

COMPUTER SCIENCE SEMINAR SERIES

Department of Computer Science
City University of Hong Kong
(Departmental Seminar Seminar 2006/2007 - No 65)

Near-Duplicate Keyframe Retrieval with Visual Keywords and Semantic Context

Mr WU Xiao
PhD Student
Department of Computer Science
City University of Hong Kong

Date :

5 July 2007 (Thursday)

Time :

11:30am-12:00 noon

Venue :

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

Abstract

Near-duplicate keyframes (NDK) play a unique role in large-scale video search, news topic detection and tracking. In this paper, we propose a novel NDK retrieval approach by exploring both visual and textual cues from the visual vocabulary and semantic context respectively. The vocabulary, which provides entries for visual keywords, is formed by the clustering of local keypoints. The semantic context is inferred from the speech transcript surrounding a keyframe. We experiment the usefulness of visual keywords and semantic context, separately and jointly, using cosine similarity and language models. By linearly fusing both modalities, performance improvement is reported compared with the techniques with keypoint matching. While matching suffers from expensive computation due to the need of online nearest neighbor search, our approach is effective and efficient enough for online video search.

This paper will be appeared in ACM International Conference on Image and Video Retrieval (CIVR'07), July 9-11 2007, Amsterdam, The Netherlands.

Supervisor: Dr C W Ngo (CS)

Research Interest: Multimedia information retrieval, image/video retrieval, novelty detection and tracking for cross-lingual news videos.

All are welcome!

* * * * *

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