"SPEECH/SPEAKER RECOGNITION BY USING RASTA-PLP MODEL IN BIOMETRIC SYSTEMS"

ABSTRACT :-

A new improved method for speech/speaker recognition is presented in this paper using combination of discrete wavelet transform (DWT) and Relative Spectra Perceptual Linear Prediction (RASTA-PLP) for feature extraction. A graphical processing unit (GPU) is used for increasing the speed of computations of the neural network (NN) that acts as a classifier. Wavelet transform is applied to the speech signal. Then RASTA-PLP coefficients of the wavelet channels are calculated. Two new sets of features are generated by concatenating the two extracted features and taking the average of the concatenated vector.

The obtained feature vector is then fed to NN for classification where parallel computation for NN is introduced using GPU. The objective of the proposed method is to enhance the performance by introducing more features from the signal and applying parallel computations technique leading to an improvement in both the recognition rate and the computational speed whether for a clean or a noisy speech signal for the two proposed methods in comparison to using DWT and Mel-Frequency Cepstral Coefficients (MFCCs).

The sound or the sounds uttered through the mouth of living creatures, especially of human beings in speaking, shouting, singing etc.., The audible sound for a living creature is 5KHZ. Voice recognition technique is one of the biometric systems. The HMM (Human Markov model) Model is the existing system in speech/speaker recognition. GPU (Graphical Processing Unit) is used to describe the results appear from the voice signals in the databas