

COMPUTER SCIENCE SEMINAR SERIES

Department of Computer Science
City University of Hong Kong
(Departmental Seminar Seminar 2007/2008 - No 8)

Ontology-Enriched Semantic Space for Video Search

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Date :

1 November 2007 (Thursday)

Time :

11:00am - 12:00noon

Venue

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

Abstract

Multimedia-based ontology construction and reasoning have recently been recognized as two important issues in video search, particularly for bridging semantic gap. The lack of coincidence between low-level features and user expectation makes concept-based ontology reasoning an attractive mid-level framework for interpreting high-level semantics. In this paper, we propose a novel model, namely ontology-enriched semantic space (OSS), to provide a computable platform for modeling and reasoning concepts in a linear space. OSS enlightens the possibility of answering conceptual questions such as a high coverage of semantic space with minimal set of concepts, and the set of concepts to be developed for video search. More importantly, the query-to-concept mapping can be more reasonably conducted by guaranteeing the uniform and consistent comparison of concept scores for video search. We explore OSS for several tasks including concept-based video search, word sense disambiguation and multi-modality fusion. Our empirical findings show that OSS is a feasible solution to timely issues such as the measurement of concept combination and query-concept dependent fusion.

This paper is presented in the ACM Multimedia 2007 (MM07), Augsburg, Germany September 24 - 29, 2007.

Supervisor: Dr C W Ngo (CS)

Research Interests: Content-based Video/Image Indexing; Multimedia Information Retrieval; Computer Vision and Pattern Recognition

All are welcome!

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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/>.