

Malaysian Vowel Recognition Based On Spectral Envelope Using Bandwidth Approach

Abstract

Automatic speech recognition (ASR) has made great strides with the development of digital signal processing hardware and software especially using English as the language of choice. In this paper, a new feature extraction method is presented to identify vowels recorded from 80 Malaysian speakers. The features are obtained from Vocal Tract Model based on Bandwidth (BW) approach. The bandwidth is determined by finding the frequency where the spectral energy is 3dB below the peak. Average gain was calculated from these bandwidths. Classification results from Bandwidth Approach were then compared with results from 14 MFCC Coefficients using BPNN (Backpropagation Neural Network), MLR (Multinomial Logistic Regression) and LDA (Linear Discriminative Analysis). Classification accuracy obtained shows Bandwidth Approach performs better than MFCC using all these classifiers.