

# Advanced Sheet Music Searching with Soundmotions ‘Drindlefish’

**Jools Lewthwaite**

Soundmotion Ltd  
jools@preseee.co.uk

**Second author**

Retain these fake authors in submission  
to preserve the formatting

**Third author**

Affiliation3  
author3@ismir.edu

## ABSTRACT

We will demonstrate our experimental score searching website locally at conference and open the web site for a period of time thereafter to interested parties. This site demonstrates the uses of Soundmotions ‘Drindlefish’ score searching framework within a generic integration and the various functions it provides for powerful sheet music searching.

Score search is not a well-developed area of MIR: sites lack structured methods and relevant result content. Recent trends seem to be towards augmenting them with graphical ‘sugar’ or providing a great many functionalities, often of dubious value, making the sites too ‘busy’ for ease of use. What is required are intuitive, clearly presented search returns coupled with methods that allow a user to efficiently search, filter, preview, and generally traverse the repository via useful linking mechanisms, in a manner similar to general search engines.

To this end the Drindlefish framework produces a variety of summaries of a music score. These take two basic forms: listing of salient aspects of the score and summarization of it by direct means - by selection and display of a small set of snippets of the music which taken together describe the broad aspects of the score. These are used in two main modes: inline with the search results for initial ‘scanning’ i.e. quick filtering of list of search results to reject definitely uninteresting and identify potential interesting results, and for previewing – providing a superior ‘look inside’ functionality that gives the user a summary of the compass of the music, rather than an arbitrarily chosen ‘first page’ which may or may not be representative of the piece as a whole.

The internal coded form of these summaries is used to enable a similarity linking, either of pieces as a whole to other pieces, or of the ‘thumbnails’, either to other pieces, or to methods and exercises which can help learn the particular aspects of playing represented by the snippet.

This linking allows players to find focused material to help them learn songs, can aid teachers in finding suit-

able, but still relevant, material for their pupils, and to help players find music within their scope either in tandem with genre mark-ups, or for those not ‘genre-locked’, to find similar pieces across genres, investigate the influences, similarities and generally expand their repertoire based on pieces they enjoyed and were able to learn to play.

The general approach has been to represent the music in terms of a coding of *how it is played* on a given instrument. The system can be used for any instrument (and easily extended to cover multiple instruments and also to work with folios), though appropriate codings must be found. This means that for instance fingers used, strings played, frets stopped and so on form the basis of the coding. Although careful refinement is required for best performance, and can be adjusted to fit various specific criteria, relatively simple codings have yielded effective results.

This approach via the physical aspects of playing means that the playing aspects are brought to the fore in the summaries produced and the linking provided can be interpreted as ‘if you can play that you can play this’. This focus on the actual playing we think is critical information to the searcher. For instance, by directly displaying appropriate snippets the user can *visually* and almost automatically judge that multidimensional and subjective evaluation of ‘difficulty’. This does not require expertise in score reading - a beginner can easily and quickly reject scores that ‘look’ too difficult, and in general every user can resolve the information to the limit of their understanding and visually abstract such things as the prevalent rhythms, techniques used, typical forms at the measure/hyper-measure level and so forth.

The strong connection between the physical actions in playing and the actual music produced means that the user still receives effective summaries of the music *qua* music, (though not directly in terms of top level musicological aspects, e.g. harmonic analysis). One can contemplate the relationship between arpeggios written as music, heard as sound and as an action sequence on an instrument, and realize that there are systematic relationships between them, so the summaries produced by Drindlefish will give important information, in a compact and intuitive form, to all levels and types of users.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page.

© 2011 International Society for Music Information Retrieval