Abstract
This paper presents a novel method for isolated English word recognition based on energy and zero crossing features with vector quantization. This isolated word recognition method consists of two phases, feature extraction phase and recognition phase. In feature extraction, end points are detected and noise is removed using end point detection algorithm, a feature vector is obtained by combining the energy and zero cross rate into a different feature vector dimensions of 8, 10 and 12. Recognition phase consists of two steps, feature training and testing, in feature training, codebooks for each reference samples are generated using LBG and KPE Vector Quantization algorithm. For testing Euclidean distance is calculated between test sample feature vector and codebook of all reference speech samples. Speech sample with minimum average distance is selected. Experimental results showed that the maximum recognition rate of 82% is obtained for KPE with codebook size of 64.

Reference

Speech Recognition using Energy and Zero Crossing Features with Kekre’s Proportionate Error Algorithm


Index Terms
Computer Science Wireless

Key words
Isolated Speech Recognition
Vector Quantization

Code vector
Codebook
Euclidean Distance