Image Signal Processing Project #01

Prof: Yong Seok Heo

2022. 05. 23

· Due date: **2022. 06. 12** (**Sun 23:59)**

· Submit your homework to the Ajoubb

· To submit: <**Matlab code** + **Report**>
(Compress the whole files with the name of "학번_이름_Project01.zip")

[1] (60 pts) You need to transmit an 8-bit gray scale image "Penguins_gray.png" hiding it in a 3-channel color image "lena.png". You need to send 2 bits of the gray scale image in the red channel, 2 bits in the green channel and 2 in the blue channel of the color image. Of course, you will keep the most significant 6 bits. Thus, you need to replace each 2 bits of the gray-scale image with the least significant bits in the original color channel. So in total you will be sending the 6 out of 8 bits from the gray scale image to the encoded color image. Write a matlab code the task described above, and reconstruct the hiding gray-scale image from the encoded color image.

* Note that you can use built-in matlab functions such as bitshift, bitor, bitand, etc.

[2] (10 pts) Compute 1) PSNR between discuss the original gray-scale image and the reconstructed gray image 2) PSNR between the original color image and the encoded color image.

* You can use built-in matlab function for computing PSNR.

[3] (30 pts) Discuss your results.

*** 제출한 코드는 그대로 실행 시 에러 없이 실행이 되어야 합니다. 만약 실행 불가시 감점.**