Abstract

The main objective of this work is to develop a music emotion recognition technique using Mel frequency cepstral coefficient (MFCC), Auto associative neural network (AANN) and support vector machine (SVM). The emotions taken are anger, happy, sad, fear, and neutral. Music database is collected at 44.1 KHz with 16 bits per sample from various movies and websites related to music. For each emotion 15 music signals are recorded and each one is by 15sec duration. The proposed technique of music emotion recognition (MER) is done in two phases such, i) Feature extraction, and ii) Classification. Initially, music signal is given to feature extraction phase to extract MFCC features. Second the extracted features are given to Auto associative neural networks (AANN) and support vector machine (SVM) classifiers to categorize the emotions and finally their performance are compared. The experimental results show that MFCC with AANN classifier achieves a recognition rate of about 94.4% and with SVM classifier of about 85.0% thus outperforms SVM classifier.
Emotion Recognition in Music Signal using AANN and SVM


Index Terms

Computer Science

Artificial Intelligence

Keywords

Mel frequency cepstral coefficients  Auto associative neural networks  Support vector machine

Music emotion recognition