Preface

Technological advances over the last several years have made it possible to construct large image and video libraries comprised of hundreds of terabytes of data. As a consequence, there is a great demand for the capability to provide databases that can effectively support storage, search, retrieval, and transmission of image and video data. The purpose of the Handbook of Video Databases is to provide a comprehensive reference on advanced topics in this field. The Handbook is intended both for researchers and practitioners in the field, and for scientists and engineers involved in the design, development, and applications of video databases. The Handbook can also be used as the textbook for graduate courses in this area.

This Handbook comprises 45 chapters contributed by more than 100 world-recognized experts in the field. The Handbook covers various aspects of video databases, including video modeling and representation, segmentation and summarization, indexing and retrieval, video transmission, design and implementation, and other topics. Section I introduces fundamental concepts and techniques in designing modern video databases. Section II covers concepts and techniques applied for video modeling and representation, while Section III deals with techniques and algorithms for video segmentation and summarization. Section IV describes tools and techniques for designing and interacting with video databases, and Section V discusses audio and video indexing and retrieval techniques. Section VI focuses on video transmission techniques, including video streaming and emerging video compression algorithms. Section VII describes video processing techniques and their relationship to the design and implementation of video databases. Section VIII describes several prototypes and commercial projects in the area of video databases. Finally, Section IX provides a collection of answers from the world-renowned experts in the field to fundamental questions about the state of the art and future research directions in video databases and related topics.

We would like to thank all the authors for their individual contributions of chapters to the Handbook. Without their expertise and effort, this Handbook would never have come to fruition. CRC Press editors and staff also deserve our sincere recognition for their support throughout the project.

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