

Abstract

Although speech recognition plays a vital role in the modern communication systems, only few studies have investigated speech recognition of children. Children's speech recognition is more challenging than adult's speech recognition; because of the dynamic and inconsistent nature of children's speech. This study examined a speaker-independent recognition of 6 Malay vowels of Malay children using two different Neural Network (NN) architectures: Feed-forward Back Propagation (FFBP) and Elman. Speech samples were collected from 360 Malay children between 7 and 12 years old, and Linear Predictive Coding (LPC) was used for extracting the speech features. The data was divided according to 3-fold cross validation, and then used for training and testing the neural networks. Different experiments were conducted to determine the optimal performance of the networks in terms of hidden neurons number and signal length. The findings showed that FFBP and Elman NNs achieved a recognition rate of 83.98 and 82.55%, respectively.