

A Hash Based Approach for Secure Keyless Image Steganography in Lossless RGB Images

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Abstract– This paper proposes an improved steganography approach for hiding text messages in lossless RGB images. The objective of this work is to increase the security level and to improve the storage capacity with compression techniques. The security level is increased by randomly distributing the text message over the entire image instead of clustering within specific image portions. Storage capacity is increased by utilizing all the color channels for storing information and providing the source text message compression. The degradation of the images can be minimized by changing only one least significant bit per color channel for hiding the message, incurring a very little change in the original image. Using steganography alone with simple LSB has a potential problem that the secret message is easily detectable from the histogram analysis method. To improve the security as well as the image embedding capacity indirectly, a compression based scheme is introduced. Various tests done to check the storage capacity and message distribution show the superiority of the proposed approach with respect to other existing approaches.

Keywords- Keyless Steganography, lossless RGB images, hash based, embedding