ABSTRACT

The development of science and technology also affects the capabilities and dimensions of the device on human life. The development of science and technology helped give birth to a wide range of algorithms for the purposes of optimization, automation, and machine learning.

One machine learning algorithms are quite famous is the Neural Network (ANN). Perform matching algorithm is used to input a new one based on learning outcomes would be the introduction of data. With this capability, this algorithm can be used in fields such as data classification and prediction analysis of financial, digital image processing to pattern matching.

In this Final Project, the author has been implemented a speech recognition to the control system on the helmet assistant with Neural Network Backpropagation classifier for human's audio signals. Audio signal processing is done by using algorithms to extract signal characteristics by Mel Frequency Cepstral Coefficients (MFCC). Implementation is done on a Single Board Computer as computational media on the unity of the automation system is embedded in the helmet assistant. The Accuration of speech recognition is reached in real time respond in 1.34775 seconds and percentage abaout 85% as trigger for activation servo motor as visor driver and LED as lightning.

Keywords: *Neural Networks, MFCC, Single Board Computer,helmet assistant*