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Content Based Video Retrieval System Using Principal Object Analysis

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Abstract : Video retrieval is a searching problem on videos or clips based on content in which they are relatively close to an input image or video. The application of this retrieval consists of selecting video in a folder or recognizing a human in security camera. However, some recent approaches have been in challenging problem due to the diversity of video types, frame transitions and camera positions. Besides, that an appropriate measures is selected for the problem is a question. In order to overcome all obstacles, we propose a content-based video retrieval system in some main steps resulting in a good performance. From a main video, we process extracting keyframes and principal objects using Segmentation of Aggregating Superpixels (SAS) algorithm. After that, Speeded Up Robust Features (SURF) are selected from those principal objects. Then, the model "Bag-of-words" in accompanied by SVM classification are applied to obtain the retrieval result. Our system is performed on over 300 videos in diversity from music, history, movie, sports, and natural scene to TV program show. The performance is evaluated in promising comparison to the other approaches.

Keywords : video retrieval, principal objects, keyframe, segmentation of aggregating superpixels, speeded up robust features, bag-of-words, SVM
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