Abstract

Speech recognition is a fascinating application of Digital Signal Processing and has many real-world applications. In this paper, a speech recognition system is developed for isolated spoken words using Discrete Wavelet Transforms (DWT) and Artificial Neural Networks (ANN). Speech signals are one-dimensional and are random in nature. Isolated words from Malayalam, one of the four major Dravidian languages of southern India are chosen for recognition. Daubechies wavelets are employed here. A multi-layer neural network trained with back propagation training algorithm is used for classification purpose. The proposed method is implemented for 50 speakers uttering 20 isolated words each. The experimental results show good recognition accuracy and the efficiency of combining these two techniques.

References

- Lawrence R., 1997, Applications of Speech Recognition in the Area of
Telecommunications, Proceedings of IEEE Workshop on Automatic Speech Recognition and Understanding.

Index Terms

Computer Science
Signal Processing
Keywords
Discrete Wavelet Transforms  Artificial Neural Networks  Speech Database
Classification
Daubechies Wavelets.