Abstract

This paper emphasizes text dependent speaker identification system on Principal Component Analysis based Genetic Algorithm which deals with detecting a particular speaker from a known population under noisy environment. At first, the system prompts the user to get speech utterance. Noises are eliminated from the speech utterances by using wiener filtering technique. To extract the features from the speech, various types of feature extraction techniques such as RCC, LPCC, MFCC, ΔMFCC and ΔΔMFCC have been used. Principal Component Analysis has been used to reduce the dimensionality of the speech feature vector. To classify the speech utterances, Genetic Algorithm has been used. NOIZEOUS speech database has been used to measure the performance of this system under the condition of various SNRs. Experimental results show the superiority of the proposed close-set text dependent speaker identification system which can be used for security and access control purposes.
Reference

- Simon Doclo and Marc Moonen, “On the Output SNR of the Speech-Distortion Weighted
http://www.speech.kth.se/~rolf/gslt_papers/SvetoslavMarinov.pdf

Index Terms

Computer Science Machine Intelligence

Key words

Biometric Technology

Noise Robust Speaker Identification

Speech Feature Extraction

Principal Component Analysis

Genetic Algorithm