Speech Identification using GFCC, Additive White Gaussian Noise (AWGN) and Wavelet Filter

Abstract

This paper deals with the identification of speakers identity from the given set of values of speech from the database. The major problem during the identification of speech is noisy environment which degrades the system performance during its mismatch. So one can say identification using speaker recognition is the vital issue in research. This paper tells about the various used techniques like GFCC i.e. Gamma tone Frequency Cepstral Coefficients as its speech detection algorithm and Gaussian Mixture Model (GMM) to estimate the Gaussian model parameters. This paper basically focuses on improvement of speech identification in noisy environment using Wavelet filter which are added to de-noise the speech signals. These techniques are applied on store value of databases in Attendance system application and the features of the speech are then matched from the database. Experiment are done 15 speech values saying phrases ‘Present Mam’,'Present sir','Yes mam','Yes sir' with 4 types of utterance for each phase. This Experiment shows better results for stored database oriented system and gives 85% of the correct recognition rate i.e. CORR and 73% results are given when wavelet filter are not used.
References


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Index Terms

Computer Science

Signal Processing

Keywords

Gammatone Frequency Cepstral Coefficients (GFCC), Gaussian Mixture Model (GMM), Cepstral mean normalization (CMN), Robust Speaker Identification, Additive White Gaussian Noise (AWGN), Wavelet Filter, End detection of input signal.