



THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering

Seminar

Robust Video Duplicates Detection and Localization in Large Video Repository with Likelihood Pruning

by

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**Venue : Room 1009, William M.W. Mong Engineering
Building**
The Chinese University of Hong Kong

Abstract

Advances in video storage and communication are fueling an explosive growth of online video content at an unprecedented pace. Finding video duplicates and near duplicates in very large online video repositories is a challenging technical problem that can have many applications in copyright protection, content and product search, and social networks. In this work we develop a likelihood maximization formulation in duplicate detection and localization. The likelihood of a probe frame has a (near) duplicate in the repository is evaluated by a multiple feature/multiple indexed locality searching scheme, which approximate the Mahalanobis distance to the repository frames. At sequence level a fast randomized likelihood pruning scheme is applied to reduce the candidate matching sequence set until a match is found or the probe is rejected. The solution offers flexible tradeoffs in detection robustness, localization accuracy, and computational complexity, and now achieves 98% precision on 100% recall in duplicate detection and probe localization within 0.5 second of a 116 hour video repository with a time complexity of 3 ms on a desktop PC with Matlab implementation.

Biography

Zhu Li is currently an Assistant Professor with the Dept of Computing, Hong Kong Polytechnic University. He received his PhD in Electrical & Computer Engineering from Northwestern University, Evanston, USA in 2004. He was a Principal Staff Research Engineer with the Multimedia Research Lab (MRL), Motorola Labs, Schaumburg, USA, 2000~2008.

His research interests include video coding and communication, video network optimization, video analytics and large scale multimedia search and retrieval. He has 12 issued or pending patents, 45 publications in book chapters, journals and conference proceedings in these areas. He received the Best Poster Paper Award at IEEE Int'l Conf on Multimedia & Expo (ICME), Toronto, 2006, and the Best Paper Award at IEEE Int'l Conf on Image Processing (ICIP), San Antonio, 2007.

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