IIT Bhubaneswar

School of Electrical Sciences
Computer Sc. & Engineering
Security and Forensics Lab-II

Spring 2021

Lab Schedule: Tue (9AM-12PM)
Instructor: Debi Prosad Dogra (dpdogra@iitbbs.ac.in)
Teaching Assistant: Shreetam and Nihar

Assignment 1

Points: 100

Deadline: 3-2-2021 (**midnight**)

1. Design and implement efficient steganography algorithms that will hide and retrieve a secret message inside a cover image. The cover image can be a single channel (grey scale) or 3-channels (RGB) image. Depending on the type of the input cover image, the algorithm will intelligently select the bit positions to insert the secret message. Only LSB substitution is allowed to hide the secret message within the cover image. Your objective should be to intelligently select a set of bit positions that will minimize the loss in visual quality of the cover image after the message embedding is done. The visual quality loss will be measured using PSNR value. The higher the PSNR, better the algorithm. You are supposed to provide the encryption and decryption algorithms and the secret key to insert and extract the secret message. The secret text message will be given by the user during execution. If your algorithm is unable to hide the text message due to any reason, possible reasons should be printed.

Submission files:

a) A documentation in PDF by clearly mentioning the encryption and decryption algorithms through pseudocodes and flow charts.
b) The source codes (both encryption and decryption) in Python or C/C++.
c) The secret key that will be used for encryption and decryption.
d) A readme file describing how to execute the codes.

N.B: The two cover images are attached with this assignment and only these images need to be used for encryption and decryption depending on the user's choice. **Copying of codes and report will be strictly handled by penalizing**.