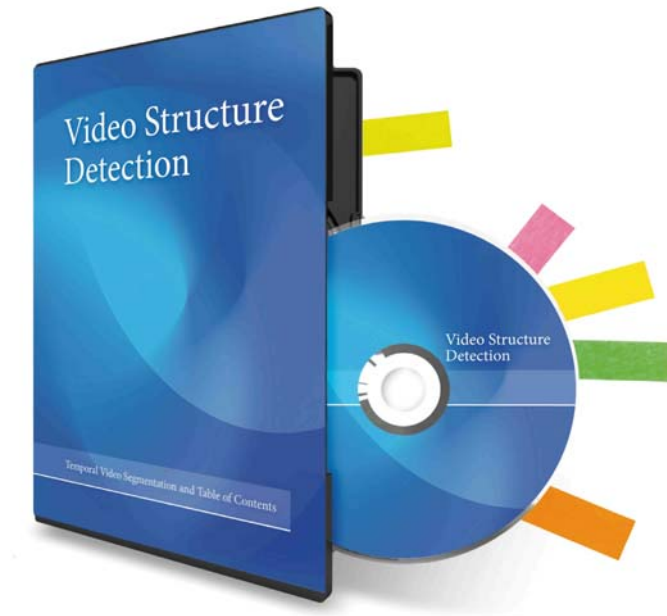


Video Structure Detection

Temporal Video Segmentation and Table of Contents



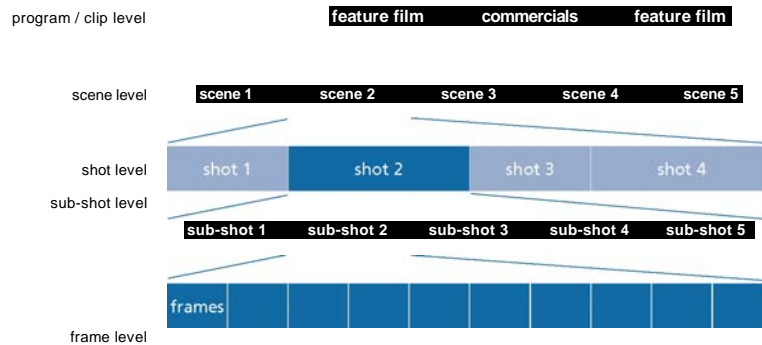
Features

- **Proven high quality segmentation of videos into scenes, shots and sub-shots**
- **Offers a visual table-of-contents**
- **Frame accurate access to different semantic parts of a video**
- **Browsing and editing capabilities**
- **Foundation for search functionalities**
- **C and C++ library interface integration by software developers**

This new video analysis library segments videos into their temporal units (scenes, shots, sub-shots). Possible applications include: personal video recorders, video communities, video asset management software, video editing software, video archiving and video search engines. The temporal video segmentation library is intended to be integrated by software developers and manufacturers into their applications. It runs very fast even on standard PCs. Several patents are pending.

What is temporal video structure?

As books have chapters, sections, paragraphs and sentences, videos also have a structure. Scenes, shots and sub-shots are the units that can be found in video and film. A shot consists of the video frames that have been continuously recorded with a single camera operation. Shots can be connected by simple cuts or editing effects such as fades, dissolves or wipes. Sometimes shots contain considerable camera or object motion. Then visual content might change considerably throughout a shot and it should be segmented into several smaller visually consistent sub-shots. Scenes on the other hand contain a number of shots that belong together. This could be an entire interview, a scene on the beach or a scene at a restaurant. Scenes are usually the units that humans remember.



What is this technology good for?

Video Browsing - Today's user interfaces often only provide a single image and a small text to represent a video file. A scalable and browsable visual representation enables the user to be much better able to judge the visual content before even actually watching the video.

Frame Accurate Access - A user interested in a specific part of the video, e.g. a certain news story of a newscast can quickly locate the section by browsing the key-frames. Then he may directly jump to the beginning of the section without having to rely on tedious fast forward and fast backward or blindly drawing a slider back and forth.

Video Editing - Frame accurate segmentation of video into shots will provide the user with the units he wants to rearrange. On a personal video recorder a key-frame view will enable the user to easily identify sections before and after the main show and additional commercial breaks as well. A frame accurate deletion of these sections is easily carried out.

Video Annotation and Search - Video search engines need temporal units that can manually or automatically be annotated, indexed and described by text. How much more information is available if a much more detailed search inside of videos is possible?

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