

عنوان مقاله:

Image Encryption Using Genetic Algorithm

محل انتشار:

هشتمین کنفرانس ماشین بینایی و پردازش تصویر ایران (سال: 1392)

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خلاصه مقاله:

This paper presents a new method for image encryption using Genetic algorithm (GA). First, rows and columns of the input image are dislocated randomly. Then, the obtained image is divided into four equal sized sub-images. After selecting one of these sub-images accidentally, two pixels are chosen from it as GA initial population. Cross-over and mutation operations are applied on the binary values of these selected pixels. Then the image is reconstructed in the reverse manner. If entropy of the result image increases, the current sub-image is utilized for the next step. Otherwise, another sub-image is chosen randomly and the same process is applied. Randomness of the encrypted image is measured by entropy, correlation coefficients and histogram analysis. Experimental results show that the proposed method can be used effectively for image encryption.

کلمات کلیدی:

image encryption; genetic algorithm; image entropy; correlation coefficients; histogram analysis

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