ABSTRACT

This research aimed to introduce a completely automated Arabic isolated phone recognition system, based on Wavelet Packets Best Tree Encoding (WP-BTE). WP-BTE is used to find phoneme boundaries along speech utterance. Comparison to Mel-frequency Cepstral coefficients (MFCCs) speech feature in solving the same problem is provided. Hidden Markov Model (HMM) and Gaussian Mixtures are used for building the statistical models through this research. HTK software toolkit is utilized for implementation of the model. The process of enhancing WP-BTE which is designed by Gody[1] is provided by adding energy component to WPBTE, which is implemented in Matlab software and make an effective enhancement to recognizer accuracy. The enhancement process is completed by adding delta and acceleration, which is implemented in HTK software toolkit. EWPBTE is used to find phoneme boundaries along speech utterance. Comparison to Mel-frequency Cepstral coefficients (MFCCs) speech feature in solving the same problem is provided.