ABSTRACT

In this era, various kind of communication way can be done, one of them is hiding message into another object. This is called steganography. For controlling a possibility of steganography negative impact, then it is required steganalysis.

The object of steganalysis is to detect message hidden in cover image, such as digital image.In this research, we present a steganalysis method that can detect an existing hidden message in a digital image using DCT (Discrete Cosine Transform) method and it is used PCA to reduce the digital image. K-Nearest Neighboor to classify.

The experiment result accuracy are 64,5% for image with size 128, 64% for image with size 256, and 58,5% for image with size 512. For the effect of layer experiment to the performance accuracy are taken the best accuracy result as big as 66% for image with size 256 in the red layer, 64% for image with size 256 in the green layer, and 78% for image with size 128 in the blue layer. While the effect of K value used in K-NN to the performance accuracy are 50,4% for K=1, 56,75% for K=3, 67,125% for K=5, 70,084% for K=7, and 64,91% for K=9. The effect of sort of K-NN used to the performance accuracy is 70,6% for Euclidean K-NN, 69,677% for Cityblock K-NN, 70,7% for Cosine K-NN, and 52,467% for Correlation. Beside that, for the experiment of message to the performance accuracy are taken the best accuracy as big as 100 % for full message insertion, and 3 KB message insertion.with the image size is 128.

According to the experiment that had been done, can be conclude that the best utility can be used when using cosine distance with k=7 in 128 image size.

Keyword : *Steganalysis, Discrete Cosine Transform (DCT), K-Nearest Neighbor (K-NN), Principal Component Anlysis (PCA)*