

Comparative Study of MFCC Feature with Different Machine Learning Techniques in Acoustic Scene Classification

Mie Mie Oo
mimioo.mdy@gmail.com
University of Computer Studies, Mandalay, UCSM

The task of labelling the audio sample in outdoor condition or indoor condition is called Acoustic Scene Classification (ASC). The ASC use acoustic information to imply about the context of the recorded environment. Since ASC can only apply in indoor environment in real world, a new set of strategies and classification techniques are required to consider for outdoor environment. In this paper, we present the comparative study of different machine learning classifiers with Mel-Frequency Cepstral Coefficients (MFCC) feature. We used DCASE Challenge 2016 dataset to show the properties of machine learning classifiers. There are several classifiers to address the ASC task. In this paper, we compare the properties of different classifiers: K-nearest neighbours (KNN), Support Vector Machine (SVM), Decision Tree (ID3) and Linear Discriminant Analysis by using MFCC feature. The best of classification methodology and feature extraction are essential for ASC task. In this comparative study, we extract MFCC feature from acoustic scene audio and then extracted feature is applied in different classifiers to know the advantages of classifiers for MFCC feature. This paper also proposed the MFCC-moment feature for ASC task by considering the statistical moment information of MFCC feature.