ABSTRACT

Humans have emotions or feelings that make them do certain activities, some examples of emotions from someone who will be detected include happiness, anger, sadness, and shock. These emotions are usually called archetypal emotions. The voice signal is presented with several features, namely: the Linear Predictive Coding (LPC) feature, a technology that was discovered several years ago. Among the technologies that continue to be developed are the technology of recognizing emotion through sound signals.

In this thesis through the analysis of human voice frequencies, an emotional detection research through one's voice is carried out using the 16th order Linear Predictive Coding (LPC) method with the classification of Backpropagation in Artificial Neural Networks. The selection of the method is intended to divide human voice data into several classes based on the pattern and classify it.

The purpose of this study is to detect human emotions by looking at the parameters that are sought for the best accuracy and optimization of the system. The test results showed that the highest accuracy obtained was 75% using 6 statistical features namely, mean, standard deviation, skewness, variance, kurtosis, and entropy from 40 training data and 12 test data and the best parameters obtained were 12 cepstral windows, 12 matrix length. Tests on the cepstral window have 1 number that gets the best accuracy on the system, namely at number 12 with 85% accuracy, and testing at maximum matrix length there is 1 number that gets the best accuracy of 87.5%.

Keywords: Emotion, Linear Predictive Coding (LPC), Backpropagation, Artificial Neural Networks (ANN).