

Research Proposal Summary

Interactivity in audio browsing, for the user and the researcher.

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Browsing music efficiently is becoming more and more important everyday. The amount of available data is growing endlessly, thanks to faster networks (among many other reasons), and people, which are first presented with a lot more choice, are becoming overwhelmed and don't know anymore how to look for music. Human recommendation is not enough anymore, given that a whole lifetime would not be enough to listen to even a tiny fraction of the audio content we have nowadays...

A lot of research is fostered around the world to provide more efficient ways to browse songs, new features are extracted from these songs, and new algorithms are developed to classify them. However, until algorithms are finalized, tested and recognized as useful, they remain experiments in the research field, and usually the interface is the last step in such projects.

My research proposal is to create a general-purpose framework and interface to be able to serve as a tool for the researcher first, and then improve it, from a usability point of view, for the end-user so he as well can find songs easily based on their acoustic properties. The gist of my research would then be to improve the field I'm working on, i.e.: music information retrieval by using the tools I developed in the first part.

The first version of the program would allow a researcher to easily plug in its own acoustic features (descriptors) and use predefined algorithms to evaluate the validity of these features, or the other way around, to use predefined features to test a new classification algorithm, all this in a unified interface. It would allow to run experiments very quickly and easily, thus eliminating the need for all the administrative tasks such as creating a song database, putting everything in the same place, running scripts to convert mp3's to wavs, 44Khz to 22Khz, gathering the results, presenting them, etc.

The enhanced version would allow even someone not versed into music information retrieval to be able to find songs easily given predefined criteria.

The follow-on of my research (which is not definitely fixed yet) would then either go on with improvements on the user interface, and seeking new ways to browse collections of music, probably different than just static maps of sounds (dynamically changing maps wrt to recently listened songs, or even 3d navigation, ...), or working on new descriptors and trying to architect a general system that would allow to easily combine low-level descriptors into high-level ones, which will be more useful to us.