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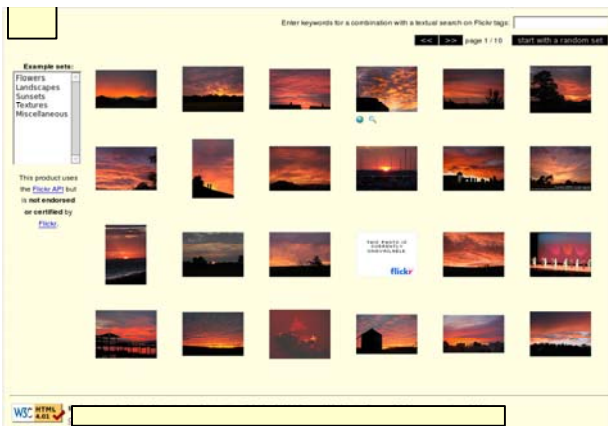
Image Similarity Search and Applications to Video Content

General

The image similarity search module provides a fast one-click similarity search based on color and texture features. It is applicable to still images and video frames (e.g. key frames). Images are processed in an offline phase where color and texture information is extracted and stored. Once analyzed, sets of millions of images are retrievable within milliseconds.

Still image retrieval

The image similarity search retrieves visually similar images for an image query provided by the user. Visual similarity is measured in terms of local color and texture similarity properties based on syntactic features. Thus the system retrieves images with a similar color and texture layout. Result sets are ranked according to the degree of visual similarity.



In many cases visual similarity also indicates a similar semantics of the image content as depicted in the above query for a *sunset scene*. The first image (in the first line) is the query image provided by the user.

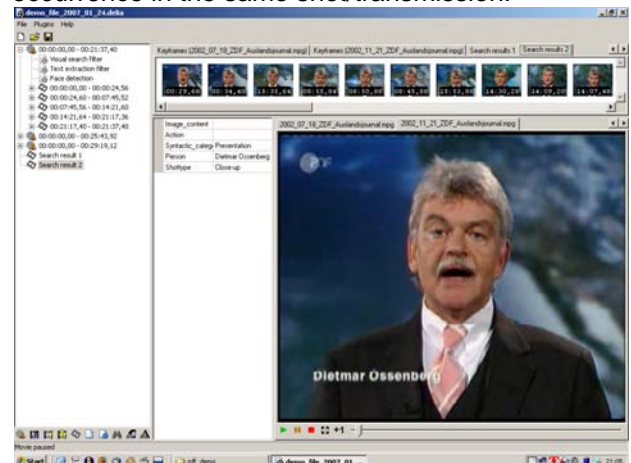
Application to video frames or segments

Naturally this approach for still image retrieval is also applicable to video frames. A typical scenario would be to feed key frames – e.g. for segments detected by a shot analysis – or representative

frames of any kind into the analysis process.



A search for video segments (e.g. shots or even longer segments) can be achieved by providing a set of representative frames for a video segment. The result sets for each individual query can then be combined based on temporal distance or occurrence in the same shot/transmission.



Detection of footage reuse

The image similarity search can also be used to detect footage reuse in video archives based on extracted representative frames. This can be considered as a trivial case of similarity search as we search for virtually identical (aside from e.g. textual inserts) video frames then.

Combination with other search criteria

The image similarity search is applicable to subsets of the image archive and can easily be combined with other search criteria such as footage categorization or textual annotations and other metadata.