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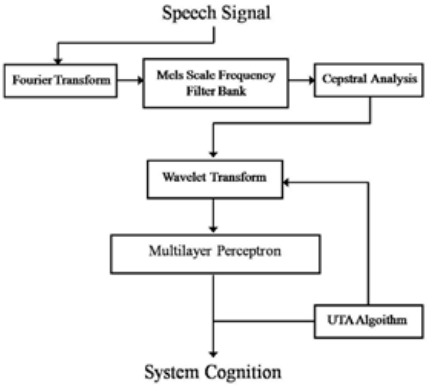
CEPSTRAL METHOD OF SPEECH RECOGNITION

A cepstrum is the result of taking the Inverse Fourier transform (FT) of the logarithm of the spectrum of a signal. There is a complex cepstrum, a real cepstrum, a power cepstrum, and phase cepstrum. The power cepstrum in particular finds applications in the analysis of human speech. speech is one of the most important tools for communication between human and his environment. Therefore manufacturing of Automatic System Recognition (ASR) is desire for him all the time. In a speech recognition system, many parameters affect the accuracy of the Recognition System.



These parameters are: dependence or independence from speaker, discrete or continues word recognition, size of vocabulary book, language constrains, colloquial speeches and recognition environment conditions. Problems such as noisy environment, incompatibility between train and test conditions, dissimilar expressing of one word by two different speakers and different pronouncing of one word by one person in several times, is led to made system without complete recognition; So resolving each of these problems is a good step toward this aim. A speech recognition algorithm is consisted of several stages that the most significant of them are feature extraction and pattern recognition. In feature extraction category, best presented algorithms are zero crossing rate, permanent frequency, cepstrum coefficient and liner prediction coefficient. Generally, there are three usual methods in speech recognition: Dynamic Time Warping (DTW), Hidden MarkovModel (HMM) and Artificial Neural Networks (ANNs).

Literature

1. *Abdulla, W.,* D. Chow, and G. Sin, "Cross-words reference template for DTW-based speech recognition systems".
2. *Gavat, O.Dumitru, C. Iancu, Gostache,* "Learning strategies in speech Recognition".

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