

## ABSTRACT

Various researches have shown advances in technology could lead to the development of the manner of distributing a message that can be inserted with evil intention. Therefore, to oversee the distribution of a message that is done silently so is needed a method that can detect the presence of the hidden message. Steganalysis or detection of hidden message in the media can be used as a method to identify and secure the message.

Final project of steganalysis will be simulated in digital audio and digital audio type that be detected is digital audio with a WAV format. The audio is processed using the signal analysis in the time domain or frequency that can be observed from feature extraction value of statistic. Discrete Cosine Transform (DCT) is used to convert the time domain to the frequency domain and to determine of important features from different voice signal. The result of the statistical feature as an input to the Principal Component Analysis (PCA) to reduce the dimension from result of feature extraction. Then, The Artificial Neural Network (ANN) is used as classifier to distinguish of the cover audio and stego audio.

System outputs is a condition that decide an audio files contain or not contain secret message. The result of testing shows that the accuracy of type of message insertion method is DCT 62.42%, DWT 74.00%, DWT-SVD 56.00%, ELSB 67.34%, and LSB 59.92%. The accuracy is obtained from testing 30 original audio wav and 30 stego audio wav with the insertion of 20 letter message and use three features are standard deviation, *skewness*, dan *kurtosis*. Performance of MSE :  $10^{-5}$ , neurons per hidden layer : 50, lr : 0.5, and *epoch* : 200. Time of computation in steganalysis audio system is 5.7045 second.

**Keywords** : WAV, *Steganalysis*, *Discrete Cosine Transform* (DCT), *Principal Component Analysis* (PCA), *Artificial Neural Network* (ANN).