Abstract

Data hiding is a method of concealing secret data into a cover media and preventing a spectator from being aware of the existence of the hidden message. According to the problems of steganography, the main effort is to provide a better imperceptibility of stego-image that can be done by decreasing distortion of image. One of the popular techniques in data hiding is steganography in which the simple method for image hiding is the Least Significant Bit (LSB) substitution method. Wu et al. proposed two image hiding techniques to improve the quality of the stego-image [1]. The first one is to find the best block matching matrix and the other one is to find the optimal substitution matrices. The proposed method utilizes particle Swarm optimization (PSO) for finding the best pixel locations, and then the secret image is transformed to a new secret image. Optimal Pixel Adjustment (OPA) method is applied to further increase the quality of image. Results are then compared with those obtained by Simple LSB, Wang's et al. method, Wu's et al. method. The experimental results confirmed that PSNR of the proposed method is higher than mentioned methods which mean the imperceptibility of the image improves. Also the results illustrate that the proposed approach is robust against chi-square attack.
References


Index Terms

Computer Science

Image Processing

Keywords

Data hiding image steganography Particle Swarm optimization