عنوان مقاله:

Image Encryption Using Tent Chaotic Map and Arnold Cat Map

محل انتشار:

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خلاصه مقاله:

In this paper, a new algorithm for image encryption using chaotic tent map and Arnold cat map is proposed. This algorithm consists of two major phases, permutation and substitution. In the permutation phase, Arnold cat transform is used. A pseudo random image is produced using the chaotic tent map. In the substitution phase, the permuted image is Exclusively ORed to this pseudo random image in order to generate encrypted images. A computer simulation is used to evaluate the proposed algorithm and to compare its results to encrypted images of other methods. The criteria for these comparisons are chi-square test of histogram, correlation coefficients of pixels, NPCR (number of pixel change rate), UACI (unified average changing intensity), MSE (mean square error) and MAE (mean absolute error). These comparisons show that the proposed chaotic image encryption method has a high performance and security.

کلمات کلیدی:

Image encryption, Permutation, Substitution, Arnold Cat map, Chaotic Tent map

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