JISSec
Journal of Information System Security

COMPARATIVE STUDY OF LSB AND DWT BASED STEGANOGRAPHY COMBINED WITH ARNOLD TRANSFORMATION FOR IMAGE SECURITY

Shruti Gulati[1], Adil Bashir[2] and Ajaz Hussain Mir[3]

[1]Kali Charan Nigam Institute of Technology, India, [2]Islamic University of Science and Technology, Kashmir, India, [3]National Institute of Technology Srinagar, India

Journal of Information System Security is a publication of the Information Institute. The JISSec mission is to significantly expand the domain of information system security research to a wide and eclectic audience of academics, consultants and executives who are involved in the management of security and generally maintaining the integrity of the business operations.

ISSN: 1551-0123
Volume 18, Issue 1

www.jissec.org

Abstract

The transfer of images over the internet has led to a security concern where confidential images need to be protected from unauthorized access. In the growing technological era, almost everyone shares his/her personal information including images over the internet with other users or to a database repository which attract hackers to take undue advantage from this information. Security offered to images like blue print of organization projects, confidential images to the Army or of organization's interest using image processing techniques has proven to be beneficial. In this paper, two steganographic methods i.e. LSB and DWT are combined with Arnold Transformation. The results of Arnold transformed LSB and DWT images are analyzed and compared on the basis of image quality parameters. It has been found that Arnold-DWT take 11.10% and 11.81% more encryption and decryption time respectively than Arnold-LSB. Our focus is to scramble the image information to a level where it becomes difficult for an intruder to obtain actual transferred images.

Keywords: Image Steganography, Arnold Transformation, LSB Technique, DWT Technique.