

Automatic Music Genre Classification Using Timbral Texture and Rhythmic Content Features

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Abstract— Music genre classification is an essential component for the music information retrieval system. There are two important components to be considered for better genre classification, which are audio feature extraction and classifier. This paper incorporates two different kinds of features for genre classification, timbral texture and rhythmic content features. Timbral texture contains the Mel-frequency Cepstral Coefficient (MFCC) with other several spectral features. Before choosing a timbral feature we explore which feature plays an insignificant role on genre discrimination. This facilitates the reduction of feature dimension. For the timbral features up to the 4-th order central moments and the covariance components of mutual features are considered to improve the overall classification result. For the rhythmic content the features extracted from beat histogram are selected. In the paper Extreme Learning Machine (ELM) with bagging is used as the classifier for classifying the genres. Based on the proposed feature sets and classifier, experiment is performed with well-known datasets: GTZAN with ten different music genres. The proposed method acquires better classification accuracy compared to the existing methodologies.

Keyword— music genre, bagging, covariance, timbral texture, rhythmic content



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