

# Data hiding in a digital cover image using chaotic maps and LSB technique

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## Abstract:

This paper investigates several alternative schemes for hiding a grayscale image in a colored cover image in the spatial domain. First, we consider the use of one-dimensional (Tent map) versus two-dimensional (Baker's map) chaotic maps for the selection of the set of pixels where the secret message bits are to be embedded. The red color channel of the cover image for the formerly selected pixels is affected by the embedding process since the eye is not very sensitive for slight variations in this color channel. Next, two LSB embedding schemes are examined; namely, embedding one bit per pixel and embedding two bits per pixel. The preliminary results ensure that, to eavesdroppers, there will be almost no suspicion regarding the existence of a secret message hidden within the sent image since the peak-signal-to-noise-ratio (PSNR) is high and the mean-squared-error (MSE) is low for the different alternatives investigated. However, there is a clear impact on the time required for the embedding process if two-dimensional maps and/or one bit per pixel LSB technique are used. © 2017 IEEE.

## Reference:

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