Abstract

There are a plenty of research experiments and achieved results in various languages throughout the world regarding speech recognition. But, in Bangla language, early researchers in this field had qualified success, though the scenario is being changed in recent years. This research work aims at developing a neural network based connected digit recognition system in Bangla language. Firstly, a Bangla digit corpus has been developed comprising of male and female speakers. Speech is recorded in connected fashion and words are extracted through automatic segmentation. Then MFCC features of the segmented words are calculated and these feature values are sent as the input to the back-propagation neural network (BPNN). BPNN learning algorithm is used to train the network. The required time to train the network, number of hidden layers, error threshold and number of epochs are considered while training the network to reach the best possible recognition accuracy. This proposed system has been implemented using object oriented programming and the achieved recognition accuracy is very much satisfactory and consistent. The network has been tested for three different setups and the best recognition accuracy achieved for digit dataset is 98.46%.
References

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Index Terms

Computer Science  Networks

Keywords

Connected Speech Recognition, Bangla Speech Recognition, Bangla Digits, Back-Propagation
Learning Algorithm, MFCC.