Video Segmentation and Indexing
Executive Summary

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SIS is a tool to segment videos into scenes based on people appearing, and index those scenes accordingly. Our product is therefore an aid to tagging and delimiting scenes for an easier handling and navigation of both personal videos and movies. This is being done in an automated way, requiring minimum effort from the user and saving a considerable amount of time. It is easy to use, with a simple, intuitive interface and flexible configuration options.

The current progress in video compression and communication has led to a large amount of digital video material to be available online. This is also being encouraged by the fast internet connection users have access to and the growth of social media. The rapid increase in video data requires suitable means to efficiently process and manage it. Another important scenario to be considered is the film industry, particularly where archived material is concerned. The most accurate solution known at the moment is manual indexing, an extremely laborious and time consuming process. A dramatic improvement for film researchers was recently introduced through online catalogues, allowing them to work remotely or easily access material from abroad. However, in order for these catalogues to be truly useful, they must offer efficient tools for indexing and querying.

The line of investigation chosen is to make use of face recognition techniques. Once a video is loaded into SIS, each frame is being processed in order to detect the presence of faces with frontal pose. The relevant features are extracted and the collected data is clustered and associated with individual people. Consecutive scenes containing different faces are being delimited and become easily navigable for the user within the graphical interface. Indexing is designed to track and retrieve all the scenes correlated to a particular person.

SIS has applications to real world problems in various scenarios, being also a challenging research topic. Combining the robustness and rigour of the mathematical algorithms with the flexibility and simplicity of the graphical interface, it provides a clean solution for segmenting and indexing a variety of videos.