Abstract

In this paper we propose a Text Independent Speaker Identification with Finite Multivariate Generalized Gaussian Mixture Model with Hierarchical Clustering. Each speaker speech spectra are characterized with a mixture of Generalized Gaussian Distribution includes Gaussian and Laplacian distribution as a particular case. It also includes several of the platy, lepto and meso kurtic shapes of the speech spectra. The speech analysis is done with Mel Frequency Cepstral Coefficients extracted from front end process. Using the EM algorithm the model parameters are estimated. The numbers of acoustic classes associated with each speech spectra are determined through Hierarchical clustering. The performance of the proposed algorithm is studied through experimental evolution with 100 speaker’s data base and found that this algorithm outperforms the existing speaker identification algorithm with GMM. It is also observed that this algorithm performs efficiently even heterogeneous population with
small (less than 2 seconds utterances)

Reference


- R. C. Rose, E. M. Hofstetter, and D. A. Reynolds (1994), "Integrated models of speech and background with application to speaker identification in noise”,

Index Terms

Computer Science Signal Processing

Key words

Generalized Gaussian Mixture Model Mel frequency cepstral coefficients EM
Hierarchical clustering