

WISMM'14 – First ACM International Workshop on Internet-Scale Multimedia Management

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ABSTRACT

Advanced technologies in consumer electronic products have enabled individual users to record, transmit and receive images and videos with mobile devices. Every day people create and consume massive amounts of multimedia information and data by engaging with various mobile Internet services. With a wide variety of multimedia information and data around us being aggregated over time, the Internet is getting increasingly information-centric. We are experiencing an age of increasing demands on how we host various people's online engagements and how to augment people's lives in the physical world with more personalized smart services. This workshop addresses a focused but broad research theme with an emphasis on how to manage and derive value from multimedia data in the social Internet landscape to facilitate the connections between users' physical world and their online activities.

Categories and Subject Descriptors

H.3.5 [Information Storage and Retrieval]: Online Information Services

Keywords

Location-based multimedia systems; geographic sensor information; social interactions; geo-social distribution; location recommendation; geographic popularity; multimedia content delivery; multimedia big data

1. BACKGROUND

We are witnessing unprecedented growth of multimedia information and data on the web, fostered by multimedia technology innovations and user engagement. One of the characteristics of multimedia information and data is that their scale is massive and requires a technological infrastructure that can accommodate rapid processing, large-scale storage, and flexible analysis of multi-structured data [1, 2, 3, 5]. For example, users like to search the web for goods

to purchase or places to visit. Meanwhile, business owners may try to attract more customers with the help of advertising on various websites (*e.g.*, video advertising on YouTube, or banners on the online urban city guide Yelp). Clearly it is increasingly important to connect users' needs and businesses' advertisements via multimedia data and analytics, enabling users to easily find their desired goods or locations and enabling online information to reach the right clientele.

This workshop serves to engage researchers and practitioners who are interested in the scientific connection between the effective collection, analysis and use of multimedia data related to the user-centric physical world and their online activities. It is concerned with (i) data analytics between mobile users and their online behavior in the multimedia domain, (ii) bring together researchers, developers data engineers and scientists who work on different topics in the area of Internet-scale multimedia management, (iii) open a venue for encouraging interdisciplinary discussions in all relevant aspects of peoples' lives in the physical world, their online presence analytics, and a cohesive set of social multimedia data, (iv) collect novel methodologies adapted for the emerging research of Internet-scale multimedia management involving user physical actions and activities, user-centric multimedia content and data, and (v) formulate current and future research and technologies.

Topics of interest for research manuscripts may touch on several issues such as the following: (i) How can multimedia techniques provide user platforms with appealing aesthetics that elicit appropriate emotions to increase the success of commercial advertisement online activities?, (ii) How can multimedia communication technologies keep users engaged with the Internet on-the-go?, (iii) How can social media analytics techniques understand people's sentiments and characterize users' online activities?, and (iv) How can media management techniques accommodate large-scale databases and real-time processing for demand-aware user activities over the Internet?

2. MOTIVATION

This workshop has been motivated by our initial investigation of a piece of work on Foursquare data [4], *e.g.*, vast volumes of check-ins, venue photos, and venue comments are aggregated over time, which are potentially valuable multimedia sources about user physical activities and online sharing behavior in the era of big data. Driven by some questions we found in this study, we proposed this workshop.

The goal of the workshop is to provide a forum where the above and other related questions may be discussed in

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the wider context of Internet-scale multimedia management. As such, the aim of the workshop is also on promoting the methodological development of technologies, systems and applications of Internet-scale multimedia data analytics and management to satisfy the demands of various user-relevant value extractions of Internet multimedia and enabling users' diverse data managements [3, 5]. We hope that the event will provide a channel for Internet-scale multimedia management research to be exchanged to address multimedia technologies in terms of dealing with various user physical lives and online activities.

3. TOPICS OF INTEREST

This workshop is interested in research papers and posters with the goal of shaping and influencing the area of *Internet-scale multimedia management*, which is the science and technology relating to the collection, visualisation, analysis and presentation of multimedia data over the Internet to facilitate connections between users' physical world and online activities. This workshop includes, but is not limited to, the following topics:

- Massive user web behavior analytics for Internet multimedia management
- Location-aware multimedia analytics for online activities and management
- Real-world case studies of physical activity patterns from multimedia data analytics
- Mobile multimedia data traffic modeling and forecasting
- Visualization and interaction for massive music, image, and video data analytics
- Internet-scale multimedia content indexing and mining
- Applied mathematics and statistics of geographic data analytics for intelligent services
- Multimedia pattern recognition from integrated social events
- Fusing multiple sources, synchronizing metadata and integrating existing data sources and services into new demand-centric models (*e.g.*, advertising, security)
- Machine learning and natural language processing in user-centric multimedia big data
- Multimedia systems and applications targeting mobile users

4. FORMAT OF THE WORKSHOP

The workshop has been designed for a full day program on 7 November 2014. The call for papers attracted 18 full submissions and 6 short submissions from Italy, Singapore, Austria, Japan, China, Germany, France, Canada, United States, and Mexico. Each full paper was reviewed by at least three reviewers. From these submissions, we selected 6 full papers which will be organized in two sessions, and 7 short papers which will be presented in a poster session. Two invited talks are included from distinguished speakers:

- *Storytelling with Big Multimedia Data*, by Ramesh Jain, University of California, Irvine, USA.
- *Pushing Image Recognition in the Real-World – Towards Recognizing Millions of Entities*, by Xian-Sheng Hua, Microsoft Research, Redmond, USA.

5. PROGRAM COMMITTEE MEMBERS

The organizers would like to gratefully acknowledge the expertise and help of the TPC members of the workshop.

- Kiyoharu Aizawa (University of Tokyo, Japan)
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