

This main goal of this assignment is to evaluate your understanding of the message hiding specially steganography technique and implementing one of the simplest methods in this area namely LSB.

Overview:

Steganography is the practice of concealing a file, message, image, or video within another file, message, image, or video. It involves the breakdown of these files into their underlying bits (0's and 1's).

For example, take a JPEG picture and its individual pixels. Each pixel can be represented via a 3-tuple of RGB values each in the range 0-255. Values in the range 0-255 are stored in 8 bits (1 byte). The least significant bit (LSB) in a byte is the rightmost digit.

For example, in the byte 10010011, the LSB is shown in bold.

If we wanted to encode the bit 0 in this byte, we change the LSB to 0. Note that this won't gravely change the color in the RGB encoding since the color value is at most 1 value apart.

Through this method, we can modify the LSB of each pixel's RGB value permitting up to 3 bits of encoded values to be stored in the pixel. Therefore, a long message of ASCII characters can be broken down into their respective bits and then stored in a picture. Decoding would be done by taking the LSB of each pixel in the picture and re-stitching the data back together.

Description of Simple Steganography Algorithms:

<http://stackoverflow.com/questions/3018086/simple-basic-steganography-algorithms-and-methods>

Steganography DIY page:

<http://binary-universe.net/index.php?language=e>

Request:

Write a code (Python, Java, C, ...) that implements a steganography algorithm for a media format of your choice (such as BMP or JPG). Your module should be able to hide and extract a message into a copy of the media format.

Presentation Instructions:

- Send your source code
- Send two copy of one image which are the original and steg one
- Your secret message in the test image is "Digital Forensics Course"