Computer Vision 404B

Assignment 1: Image filtering, processing, edge detection, hybrid images

Due time: April 5th, 2021 , 11:59 pm

Given standard images (grayscale and color)

A) Tasks to implement

1- Add additive noise to the image.

- For example: Uniform, Gaussian and salt & pepper noise.

2- Filter the noisy image using the following low pass filters.

-Average, Gaussian and median filters.

3- Detect edges in the image using the following masks

-Sobel , Roberts , Prewitt and Canny edge detectors.

4- Draw histogram and distribution curve.

5- Equalize the image.

6- Normalize the image.

7- Local and global thresholding.

8- Transformation from color image to gray scale image and plot of R, G, and B histograms with its distribution function (cumulative curve that you use it for mapping and histogram equalization).

9- Frequency domain filters (high pass and low pass).

10- Hybrid images.

B) Report all of the above to TA's (One Zip file including report, codes, results, etc).