

Implementation of Artificial Neural Network to Recognize Numbers from Voice



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Abstract Speech recognition is a subjective phenomenon which also an important part of human–machine interaction which still faces a lot of problem. The purpose of this work is to investigate and apply the artificial neural network (ANN) to recognise numbers using voice. In this work, MATLAB neural network toolbox is used to create, train and simulate the ANN. The dataset consisted a voice from ‘one’ to ‘five’ undergo windowing process to view a short time segment of a longer signal and analyse its frequency content and then being filtered by using a band-pass filter to remove the unwanted noise and been converted into histograms as an input for the network. From the experiments, the highest accuracy level obtained is 72.5% by using histograms as Feature Extraction.

Keywords Artificial neural network · Speech recognition · Band-pass filter · Histogram

1 Introduction

Speech can be considered as a gainful or useful interface to communicate with machines. Despite the good progress, speech recognition (SR) is yet confronting a great deal of issues. Those issues are because of the varieties existed in human including the age, sex, and emotions state of the human which will bring about the differences in their pronunciation of various people. Most of the time, human itself can causes the addition noise [1].

For the communication with machines, human could utilize speech as a valuable interface. Men consistently need to achieve natural, grasping, and concurrent computing. Elham S. Salam [2] looked at the impact of visual elements on the execution of speech recognition system of confusion individuals. Speech recognition also permits the changing of text from speech. Owing to the significance of speech

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