

MA (external at Swisscom Innovations, Bern):

Organization of Music on Mobile Devices

Media usage is changing rapidly these days. This process has been ignited by several technological advances, in particular, the availability of broadband internet, the World Wide Web, affordable mass storage, and high-quality media formats, such as mp3. All this enabled the digital music revolution about 10 years ago.

Many music lovers have now accumulated collections of music that have reached sizes that make it hard to maintain an overview of the data by just browsing hierarchies of folders and searching by song title or album. A fact that is particularly true on mobile devices. Organization based on song similarity offers an alternative, allowing users to abstract from manually assigned metadata, such as, frequently imprecise or incorrect, genre information. The SensME feature (see, e.g. <http://blog.se-nse.net/reviews/sensme%E2%84%A2-review/>) recently introduced by Sony Ericsson is a first step into this direction. However, we believe that there is lots of room for improvements in various areas, such as user interface and functionality. Moreover, we believe that similarity measures derived from user listening behavior offer advantages over the acoustic measures used in SensME. In previous projects we have developed a high dimensional music similarity space that reflects the listening behavior of more than 300K users. Based on this space we have further developed prototype applications for the web (www.musicexplorer.org) as well as the Android¹ mobile platform (www.musicexplorer.org/mobile/help).



The goal of this thesis is to extend the Android application in collaboration with Swisscom Innovations. In particular, you will have to address one or more of the following topics:

- **Visualization:** An intuitive visual interface to navigate through and explore a music collection on a mobile device, possibly making use of state of the art UI technologies, such as touch screen and motion sensors, is a major challenge.
- **Recommendation:** Integrating a recommendation algorithm that understands the user's music taste and is able to provide personalized recommendations is of utmost economic interest. Currently implemented features seem to be extendable into this direction.
- **Collaboration:** So far, mobile music players are mostly used in an isolated fashion only serving their user. We believe that in many situations, such as when gathering with friends, for example, collaborative features could greatly enhance the users' music experience.

Interested? Please contact us for further details!

Requirements:

- Programming experience
- Independent working

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¹ <http://code.google.com/android/>