VIDEOSUM: A VIDEO STORING, PROCESSING AND SUMMARIZATION PLATFORM

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Abstract

We demonstrate VideoSum, a video processing, storage and summarization platform. The main purpose of VideoSum is to allow companies, organizations producing audiovisual data, broadcasters, professional filmmakers and anyone interested in video editing, to organize efficiently and effectively audiovisual data and automatically create summaries of unedited/edited video. VideoSum focuses on the representation, summarization, indexing, retrieval and browsing of video data with respect to its visual content.

1 Introduction

We present VideoSum[1] (demonstration video[2]), a video storing, processing and summarization tool. VideoSum can process edited and unedited video originating from different categories such as movies, news, documentaries, series, reportage, shows and home videos. VideoSum provides the following functionalities: i) editing audiovisual data and creating summaries that reduce the data volume and processing time accordingly. ii) Text-based or video-based search in digital libraries. iii) Automatic and efficient indexing of audiovisual data.

2 System Architecture

VideoSum can handle a variety of video types, edited or unedited. The main features/contributions of this system are:

- *Video Segmentation*: Segmentation can be applied in three levels ranging from the finest shot level, the intermediate scene level and the coarse chapter level.
- *Video Summarization*: Efficient summarization algorithms can provide different summarizations of the video content in any level.
- *Video Representation*: Different visual representations of the video's summary are available to the user.

- *Video Storage*: Storage of different summary types, such as video, images, xml and html.

The system is fully automated, processing several actions with respect to the video type. System parameters can be adjusted to fit the user's preferences. The basic actions of the system are:

- Shot Boundary Detection
- Unwanted Shots/Frames Removal
- Shot Representation/Summarization
- Detection of Sequences of Similar Shots
- Scene/Chapter segmentation
- News Detection
- Camera Movements detection

The major contribution of VideoSum application is the ability to produce several types of video summaries [1]. In this way the user will rapidly make an assessment about the video content and could use the information extracted for further video editing.
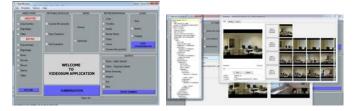

Figure 1. VideoSum application screenshots.

Acknowledgements

References

[1] V. Chasanis, A. Likas, and N. Galatsanos. Scene detection in videos using shot clustering and sequence alignment. IEEE Transactions on Multimedia, 11(1):89–100, January 2009.

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[1] http://www.cs.uoi.gr/_videosum/index_en.html

[2] http://www.cs.uoi.gr/_videosum/Videosum.mp4