

Emerging Challenges and Opportunities in Exploiting Mobile Photos and Videos

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ABSTRACT

The prevalence of mobile cameras and social media sharing services have drastically increased the volume of photos and videos, which pose a new challenge for developing efficient retrieval, mining, and visualization approaches. Meanwhile, the mobile devices have almost been the must in daily life for capturing important moments, browsing the photos and videos shared by the families and friends, or working as Q&A devices for understanding the objects of interests (e.g., landmarks, products, video programs, or restaurant reviews, etc.) by taking a snapshot and searching the related information. In this talk, we will first look into the emerging opportunities and promising solutions to manipulate such large-scale data through mobile devices. We will point the properties that we can leverage from mobile devices and go through the challenges (e.g., small mobile screen size, low bandwidth, limited storage and computing power), which further pose new constraints in photo/video content analysis and retrieval in the emerging mobile platform. Meanwhile, instead of treating the user-generated photos/videos as independent workloads, we will demonstrate the exciting applications in mobile recommendation and human activity mining as, in a holistic manner, analyzing such sheer amount of photos and videos, which are generally to record people activities and those the most memorable for the users. We will also review emerging industrial and academic research problems and the pilot experiments over million-scale photo/video collections.

Categories and Subject Descriptors: H.3.1 Content Analysis and Indexing, H.5.2 User Interfaces, H.2.8 Database Applications [Data Mining]

Keywords: Social Media, Mobile Visual Retrieval, Hash Learning, Location-Based Service

Bio

Dr. Winston Hsu is an active researcher dedicated to novel algorithms and systems for ultra-large-scale image/video retrieval, social media mining/recommendation, multimedia analytics, and mobile and cloud-based multimedia applications. He is keen to realizing advanced researches towards business deliverables. He has been recognized with technical awards and best paper awards in multimedia research community. He delivered keynote speeches and lectured several state-of-the-art tutorials in top conferences. He is in the technical committee for top conferences (ACM Multimedia, SIGIR, and WWW) and the organizing committee for ACM Multimedia and ICME. He is on the Editorial Board for IEEE Multimedia Magazine and Journal of Multimedia (JMM). He is an Associate Professor in the Department of Computer Science and Information Engineering, NTU and the founder of MiRA (Multimedia indexing, Retrieval, and Analysis) Research Group in Communication and Multimedia Lab (CMLab). He received his Ph.D. (2007) degree from Columbia University, New York. Before that, he worked for years as a founding engineer in the multimedia software company, CyberLink Corp., where experiencing Engineer, Project Leader, and R&D Manager. He is recently awarded 2011 Ta-You Wu Memorial Award, a national and prestigious recognition for young researchers.