

Cognitive Adequacy in the Measurement of Melodic Similarity: Algorithmic vs. Human Judgments

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Abstract

Melodic similarity is a central concept in many sub-disciplines of musicology, as well as for many computer-based applications that deal with the classifications and retrieval of melodic material. This paper describes a research paradigm for finding an 'optimal' similarity measure out of a multitude of different approaches and algorithmic variants. The repertory used in this study are short melodies from popular (pop) songs and the empirical data for validation stem from two extensive listener experiments with expert listeners (musicology students). The different approaches to melodic-similarity measurement are first discussed and mathematically systematized. Detailed description of the listener experiments is given and the results are discussed. Strengths and weaknesses of the several tested similarity measures are outlined and an 'optimal' similarity measure for this specific melodic repertory is proposed.

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