Abstract

The traditional chaos algorithm is based on the logistic maps and has some drawbacks. In order to enhance the security, improved chaos system is used. It is based on location Transform and pixel value alteration using random sequence. The proposed algorithm shuffles the image based on the chaotic sequence and change the value of each pixel. The key generates 16 chaotic sequences from given sequence using a secret look-up matrix. Key used for encryption improves efficiency by acting on n sub-parts of image. The Matlab is used for simulation of image encryption algorithm. The algorithm's safety is analyzed from different aspects such as histogram comparison, correlation coefficient and secret key sensitivity. The algorithm proposed is robust against statistical attack, brute force attack and plain text attack.

References

- Philip P. Dang and Paul M. Chau. Image Encryption for Secure Internet Multimedia
- HuaZhong Based on the chaotic image encryption technology research [D]. Changsha Polytechnic University, Master's Thesis, Hunan, Changsha, 5-6.
- Ai-hong Zhu and Lian Liu. Improving for chaos Image Encryption Algorithm based on logistic maps[C]. Environmental Science and Information Application Technology (ESIAT), 2010 International Conference. Page(s): c1 - c4

Index Terms

Computer Science
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Keywords

Image Encryption chaotic sequence location transform random sequence