Co-occurrence Models in Music Genre Classification

Music genre classification has been investigated using many different methods, but most of them build on probabilistic models of feature vectors $x_r$ which only represent the short time segment with index $r$ of the song. Here, three different co-occurrence models are proposed which instead consider the whole song as an integrated part of the probabilistic model. This was achieved by considering a song as a set of independent co-occurrences $(s, x_r)$ ($s$ is the song index) instead of just a set of independent $(x_r)$'s. The models were tested against two baseline classification methods on a difficult 11 genre data set with a variety of modern music. The basis was a so-called AR feature representation of the music. Besides the benefit of having proper probabilistic models of the whole song, the lowest classification test errors were found using one of the proposed models.

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