

Preface

Recent years have witnessed a growing number of user-centric multimedia applications, especially with the popularity of web 2.0. Examples include Flickr, YouTube, Facebook, Twitter, MySpace, etc. The emerging applications on social web and social networks have produced a new type of multimedia content, termed as “social media” here, as it is created by people using highly accessible and scalable publishing technologies for sharing via the web. With social media technology, images, videos and audios are generally accompanied by rich contextual information, such as tags, categories, title, metadata, comments, and ratings, etc. Massive emerging social media data offer new opportunities for solving some long-standing challenges in multimedia understanding and management, such as the semantic gap issue. These new media also introduce a number of new and challenging research problems and many exciting real-world applications.

This book presents recent advances on several aspects of emerging social media modeling and social media computing research. It is designed for practitioners and for researchers of all levels of expertise, from novice to expert. It targets various groups of people who need information on social media modeling and social media computing. They include:

- People who need a general understanding of social media. They are high-level managers and professional engineers who are interested in emerging social media modeling and computing technologies.
- Software developers who apply social media modeling and computing techniques. It also includes practitioners in related disciplines such as multimedia content management, information retrieval, web search, data mining, and machine learning.
- Researchers and students who are working on social media, multimedia, web search, data mining, and machine learning, and related disciplines, as well as anyone who wants a deep understanding of techniques for social media modeling and computing.

Regarding the contents and organization, this book consists of 12 chapters that present a variety of emerging technologies on social media modeling and comput-

ing. In particular, these book chapters can be summarized in the following three major aspects:

- *Social media content analysis*: The first part of the book is related to the application of multimedia content analysis techniques to the emerging social media data. It includes social image tag analysis (chapter “Quantifying Visual-Representativeness of Social Image Tags using Image Tag Clarity”), social image tag ranking (chapter “Tag-Based Social Image Search: Towards Relevant and Diverse Results”), and tag-based social image search (chapter “Social Image Tag Ranking by Two-View Learning”), social media content analysis by combining multimodal features (chapter “Combining Multimodal Features for Social Media Analysis”), and multi-label social image annotation by exploring group structures (chapter “Multi-label Image Annotation by Structural Grouping Sparsity”).
- *Social media system design and analysis*: The second part of the book is devoted to social media system design and analysis. It includes the design of effective social media mechanism for incentivizing social media contributions (chapter “Mechanism Design for Incentivizing Social Media Contributions”), the design of efficient access control for privacy and security issues in multimedia social networks (chapter “Efficient Access Control in Multimedia Social Networks”), the analysis of users and their online behaviors in social video sharing portals (chapter “Call Me Guru: User Categories and Large-Scale Behavior in YouTube”), and visual analytic tools for social event analysis (chapter “Social Media Visual Analytics for Events”).
- *Social media applications*: The last part of the book is related to the development of emerging social media applications by exploring emerging user-contributed social media data. It includes the application of social media information to music recommendation (chapter “Using Rich Social Media Information for Music Recommendation via Hypergraph Model”), the application of user-contributed Geotag information to automatic image annotation (chapter “Using Geotags to Derive Rich Tagclouds for Image Annotation”), and the application of social media techniques to analyze and improve real-world photobooks (chapter “Social Aspects of Photobooks: Improving Photobook Authoring from Large-scale Multimedia Analysis”).

Each of the above book chapters can be considered as a compact, self-contained mini-book in its own right under its title. They are, however, organized and presented in relation to the basic principles and practice of social media modeling and computing. We also note that this book can be used as advanced materials by graduate students of information technology related subjects, such as computer science, computer engineering, and information systems, either in a classroom or for self-study.

Finally, this book was first initialized during the organization of the first international workshop on social media (WSM2009). It was later developed by soliciting contributions from a number of international experts on social media modeling and computing to present their best knowledge and practice on specific social media related topics. Some chapters of this book were originated from recent studies in in-

ternational conferences and workshops, including the SIGMM international Workshop on Social Media (WSM), and ACM International Conference on Multimedia (ACM Multimedia), and ACM International conference on Web Search and Data Mining (WSDM). As co-editors of this book, we would like to thank all the authors of the book chapters for their great efforts in providing the high quality contents to this book, and our colleagues who helped us during the organization of the WSM workshops and the book editing process.

Singapore
USA
Germany
Singapore
USA
USA

Steven C.H. Hoi
Jiebo Luo
Susanne Boll
Dong Xu
Rong Jin
Irwin King



<http://www.springer.com/978-0-85729-435-7>

Social Media Modeling and Computing

Hoi, S.C.H.; Luo, J.; Boll, S.; Xu, D.; Jin, R.; King, I. (Eds.)

2011, XIII, 286 p., Hardcover

ISBN: 978-0-85729-435-7