Assessing the results of a cover song identification system with coverSSSSearch

Joan Serrà[*]

Music Technology Group, Universitat Pompeu Fabra, Barcelona, Spain.
`joan.serraj@upf.edu` `http://mtg.upf.edu/people/jserra`

Abstract

The automatic identification of cover songs, i.e. versions of the same underlying musical piece, is interesting from multiple points of view and, therefore, many approaches for that specific purpose have been proposed [1]. In the present demo we assess the output of a cover song similarity system through the *coverSSSSearch* graphical user interface (GUI). Our system is primarily based on the similarity measure reported in [2], but incorporates a cover set (or cluster) detection layer [3] on top of it[1]. With *coverSSSSearch*, the user can browse a cover song collection via a standard query/retrieval framework [Fig. 1(a)]. The results of the search are shown in a ranked list, together with the obtained distances to the query. For comparison purposes, metadata and ground truth information is also shown. Furthermore, for exploring and visualizing the results of the system, a graph renderization for each automatically detected cover set is depicted [Fig. 1(b)]. In this graph, nodes correspond to song titles and edges reflect the similarity between songs. We exploit the aforementioned cover song similarity measure, reflected in the thickness of the edges, but also incorporate timbral similarity[2], which is reflected in the length of the edges.
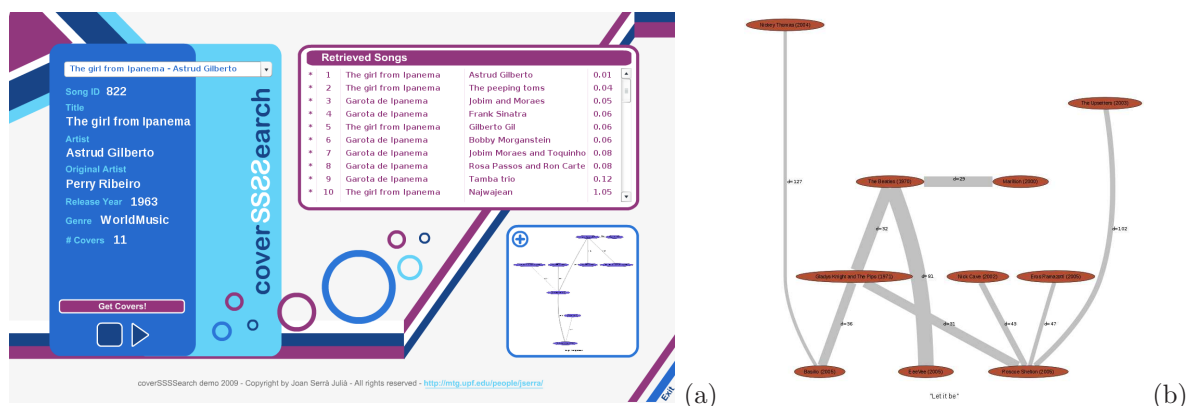
Figure 1: A snapshot of the GUI (a) and a detail of the cover set visualization (b).

References

[1] J. Serrà, E. Gómez, and P. Herrera. *Audio cover song identification and similarity: background, approaches, evaluation, and beyond.* Springer. In press.

[2] J. Serrà, X. Serra, and R. G. Andrzejak. Cross recurrence quantification for cover song identification. *New Journal of Physics.* In press.

[3] J. Serrà, M. Zanin, C. Laurier, and M. Sordo. Unsupervised detection of cover song sets: accuracy increase and original detection. *Conf. of the Int. Society for Music Information Research (ISMIR)*, 2009.

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[1]For the present demo all calculations are made off-line.
[2]Timbral similarity is computed via the commonly used Kullback-Leibler divergence between 1-Gaussian mixture models of Mel-frequency cepstral coefficients extracted on a frame-by-frame basis.