

Abstract

Voice Recognition using Distributed Artificial Neural Network for Multiresolution Wavelet Transform Decomposition

Bandhit Suksiri

This paper presents a new voice recognition method named as Signal Clustering Neural Network by simple ANN model with a single channel microphone and Wavelet Transform feature extractions, which is achieved to increase the high recognition rates up to 95 per cent instead of Short-time Fourier Transform feature extractions at noises up to 70 dB as in the normal conversation background noises. The performance evaluation has been demonstrated in terms of correct recognition rate, maximum noise power of interfering sounds, Receiver Operating Characteristic and Detection Error Tradeoff curves. The proposed method offers a potential alternative to intelligence voice recognition system in computational linguistics and speech controlled robot application.

key words Discrete Wavelet Transform, Voice Recognition, Feature Extractions, Artificial Neural Network, Signal Clustering Neural Network.