

## COMPUTER SCIENCE SEMINAR SERIES

Department of Computer Science  
City University of Hong Kong

### Scalable Detection of Partial Near-Duplicate Videos by Visual-Temporal Consistency

**Mr TAN Hung Khoon**  
PhD Student  
Department of Computer Science  
City University of Hong Kong

**Date :**

29 October 2009 (Thursday)

**Time :**

4:00pm - 5:00pm

**Venue**

CS Seminar Room, Room Y6405, 6th Floor, Yellow Zone, Academic Building, City University of Hong Kong, Tat Chee Avenue, Kowloon Tong

#### Abstract

Following the exponential growth of social media, there now exist huge repositories of videos online. Among the huge volumes of videos, there exist large numbers of near-duplicate videos. Most existing techniques either focus on the fast retrieval of full copies or near-duplicates, or consider localization in a heuristic manner. This paper considers the scalable detection and localization of partial near-duplicate videos by jointly considering visual similarity and temporal consistency. Temporal constraints are embedded into a network structure as directed edges. Through the structure, partial alignment is novelly converted into a network flow problem where highly efficient solutions exist. To precisely decide the boundaries of the overlapping segments, pair-wise constraints generated from keypoint matching can be added to the network to iteratively refine the localization result. We demonstrate the effectiveness of partial alignment for three different tasks. The first task links partial segments in full-length movies to videos crawled from YouTube. The second task performs fast web video search, while the third performs near-duplicate shot and copy detection. The experimental result demonstrates the effectiveness and efficiency of the proposed method compared to state-of-the-art techniques.

This paper was presented in the ACM International Conference on Multimedia (ACM MM), Beijing, China, Oct 13-23, 2009.

Supervisor: Dr C W Ngo

Research Interest: Video Retrieval and Indexing, Near-duplicate Detection, Large-scale Media Search and Computer Vision

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All are welcome!

*In case of questions, please contact Dr C W NGO at Tel: 2784 4390, E-mail: [cscwngo@cityu.edu.hk](mailto:cscwngo@cityu.edu.hk), or visit the CS Departmental Seminar Web at <http://www.cs.cityu.edu.hk/>.*