Abstract

In this paper, an improved strategy for automated text dependent speaker identification system has been proposed in noisy environment. The identification process incorporates the Hidden Markov Model technique with cepstral based features. To remove the background noise from the source utterance, wiener filter has been used. Different speech pre-processing techniques
such as start-end point detection algorithm, pre-emphasis filtering, frame blocking and windowing have been used to process the speech utterances. RCC, MFCC, ΔMFCC, ΔΔMFCC, LPC and LPCC have been used to extract the features. After parameterization of the speech, Discrete Hidden Markov Model has been used in the learning and identification purposes. Features are extracted by using different techniques to optimize the performance of the identification. The performance of this identification is almost different in each case. The highest speaker identification rate of 93\% for noiseless environment and 69.27\% for noisy environment have been achieved in the close set text dependent speaker identification system.

Reference


Index Terms

Computer Science  
Signal Processing
Key words

Noise Robust Speaker Identification
Discrete Hidden Markov Model
Signal Processing
Speech
Speech Feature Extraction.