

Demonstration of the PerlHumdrum Analysis Toolkit (PHAT)

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The PerlHumdrum Analysis Toolkit (PHAT) is a software system for working with large collections of symbolic music. While based on the original Humdrum toolkit by David Huron, it is a completely new, self-contained implementation with no reliance on the original toolset. This new version is fully object-oriented, scriptable, and much more flexible than the original awk-based tools. PHAT is designed to easily facilitate analysis and processing of multiple humdrum files, and to answer common musicological questions across entire sets, collections of music, or even the entire output of single or multiple composers. Entire scores, parts of scores, or extracts of any size may be manipulated, combined, or translated to other data types with ease, and can be scripted to perform the same operations repeatedly on multiple files.

The toolkit also comes with an extensive test suite, intended to ensure robustness of the toolkit through future evolutions. This, combined with the use of the the primary language of Perl, one of the most widely-used programming languages in the world, ensures that the toolkit will continue to run on all major computing platforms in the future. An additional component of PHAT, PerlLilypond, is used to provide graphical notation of musical examples or other scored extracts. PHAT is primarily intended for use by music theorists, computational musicologists, and Music Information Retrieval (MIR) researchers. While still under development, the toolkit is intended to be able to use additional music formats such as MusicXML with the existing Humdrum tools.

PHAT was first presented at ISMIR in 2008 and has been used in multiple research publications. It is currently in use by musicologists at major academic institutes and is rapidly approaching a formal release. Many of the examples that will be used in the ISMIR tutorial "Pattern Discovery and Search Methods in Symbolic Music Information Retrieval" (August 9th, morning) will be given using PHAT. This demonstration is intended as an additional followup to the tutorial, and to give audience members and conference attendees an opportunity to discuss the tools in greater depth, as well as potential research opportunities involving PHAT.

References

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