

## Robust Data Image Watermarking for Data Security

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**Abstract :** In this paper, we propose secure and robust data hiding algorithm based on DCT by Arnold transform and chaotic sequence. The watermark image is scrambled by Arnold cat map to increases its security and then the chaotic map is used for watermark signal spread in middle band of DCT coefficients of the cover image The chaotic map can be used as pseudo-random generator for digital data hiding, to increase security and robustness .Performance evaluation for robustness and imperceptibility of proposed algorithm has been made using bit error rate (BER), normalized correlation (NC), and peak signal to noise ratio (PSNR) value for different watermark and cover images such as Lena, Girl, Tank images and gain factor .We use a binary logo image and text image as watermark. The experimental results demonstrate that the proposed algorithm achieves higher security and robustness against JPEG compression as well as other attacks such as addition of noise, low pass filtering and cropping attacks compared to other existing algorithm using DCT coefficients. Moreover, to recover watermarks in proposed algorithm, there is no need to original cover image.

**Keywords :** data hiding, watermarking, DCT, chaotic sequence, arnold transforms

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