

VIDEO COPY DETECTION USING FINGER PRINTING WITH FAST IMAGE PROCESSING

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ABSTRACT

Video copy detection has been actively studied in a wide range of multimedia applications. A video copy detection system is the process of detecting illegally copied videos by analyzing them and comparing them to original content. It is based on content fingerprinting and can be used for video indexing and copyright applications. This system is based on a property of fingerprint extraction algorithm followed by a fast approximate search algorithm. In this, a unique signature is created for the video on the basis of the video's content. The fingerprint extraction algorithm extracts compact content-based signatures from special images constructed from the video. Each such image represents a short segment of the video and contains temporal as well as spatial information about the video segment. These images are denoted by temporally informative representative images. To determine the query video, the fingerprints of all the videos in the database system are extracted and stored in advance. The fingerprint can be compared with other videos' fingerprints stored in a database. The search algorithm searches the stored fingerprints to find close enough matches for the fingerprints of the query video. The proposed fast approximate search algorithm facilitates the online application of the system to a large video database of tens of millions of fingerprints, so that a match is found in a few seconds. The proposed system is tested on a database of different videos in the presence of different types of distortions such as noise, changes in brightness/contrast, frame loss, shift, rotation, and time shift which emphasize the robustness and discrimination properties of the copy detection system.

KEYWORDS: Fingerprinting, Signatures, Temporal Information, Video Copy Detection, Video Indexing, Videos