# MYMTV: A PERSONALIZED AND INTERACTIVE MUSIC CHANNEL

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## ABSTRACT

In this document, we present MyMTV, an Interactive TV which adapts to one's habits, tastes and moods: A music recommendation channel, tailored to the users tastes. Users create a personalized channel of videos by simply selecting a song or an artist they like. The system identifies and log what music video the user is watching. Based on this information, the system builds a user profile to improve the quality of future recommendations. User profiles are stored and managed in order to adapt the personalized stream of content and fit the users tastes, habits and moods. Add-on services are also offered related to the content, such as song lyrics and information about artists. Existing recommendation services are all technically reliant on collaborative filtering techniques. Here we present a Hybrid Recommendation Framework combining user-profiling and collaborate filtering with the multimodal audiovisual content-based approach, thus leveraging the benefits of both worlds in a single system. Both audio features and collaborative filtering are used for recommendation. Users can rate the songs and this information is employed to improve the recommendation quality. Similarity measures between music videos are computed, as well as mood annotation, which helps the user to find the content he would like and that fit to his mood. This demo features all these functionalities.

**Main features:**

- Personalized online TV channel for Music Videos

- Client/Server approach

- User creation and profiling

- Hybrid recommendation (user profiles collaborative filtering and content based audio similarity)

- Browse by Mood: Audio based mood classification

- Metadata and context visualization: information about the artist, lyrics

## 1. TECHNICAL DETAILS

This application uses a client/server approach. The most relevant parts of the back-end (server) are the content-based audio description and the recommendation engine. The former analyzes the audio stream and extracts from it a set of meaningful descriptors and the latter, based on the descriptors, computes similarity between songs and classifies the songs into different mood categories (see [1] for the detailed algorithm, the C++ libraries used are Essentia and Gaia [2]). The front-end (client) is made with flash and receives the video stream. Users can interact with the TV channel using a remote control.
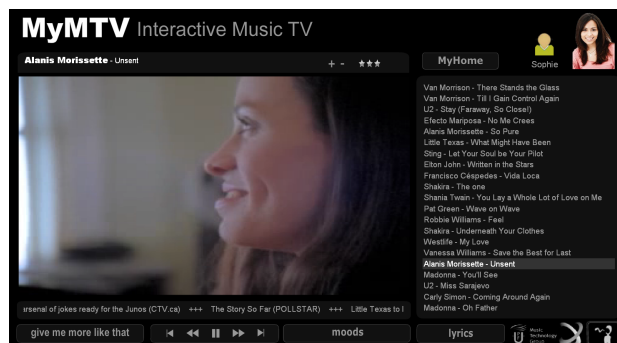


**Figure 1**. MyMTV Flash Interactive GUI

## 3. REFERENCES

[1] C. Laurier, P. Herrera: "Automatic Detection of Emotion in Music: Interaction with Emotionally Sensitive Machines," *Handbook of Research on Synthetic Emotions and Sociable Robotics: New Applications in Affective Computing and Artificial Intelligence*,Chap. 2, pp. 9–32, IGI Global, 2009.

[2] Essentia & Gaia: audio analysis and music matching C++ libraries developed by the MTG (Resp.: Nicolas Wack), http://mtg.upf.edu/technologies/essentia

[3] CANTATA: Content Aware Networked systems Towards Advanced and Tailored Assistance. European Research Program sponsored via Eureka under the ITEA programme. http://www.itea-cantata.org/.