Multimedia, Image and Video Data Mining

Multimedia Mining

Books

1. A. Rosenfeld, D. S. Doermann, and D. DeMenthon, Video Mining (Springer, 2003).

Papers

2. O. R. Zaiane, J. Han, and H. Zhu, "Mining Recurrent Items in Multimedia with Progressive Resolution Refinement ", Proc. 2000 Int. Conf. on Data Engineering (ICDE’00), San Diego, CA, March 2000.
5. X. Zhu et al., "Medical Video Mining for Efficient Database Indexing, Management and Access," Proceedings of the 19th International Conference on Data Engineering (ICDE’03) 1063, no. 6382/03: 17.00.
10. Junsong Yuan, Ying Wu and Ming Yang, From Frequent Itemsets To Semantically Meaningful Visual Patterns, in Proc. ACM Intl. Conf. on Knowledge Discovery and Data Mining (SIGKDD’07), 2007

People

1. Junsong Yuan Northwestern University
2. Liangliang Cao UIUC
3. Ying Wu Northwestern University

Image and Video Retrieval

Video Summarization

Open Source Softwares for Video/Image Processing:

**FFmpeg**, video processing tool supporting a lot of video formats

**OpenCV**, The Open Computer Vision Library is a collection of algorithms and sample code for various computer vision problems.

**movie thumbnailer**, video summarization tool based on FFmpeg

**vdbms** video database management system, one of its components is called FeatureExtraction (both binary and source code available at [http://www.cs.purdue.edu/vdbms/binaries.html](http://www.cs.purdue.edu/vdbms/binaries.html), complies in Visual Studio) input of FeatureExtraction is a mpg format video file, then the code can extract each frame, analyze image features, such as color histogram, edge histogram, then select keyframes and save as jpg format images.

About Video Summarization

Video Summarization, related research topics: video segmentation, key frame detection, shot detection, video abstraction, video clustering, ...

Algorithms: K-Means, Mean-Shift, ...

Papers

There are a lot of papers for video summarization. For example,

1. Video summarisation: A conceptual framework and survey of the state of the art
2. Correlating summarization of multi-source news with k-way graph bi-clustering
3. Keyframe-based video summarization using Delaunay clustering