

Spotify-ed: Music Recommendation and Discovery in Spotify

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1 Motivations

Not so long ago, before the Internet boom, listening or discovering new music was a challenge on its own. Now, with a few clicks one can have on their hands such a vast music catalogue that a human mind is not able to compute.

There is an uncountable number of music streaming services that offer exactly that¹. They allow the users to play music, save their collection, create playlists and much more. Most of these services also have social components that allow the users to share what they're listening to with their friends, as well as playlists and much more.

Some services focus on creation/generation of playlists (8tracks²), others try to expand their music catalogue even further (Spotify³, Rdio⁴), while others focus more on personalized music recommendations (Pandora⁵). The latter ones, present their music recommendations to the user with a list or a grid of music artists, for example. However, lists do not provide the user enough information about the relation between the results [1]. One could even say that they are not related to each other, which is not true.

The relations exist and can be represented as a network of interconnected artists in a graph, where a node is a music artist, and each edge between them represents a connection. This is the concept that RAMA (Relational Artist MAPs), a project devel-

oped at INESC Porto, uses [2] [3] [4] [5].

2 Goals

From a single search, RAMA draws a graph that helps the user to explore new music that might caught his/her interest in a much more natural way.

Nonetheless, when a user wants to listen to an artist's music, Youtube's stream is used. Although one can find a large catalogue of music in Youtube, this service is not music oriented and the sound quality is not adequate for a music streaming service.

Youtube's stream needs to be replaced. From the available services that provide a vast music catalogue, Spotify⁶ provides a good quality stream and a good developer support for creating Spotify powered Applications.

But how can RAMA and Spotify be integrated?

The initial proposal was to develop a software module that implements, at least, one of the following features:

1. Integrate Spotify's music stream into RAMA's website
2. Integrate information from the Spotify user into RAMA
3. Improve RAMA's features and design
4. Integrate the RAMA concept into a Spotify Application
5. Integrate RAMA's playlist generation into a Spotify Application

¹Although some of them require the users to subscribe to a monthly fee, for example, in order to fully use the service, or remove the advertisements.

²<http://8tracks.com>

³<http://spotify.com>

⁴rdio.com

⁵pandora.com

⁶<http://spotify.com>

6. Integrate some of the above mentioned modules into a Mobile Application

In the end, this dissertation proposes a Spotify Application⁷ (module 4) that works like a plugin to the Spotify's Desktop Client, i.e., it should add something to Spotify's Application. This is a very appealing solution: Spotify Users will have the chance to continue using Spotify as they would normally do, but with an extra help to discover new music by using RAMA's application *inside* Spotify. This method works on the assumption that Spotify's music discovery mode can be improved using a visual tool like RAMA.

This approach urges to answer the following question: Will a Spotify User experience a more pleasant and natural way of music discovery from this graphical representation of artist relations within Spotify, than its standard discovery mode?

3 Work Description

The main features of the prototype are as follows:

- Visualization of relations between artists by means of a visual tool;
- Edition of the visualization using several parameters;
- Edition of the graph by allowing to remove and add new nodes;
- Visualize tags/genres (that describe an artist) in the graph representation.

The proposed work phases contemplate:

State of the Art

Initial research on the current state of the art. This includes the services that provide a platform for users to listen and discover new music. Focus will be given to the ones that use visual tools.

⁷<https://developer.spotify.com/technologies/apps>

Contextualization

Detailed analysis of the Spotify environment from the users perspective (applications available, e.g.) and from the developers perspective (available APIs, e.g.) in order to give a much more insightful view when determining the feasibility of the prototype's requirements.

Implementation and Validation

Definition and implementation of: the prototype's main features/requirements; the development processes and the user validation processes.

Discussion and Future Work

Discussion of the results and definition of future work to be done in the prototype (improvements, features, bugs, etc).

4 Conclusions

By using RAMA's concept applied in the developed prototype, the user experience when discovering new music as been greatly increased. All of the beta-testers liked the visual experience and the majority responded positively about using the application in a regular basis to discover new music.

References

- [1] P. Lamere. Creating transparent, steerable recommendations. 2008.
- [2] BG Costa, Fabien Gouyon, and L Sarmento. A Prototype for Visualizing Music Artist Networks. 2008.
- [3] L Sarmento and EC Oliveira. Visualizing networks of music artists with rama. *International Conference on Web ...*, 2009.
- [4] Diogo Costa, Luis Sarmento, and Fabien Gouyon. RAMA : An Interactive Artist Network Visualization Tool. (i):2, 2009.
- [5] Fabien Gouyon, Nuno Cruz, and Luis Sarmento. A last.fm and youtube mash-up for music browsing and playlist edition. 2011.