ABSTRACT

Voice Command Matching System (VCMS) is the system that matches with the commands that the user speaks on the basis of information extracted from the speech waves. This system makes it possible to use the speaker's voice to access computer commands such as opening a notepad, closing notepad, opening facebook, shutting down computer, etc.

There are two main states in this system which are recording state and operating state. In recording state, voice is inputted from the user of the system. Five sample of voices are input in this process. Feature extraction is done from input voice then the features are saved. Next, in operating state, voice is input from user and in the same way feature extraction is done as in recording state. The features are then compared with the saved features. If the features are matched with threshold, respective decision is taken meanwhile otherwise the system gives chance for retry.

The features or voiceprint is created by extracting its 13 **Mel Frequency Cepstral Coefficient** (MFCC) per frame. For computing MFCC, firstly input audio spectrum to the system which changes it into frequency domain signal and after that it computes a weighted sum of filter spectral components and finally it converts the log Mel Spectrum into Discrete Cosine Transform coefficients and hence 13 MFCCs are chosen. For matching purpose, **Euclidean Distance** (ED) & correlation method is used. ED calculates the distance between two vectors which are the command spoken and the stored voiceprints.

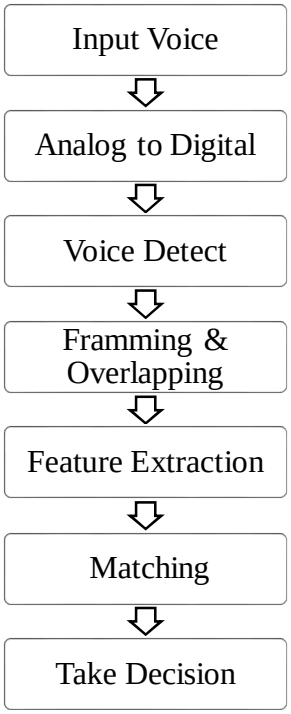

Figure: Different components of Voice Matching Process & their interactions

Keywords: *VCMS, MFCC, Euclidian distance*