project.

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