Abstract

Steganography is the art of hidden writing and secret communication. The goal of Steganography is to hide a message in a multimedia objet such as image. Steganalysis is the art and science of detecting such the hidden messages. The Gray level Co-occurrence matrix (GLCM) is the matrix containing information about the relationship between values of adjacent pixel in an image. In this paper, we extract features from GLCM that are different between cover image (image without hidden information) and stego image (image with hidden information). In the proposed algorithm, first, we use a combined method of steganography based on both location and conversion to hide the information in the original image and call it image-steg1 image. Then, we hide the information in image-steg1 again and call it image-steg2. Using GLCM matrix properties, we investigate some different features in the GLCM of the original image and stego images. We can extract features that are different between these images. Features are used for training neural network and the classification step was accomplished using four layers Multi Layer Perceptron (MLP) neural network. We tested our algorithm on 800 standard image databases and we detected 80% of stego images. Therefore, our proposed algorithm efficiency is 80%.
References

- BSD available at ftp://www.eecs.berkeley.edu/Research/Projects/CS/vision/grouping/fg.

**Index Terms**

Computer Science  
Data Mining

**Keywords**

Steganography  
Steganalysis  
GLCM  
Multi Layer Perceptron Neural Network