As users collect tremendously growing amounts of images and video, they require intelligent strategies for managing and accessing their visual content. Our technology faces this challenge by automatically detecting semantic concepts in videos:

1. A video stream is automatically analyzed
2. Objects, places, and activities are recognized
3. The video is enriched with recognition results

Research
Our technology performs an analysis of video content by feeding a scene’s motion, color, and texture to a variety of statistical learning algorithms. A key challenge lies in the training with labeled examples. To reduce the manual effort for the user to a minimum, our research focuses on an autonomous learning from web portals such as Flickr or YouTube.

Selected Publications


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Use Cases
Detection
Our system allows you to search videos for certain scenes: you enter a keyword related to an object, location, or action (like “Eiffel Tower”, “beach”, or “interview”), and the system automatically detects corresponding scenes within your video collections.

Recommendation
By understanding what you watch (e.g., a soccer match), our system can on the fly recommend things that might be of interest to you: we can suggest other videos, point you to the latest news, or even recommend products and thus realize a personalized advertisement.

Personal Video Assistant
Ultimately, automatic video understanding can serve as a personal tool that recalls videos you have been watching, allows you to search your “visual memory”, identifies your preferences, and realizes a highly efficient content management this way.

SHOW CASE
TubeTagger
madm.dfki.de/demo/tubetagger

Smart Video Buddy
madm.dfki.de/demo/smartvideobuddy

TubeFiler
madm.dfki.de/demo/tubefiler