Abstract

Encryption is used to securely communicate data in open networks. Each type of data has its own structures; therefore according to the data the different techniques should be used to defend confidential data. Among them digital images are also very popular to carry confidential information in untrusted networks. For pleasing the defense of data hiding and communication over network, the proposed system uses cryptographic algorithm along with Steganography. In the proposed system, the file which user want to make secure is firstly compressed to shrink in size and then the compressed data is altered into cipher text by using AES cryptographic algorithm and then the encrypted data is concealed in the image. In order to hide the information over the image in complex manner the genetic algorithm based technique is implemented which is used to evaluate the valuable pixels where the data can be hide in a secure manner. In addition of that, for hiding the information in images, the LSB (least significant bits) based steganographic method is used after the selection of eligible pixels. The implementation of the anticipated technique is performed using JAVA technology and for performance evaluation the time and space complexity is computed. In addition of that a
comparative study of the proposed technique using the image steganographic technique is also performed in terms of PSNR and MSE. According to the computed performance the proposed technique is adoptable for hiding information in image securely additionally that consumes less space complexity.

References

Index Terms

Computer Science Algorithms

Keywords

Steganography, AES cryptographic algorithm, LSB, genetic algorithm.