

## In Search of a Unifying Query Language for Music Information Retrieval

Baeza-Yates et. al describe Information Retrieval (in contrast to data retrieval) as the process of finding the information items that best fulfill the user's information need [BY99].

In the past it has been argued that query-by-humming as the straight-forward application of the intuitive query-by-example paradigm in the context of Music Information Retrieval is the most user-friendly query paradigm. However, it can be seen only as one form of expressing one's information need. Taking into account the difficulties many potential users of Music Information Retrieval systems have with singing or a humming part of the piece they have in mind accurately enough, it seems reasonable to offer additional query facilities.

This could be realized e.g. by standard meta-data that is manually assigned to pieces (like author, title, etc.), (semi-)automatically derived meta-data as described in MPEG-7 annotations, (part of) lyrics or more structured information following a specified ontology.

To benefit from a multi-paradigm query approach it is essential to find a unifying query language that is not only capable of expressing queries in different specification languages but also allows to combine the results of the responsible query modules.

Therefore, we are currently investigating whether an appropriately extended description logic (like e.g. [MSS98]) is capable of unifying the different forms of information need formulations. We are developing the modular Music Information Retrieval prototype AdMIRE (Advanced Music Information Retrieval Environment) to evaluate the interaction and combination of different query modules.

Furthermore we believe that a sophisticated Music Information Retrieval System should allow the user to interact. We are therefore investigating how the ideas of Kohonen's self-organizing maps can be utilized for the presentation of query results and for the adjustment of the query expression towards the user's information need.

Although the topic of Music Information Retrieval as such is quite new to our chair, we have strong experience in using MPEG-7 databases for E-learning and for storing annotations of electro-acoustic multi-channel music [KSJ03] and combining ontology-based access strategies and text mining techniques to ease access of weakly structured text collections [CB03].

### References:

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