Preface

The 19th International Conference on Multimedia Modeling (MMM 2013) was held in Huangshan, China, during January 7–9, 2013, and hosted by the Hefei University of Technology (HFUT) at Hefei, China. MMM is a leading international conference for researchers and industry practitioners to share their new ideas, original research results, and practical development experiences from all multimedia-related areas.

It was a great honor for HFUT to host MMM 2013, one of the most longstanding multimedia conferences, in Huangshan, China. HFUT, located in the capital of Anhui province, is one of the key universities administrated by the Ministry of Education, China. Recently its multimedia-related research has been attracting increasing attention from the local and international multimedia community. The conference venue was the Huangshan International Hotel, located very close to Huangshan, which is well known for its scenery, sunsets, spectacularly shaped granite peaks, Huangshan pine trees, and unique views of the clouds from above. Furthermore, Huangshan is a UNESCO World Heritage Site and one of China’s major tourist destinations. We hope that the choice of venue for MMM 2013 resulted in a memorable experience for all participants.

MMM 2013 featured a comprehensive program including three keynote talks, eight oral presentation sessions, one poster session, one demo session, seven special sessions, and the Video Browser Showdown. The 184 submissions from authors of 20 countries included a large number of high-quality papers in multimedia content analysis, multimedia signal processing and communications, and multimedia applications and services. We thank our 140-member Technical Program Committee who put in considerable effort in both reviewing papers and in providing valuable feedback to the authors. For the main conference, there were 111 submissions, each receiving at least three reviews. After the extensive reviewing process, the Program Chairs decided to accept 30 regular papers (27%) and 20 poster papers (18%). In total, 46 papers were accepted for seven special sessions after 53 were submitted, and 15 submissions were accepted for the demo session from a total of 22 submissions. Six teams competed in the Video Browser Showdown. The authors of accepted papers come from 16 countries. This volume of the conference proceedings contains the abstracts of three invited talks and all the regular, poster, special session, and demo papers, as well as special demo papers of the Video Browser Showdown (VBS). MMM 2013 included the following awards: the Best Paper Award, the Best Student Paper Award, two Best Demo Awards, and the VBS Competition Award, which were all sponsored by KAI Square.

The technical program is an important aspect but only has full impact if complemented by challenging keynotes. We were extremely pleased and grateful to have had three exceptional keynote speakers, Xian-Sheng Hua, Kiyoharu
Aizawa, and Ralf Steinmetz, accept our invitation and present interesting ideas and insights at MMM 2013.

We are also heavily indebted to many individuals for their significant contributions. We thank the MMM Steering Committee for their invaluable input and guidance on crucial decisions. We wish to acknowledge and express our deepest appreciation to the Honorary Chairs, Tat-Seng Chua, Phoebe Chen, and Wen Gao, the Local Organizing Chairs, Benoit Huet, Fei Wu, and Huanning Feng, the Special Session Chairs, Richang Hong and Changsheng Xu, the Demo Chairs, Ke Lu and Yi Yang, the VBS Chairs, Klaus Schöffmann and Werner Bailer, the Publicity Chairs, Kiyoharu Aizawa, Houqiang Li, Qingming Huang, Winston Hsu, and Xuelong Li, the Publication Chairs, Shuqiang Jiang and Cathal Gurrin, the Sponsorship Chairs, Yan-Tao Zheng, Shi-Yong Neo, Zhiwei Gu, and Qiong Liu, and last but not least the Webmaster, Xiaobin Yang. Without their efforts and enthusiasm, MMM 2013 would not have become a reality. Moreover, we want to thank our sponsors: Hefei University of Technology, National Natural Foundation of China, Beijing Ricoh Research Center, Microsoft Research Asia, FX Palo Alto Laboratory, and KAI Square Pte Ltd. We wish to thank all committee members, reviewers, session chairs, student volunteers, and supporters. Their contributions are much appreciated. Finally, we would also like to thank our local support team, Han Zhao, Xiaoping Liu, Yuanfa Zhu, Xiang Sun, Jianguo Jiang, Xuezhi Yang, Na Zhao, Yuetong Chen, Changzhi Luo, for their support and contribution to the conference organization.

January 2013

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Keynote 1:
Perspective on Adaptive Video-Streaming

Prof. Dr.-Ing. Ralf Steinmetz
Department of Electrical Engineering and Information Technology
and Department of Computer Science in Technische Universität Darmstadt, Germany

Abstract. This talk covers perspectives on adaptive video streaming and how such techniques are essential for systems with heterogeneous devices. Adaptation is possible using flexible video coding techniques, such as the H.264 Scalable VIdeo Coding (SVC). In this context, it is important to consider various aspects of the video coding system (interdependencies, quality layers, QoE, etc) as well of the delivery architectures (client server, P2P, connectivity, etc). The first part relates to quality adaptation algorithms that match the video quality with available local and system resources without any a-priori knowledge about those resources. Subsequently in the second part, mechanisms that use Quality of Experience (QoE) metrics to enhance its performance for the users will be shown. The decision of which SVC quality to choose is usually driven by QoS metrics, such as throughput. Instead, it will be presented how objective QoE of the different SVC qualities can be used in the decision process. The talk concludes by presenting the major further research activities in this research area.
Keynote 2:
Multimedia FoodLog: Easiest Way to Capture and Archive What We Eat

Prof. Kiyoharu Aizawa
Department of Information and Communication Engineering
and Interfaculty Initiative of Information Studies of the University of Tokyo

Abstract. Eating is one of the most fundamental aspects of one’s daily life, but at the same time, it is one of the most difficult aspects to manage by oneself. Recording what we eat is vital for our health care. We have been investigating the “FoodLog” multimedia food-recording tool, whereby users upload photos of their meals and a food diary is constructed by using image processing functions such as food image detection, dietary balance estimation, calorie estimation etc. Foodlog is available in http://www.foodlog.jp, and to the best of our knowledge, it is currently the only publicly available multimedia food-recording application that makes use of image processing for dietary assessment. In addition to the PC-based interface, we have developed a few smartphone applications which makes easier to make detailed recording with the assist of image processing. In the talk, I would like to outline the current status of our FoodLog, and present various subjects on multimedia processing of foodlog.
Abstract. In recent years, remarkable progress has been made towards large-scale content-aware image search. However, there is still a long way to go to bridge the two "gaps": semantic gap and intention gap. Large-scale data brings us both challenges and opportunities to tackle these difficulties. In this presentation, we will review existing image search schemes and then focus on large-scale content-aware image search. We discuss the connections and differences among different large-scale CBIR techniques such as trees, clustering, hashing, graph and BoW, and then introduce a few exemplary scalable approaches including graph based search, color map based search, line sketch based search, and concept map based search. For each exemplary approach, we will discuss how to make it work for billions of images. The limitations will then be analyzed for these techniques, followed by introducing indexing and search schemes based on web-scale image content understanding. Connections between search and content understanding will be also discussed. And last we will talk about challenges and opportunities along this direction.
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