Abstract

In an effort to provide a more efficient representation of the speech signal, the application of the wavelet analysis is considered. This research presents an effective and robust method for extracting features for speech processing. Based on the time-frequency multi-resolution
property of wavelet transform, the input speech signal is decomposed into various frequency channels.

The major issues concerning the design of this Wavelet based speech recognition system are choosing optimal wavelets for speech signals, decomposition level in the DWT, selecting the feature vectors from the wavelet coefficients. More specifically automatic classification of various speech signals using the DWT is described and compared using different wavelets. Finally, wavelet based feature extraction system and its performance on an isolated word recognition problem are investigated. For the classification of the words, three layered feed forward network is used.

Reference


Index Terms

Computer Science

Signal Processing
Key words

Speech recognition feature extraction wavelet transform

Discrete Wavelet Transform (DWT)