**Assignment 2**

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1. Take any greyscale image (or any color image, convert it into a greyscale image). Transform the image into frequency domain using FFT. Also transform the Gaussian 3X3 mask into frequency domain. Apply the filter in the frequency domain and then apply inverse FFT to get the smoothed image.
2. Take the result image from question 1. Transform it to frequency domain again. Apply Sobel operator on it, and transform back to spatial domain.
3. Take 2 greyscale images where both the images should contain an object occupying more than 60% of the image. Transform the images to frequency domain. Apply magnitude of image 1 on phase of image 2 and transform the result image. Also, apply magnitude of image 2 on phase of image 1, and transform the result image.
4. Take any image. Apply Gaussian filter on the image to smooth it. Then downsample the image to get 1/8 of the actual image. Again upscale the image to the previous size. Take the difference of the two images.

Please complete the assignments and submit the zip file to the specified link in the BB (link will be notified to you) by 23rd September 1PM. Best,