

Data Hiding Technique Based on LSB Matching towards High Imperceptibility

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ABSTRACT: *Steganography is the art and science of hiding data. The secret message is hidden in such a way that the observer cannot detect any changes in the original image. In this paper, we propose an efficient steganographic scheme which provides high capacity of secret data as well as imperceptibility of stego image. Using fixed number (i.e., max) as the upper limit criteria for embedding, the target pixels selected for embedding are based on the number of bits which matches between the secret data bits and the cover pixel bits. As an indicator to determine which pixel is used for embedding, the first bit is reversed (negated). The experimental results over greyscale images showed, the ability of embedding high data capacity with preserving stego image quality. Efficiency of the model is evaluated using two metrics, the Peak-Signal-to-Noise Ratio (PSNR) value as one of the evaluation metrics, and the visual effects over the cover image as the second. Results are drawn and compared with one of the most common techniques (Classic least-significant bit, LSB) and accordingly showed significant advancement.*

KEYWORDS: *Steganography, Data Hiding, Data Security, LSB (least-significant bit) Substitution, LSB Matching.*