

# MediaMill: Fast and Effective Video Search using the ForkBrowser

Ork de Rooij, Cees G.M. Snoek, and Marcel Worring  
ISLA, Informatics Institute  
University of Amsterdam  
Kruislaan 403, 1098 SJ  
Amsterdam, The Netherlands  
mediamill@science.uva.nl

## ABSTRACT

In this technical demonstration we showcase the MediaMill ForkBrowser for video retrieval. It embeds multiple query methods into a single browsing environment. We show that users can switch query methods on demand without the need to adapt to a different interface. This allows for fast and effective search through large video collections.

**Categories and Subject Descriptors:** H.5.1 Information Interfaces and Presentation: Multimedia Information Systems

**General Terms:** Algorithms, Design, Performance

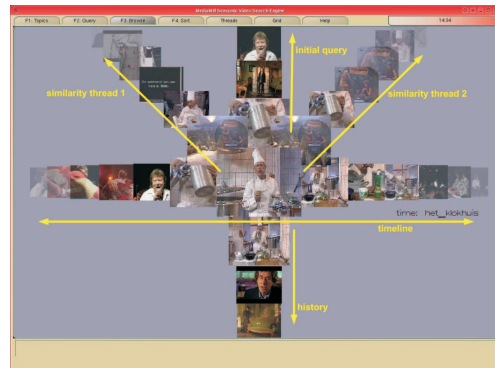
**Keywords:** Video retrieval, information visualization

## 1. INTRODUCTION

Users have become accustomed to fast and effective searching and navigating through textual information. With the ever increasing popularity of digital video, both online on sites like YouTube and off line in archives of broadcasters, users demand at least the same functionality from video search engines. This is problematic, however, as the dynamic visual content of video does not reveal its semantics as easily as textual content does. Therefore, several query methods and browsing methods have been proposed lately to provide users with semantic access in an interactive fashion. For effective video retrieval, several query methods need to be combined, but this puts a heavy burden on the (expert) user. Since the user has to switch between retrieval interfaces this often slows down the search. In this paper, we present the latest innovation in the *MediaMill* semantic video search engine: the ForkBrowser [1]. By embedding several query methods into a single browsing environment, it allows for fast and effective search through video collections.

## 2. VISUALIZING QUERY METHODS

To leverage the benefits of having multiple query methods without slowing down the interface we elaborate on the notion of threads [1]. Threads are ranked lists of shots, based on some feature similarity space, which results from a specific video query method. Navigation using these threads is done as follows. The user specifies an initial query using for example both query-by-keyword and query-by-concept.



**Figure 1:** We demonstrate the MediaMill ForkBrowser on the TRECVID 2007 video collection. The top tine displays automated query-by-keyword results, the horizontal tines display the time-line of a “Klokhuis” episode, the diagonal tines display dynamic threads, which are semantically or visually similar to the center image, and finally the stem of the fork displays the current browse history.

This generates a thread of relevant shots for this query, with the most relevant shot selected as the starting point. The ForkBrowser then visualizes results by displaying the shots based on the shape of a fork, see Figure 1. The contents of the tines of the fork depend on the shot at the top of the stem. The center tine shows unseen results from the first query, the leftmost and rightmost tines show the timeline, and the two tines in between allow on demand querying by showing visual similarity threads. The stem of the fork displays browse history. All browse directions, each tine, and the stem, are accessible by keyboard and mouse for quick navigation. During the demonstration we will showcase that the ForkBrowser allows for fast and effective video search.

## 3. ACKNOWLEDGMENTS

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## 4. REFERENCES

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