Abstract

A new high capacity and robust image steganography method based on human vision sensitivity is introduced. Kohonen Neural network is trained according to the contrast sensitivity of pixels present in cover image. Trained network classify the pixels of cover image in different levels of sensitivity. Data embedding is performed by LSB substitution method, which replaces the least significant bits of cover image with secret information that would be embedded. But prior to embedding, cryptography is applied on text. We used Optimal Pixel Adjustment Process (OPAP) to obtain an optimal mapping function to reduce the difference error between the original image and the stego-image, therefore improving the hiding capacity with low distortions. On the destination side, the original image is not needed for extracting the embedded data. Convolution Code are also used to improve performance of existing algorithm over binary symmetric channel (BSC). It is observed that the capacity and security is increased with acceptable PSNR in the proposed algorithm compared to the existing algorithm.
- Anil et. al. 2007, Robust and Secret Data Transmission Over the Noisy Channel in proceeding of International conference on signal processing and Networking, IEEE, pp. 199-203
- Zhang Jiajia et. al, 2009, "A Steganographic Method based on SOM and Wavelet Contrast"; in proceeding of International Conference on Artificial Intelligence and Computational Intelligence, pp. 481-484.

**Index Terms**

Computer Science  
Security

**Keywords**

OPAP  
BSC  
Convolution Codes