Abstract

Information concealment is of paramount importance in information and communication security. For the protection of information and intellectual property, effective techniques are needed. Steganography is the art of writing concealed information in a way that it does not arouse suspicion about its existence. This ensures that only the sender and the recipient are aware of the concealed message existence. Capacity and Stego image imperceptibility are the most crucial aspects. This paper provides a heuristic approach of choosing the right-most regions for embedding that ensure minimum changes to stego object. Then, different percentages of secret data will be hidden on the cluster based on the characteristic of the region. Therefore, the sharp edge region will hide more data while the smooth will hide data. The proposed approach use K-mean clustering to categorized the segmentation and then genetic algorithm will be used to boost the PSNR (peak signal to-noise ratio) value while optimizing high capacity information. The obtained stego object is virtually indistinguishable from the cover object. The experimental results show a significant enhancement over other previous work.
Computer Science

Index Terms
Security

Keywords
Steganography  LSB  K-mean clustering  GA