A System For Expressive Musical Performance

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Abstract

This report details a system for computer generated expressive musical performance. The need for deviations from the notated score when performing a piece of music is explained with reference to an expert performance of a Chopin piece. 4 systems that currently implement automatic expressive performance (the Todd model, Director Musices, Parncutt’s taxonomy of accents and Gehard Widmer’s machine learning model) are summarised.

Descriptions of the 7 rules implemented from Director Musices is given. To test the implementation, 2 listening tests on 6 of these rules was carried out using a piece of Chopin and a piece of Bach. The majority of participants (7 out of 10 for Chopin and 8 out of 10 for Bach) preferred the version with no expression.

A new rule called Melodic Run is proposed. This rule modifies the duration and sound level of notes in an upwards or downwards melodic run, based on the size of the run and the melodic leap. As this can be seen to be a rule of phrasing, Melodic Run was tested against the phrasing rule used in Director Musices, Phrase Arch. 2 listening tests were carried out on a different piece of Chopin and a piece of Mendelssohn. For the Chopin piece 6 out of 10 participants preferred the version using Melodic Run. For the Mendelssohn piece, 7 out of 10 participants preferred the version using Phrase Arch.