Simac

Semantic Interaction with Music Audio Contents

www.semanticaudio.org

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SEMANTIC

SIMAC is about software tools that enhance our music enjoyment experience. The term semantic refers to user-centred representations of knowledge about music, which will improve the cooperation between people and computers. A large wealth of semantic descriptors can be computed in an automatic or semi-automatic way.

INTERACTION

SIMAC is about bringing active involvement in the music listening process, it is about sharing views and music knowledge among music lovers. Interaction means new ways of describing, displaying, explaining, exploiting, discovering, playing and organizing music collections. Interaction requires bridging the semantic gap

MUSIC AUDIO CONTENTS

SIMAC is about music metadata, about what you can say of a piece of music, it is also about what is hidden in a music file, in a collection of music files, and in the collective knowledge of a community of music lovers. Music Audio Contents can be automatically extracted with the SIMAC tools in order to open up new navigation and retrieval strategies, or in order to get suggestions for discovering potentially interesting (but unknown!) music. SIMAC makes possible to step beyond music information retrieval and move towards the realm of music content discovery.

There are 3 axes of research and technological development in SIMAC:

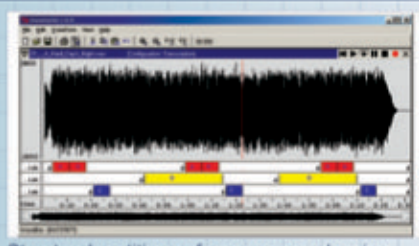
- Semantic descriptors of music
- Similarity in music
- Musical structure

1. The Music Annotator Prototype:

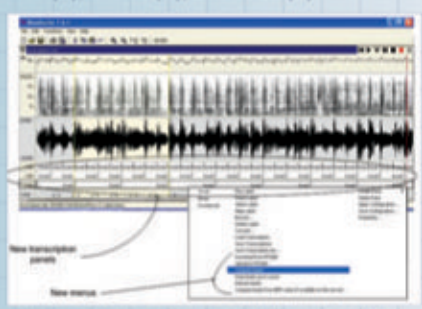
Annotation of semantic markup of music audio contents

A multi-faceted description of music is computed, including:

- Rhythm descriptors such as tempo (BPM), meter, swing, rhythmic complexity
- Tonality descriptors such as key, mode, tonalness, dissonance, etc
- Timbre-related descriptors such as amount of percussion, balance of percussion instruments, timbre complexity
- Genre
- Subjective descriptors such as calm, enigmatic, difficult, trippy, menacing, happy, sad, anger, etc
- Structural marks (introduction, chorus, verse, bridge, solo, etc)



Structural partitions of a pop song, showing intro (A), chorus (C), and verse (B)



Music is automatically annotated according different simultaneous criteria. Automatic annotations can be corrected or overriden by hand. In some cases, annotating a short excerpt may help the automatic annotation to improve its accuracy for the rest of the song.

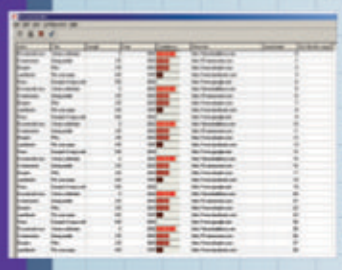
2. The Collection Explorer and Organizer Prototype:

Visualizing and putting order in personal collections of music files by means of semantic descriptors

Music collections can be visualized according to music similarity criteria, or according to selected semantic descriptors. Hidden connections between songs and/or artists can be discovered by configuring and navigating the different types of maps.

3. The Music Recommender Prototype:

Getting recommendations for downloading potentially interesting and unknown music



Interesting songs that have been found by the Recommender are listed and the links to download them are provided. The "confidence" of the system about the suitability of each song for the specific user is also shown.

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