

ABSTRACT

Within this final project a blind steganography will be designed and implemented in digital images using Gifshuffle algorithm. Graphics Interchange Format (GIF) is a format that frequently used because of its small size and there are plenty numbers of image editor softwares that have been supporting this small-sized image. GIF has small size because it keeps the amount of the colors up to 256 colors, so that it can save the file size.

Gifshuffle algorithm is developed by Matthew Kwan, it is one of steganography algorithms that uses a file image with the GIF format. Gifshuffle algorithm contains encoding and decoding process. This algorithm performs the insertion of a message by replacing the sequence of palette colors which found in the GIF image. The application that made in this research is not only just implementing the Gifshuffle algorithm, but also implementing the Huffman algorithm as a compression of input messages, so that the messages can be inserted more

After performing the design and implementation, the stego images are tested in order to see the resistance of attack. The type of attacks that tested are rotate (scale rotation of 30 °: 45 °: 60 °: 90 °), rescale (rescale value of 0.25: 0.5: 0.75: 0.99), and salt and pepper noise (noise scale value of 0:05: 0.1: 0.25: 0.5).

From the subjective and objective measurement results, Gifshuffle algorithm shows that the average stego image quality MSE system is 0 and the PSNR is infinity. After performing some attacks, such as Rotate, Rescale, and giving Salt and Pepper Noise, it appears that in the Rotate, Rescale, Salt and Pepper noise, the extracted messages are back to normal, it's because the order of the color palette has not changed.

Keywords: Steganography, Graphics Interchange Format (GIF), Gifshuffle, Digital Image