

عنوان مقاله:

Image Encryption by Using Combination of DNA Sequence and Lattice Map

محل انتشار:

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نویسندگان:

Ali Asghar Abbasi - Department of Computer Engineering, Shahr-e-Qods Branch, Islamic Azad University, Tehran, Iran

Mahdi Mazinani - Department of Electrical Engineering, Shahr-e-Qods Branch, Islamic Azad University, Tehran, Iran

Rahil Hosseini - Department of Computer Engineering, Shahr-e-Qods Branch, Islamic Azad University, Tehran, Iran

خلاصه مقاله:

In recent years, the advancement of digital technology has led to an increase in data transmission on the Internet. Security of images is one of the biggest concern of many researchers. Therefore, numerous algorithms have been presented for image encryption. An efficient encryption algorithm should have high security and low search time along with high complexity. DNA encryption is one of the fastest emerging technologies performing based on the concepts of DNA computing and can be used for data storage and transfer. Very high speed and minimum memory and power requirements in the DNA calculations are of the advantages of this new encryption algorithm. In this study, a new encryption algorithm has been proposed for grayscale digital images using DNA algorithm and lattice map function. In the first step, the initial value of the Logistic Map function has been obtained from a 120-bit key using the proposed method, then in the second stage, the original image was encrypted with the Lattice Map function sequence using the logistic map function sequence generated in the previous step and the DNA rules. The results of the simulations showed a high level of resistance and security against statistical attacks, so that the entropy of the proposed method was obtained as 7.9996.

کلمات کلیدی:

Chaos Function, Lattice Map, DNA Sequence

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