

Automated Music Genre Classification

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1 Introduction

Wikipedia defines music genre as a conventional category that identifies pieces of music as belonging to a shared tradition or set of conventions. Classifying songs according to genre is something that has been till now done by human tagging. The necessity for such a tagged dataset arises for any music search engine that aims to suggest similar songs to the user. Characteristics that define a song to be in a particular genre are usually somewhat abstract and often a song may have overlapping genres. To automate the task of genre classification one first needs a suitable feature vector to represent the song. We aim to classify genre independent of the metadata (artist information, lyrics etc).

2 Methodology

We aim to tackle this problem using Mel-frequency Cepstrum (MFC) features that are popular for representing sound based features. Training a Support Vector Machine [1] model using supervised learning from the GTZAN genre dataset [2] from MARSYAS website will be the primary approach. The MFC coefficients [3] represent a set of short term power spectrum characteristics of the sound and have been used in the state-of-the-art recognition and sound categorisation techniques. The dataset consists of music samples recorded under a large number of environments and so we hope to achieve a noise robust classifier for genres. The genres that we aim to classify are blues, classical, metal, rock, pop, reggae.

3 Dataset

This dataset was used for the well known paper in genre classification " Musical genre classification of audio signals " by G. Tzanetakis and P. Cook in IEEE Transactions on Audio and Speech Processing 2002. The dataset consists of 1000 audio tracks each 30 seconds long. It contains 10 genres, each represented by 100 tracks. The tracks are all 22050Hz Mono 16-bit audio files in .wav format.

References

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