

Preface

The amount of today's multimedia contents explosively grows due to the popularization and rapid growth of digital mobile devices and social media tools. To efficiently analyze and understand the multimedia content is still a challenging task. Over the past decade, many advanced methods have been proposed in the literature, including a few books on this topic. However, there is no book offering a systematic introduction to multimedia content analysis towards an understanding-oriented approach. Therefore, this book will focus on a novel “understanding” framework for multimedia content interpretation. This book offers a systematic introduction to multimedia content analysis towards an understanding-oriented approach. It integrates the visual understanding and learning models into a unified framework, within which the visual understanding guides the model learning while the learned models improve the visual understanding. More specifically, the book presents multimedia content representations and analysis including feature selection, feature extraction, image tagging, user-oriented tag recommendation, and understanding-oriented multimedia applications. By providing the fundamental technologies and the state-of-the-art methods, this book will be of interest to graduate students and researchers working in the field computer vision and machine learning.

Chapter 1 introduces the background, challenges, and progresses of understanding-oriented multimedia content analysis. Chapters 2 and 3 introduce some works of understanding-oriented data representation. The personalized tag recommendation work is detailed in Chap. 4, followed by understanding-oriented multimedia news services in Chaps. 5 and 6. Chapter 7 concludes the book by summarizing the major points and identifying the future works.

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