EE 645 3D Computer Vision

Assignment - 1 Report, S Deepak Narayanan, 16110142

Programming Language : *Python 3.6.6*

Note: I have used a resizing policy for scaling the images if the number of rows exceed 1500 and the number of columns exceed 1000 to a scale factor of 0.3 to both the row and the column. If the image is smaller than that, then there is no scaling. For Question 1, the inputs have been assumed to be color images.

Note: The first image for the first question is 'img1.jpg' - Chosen by Default. The second image for the first question is 'img2.jpg' - one needs to choose it to check the output.

Note: The first image of the second question is 'img3.jpg' - Chosen by Default. The second image for second question is 'img2.jpg' - one needs to choose it to check the output.

Note: The Kernel Values are in the files - "STD_1.txt", "STD_3.txt", "STD_5.txt" for Question 1 and in the file "DoG Filter.txt" for Question 2.

Question 1:

These were the images obtained after resizing and convolving with Gaussians with the given standard deviations.

Image 1

Original Image

1. Standard Deviation 1

2. Standard Deviation 3

3. Standard Deviation 20

Image 2
Original Image

With Standard Deviation 1

With Standard Deviation 3

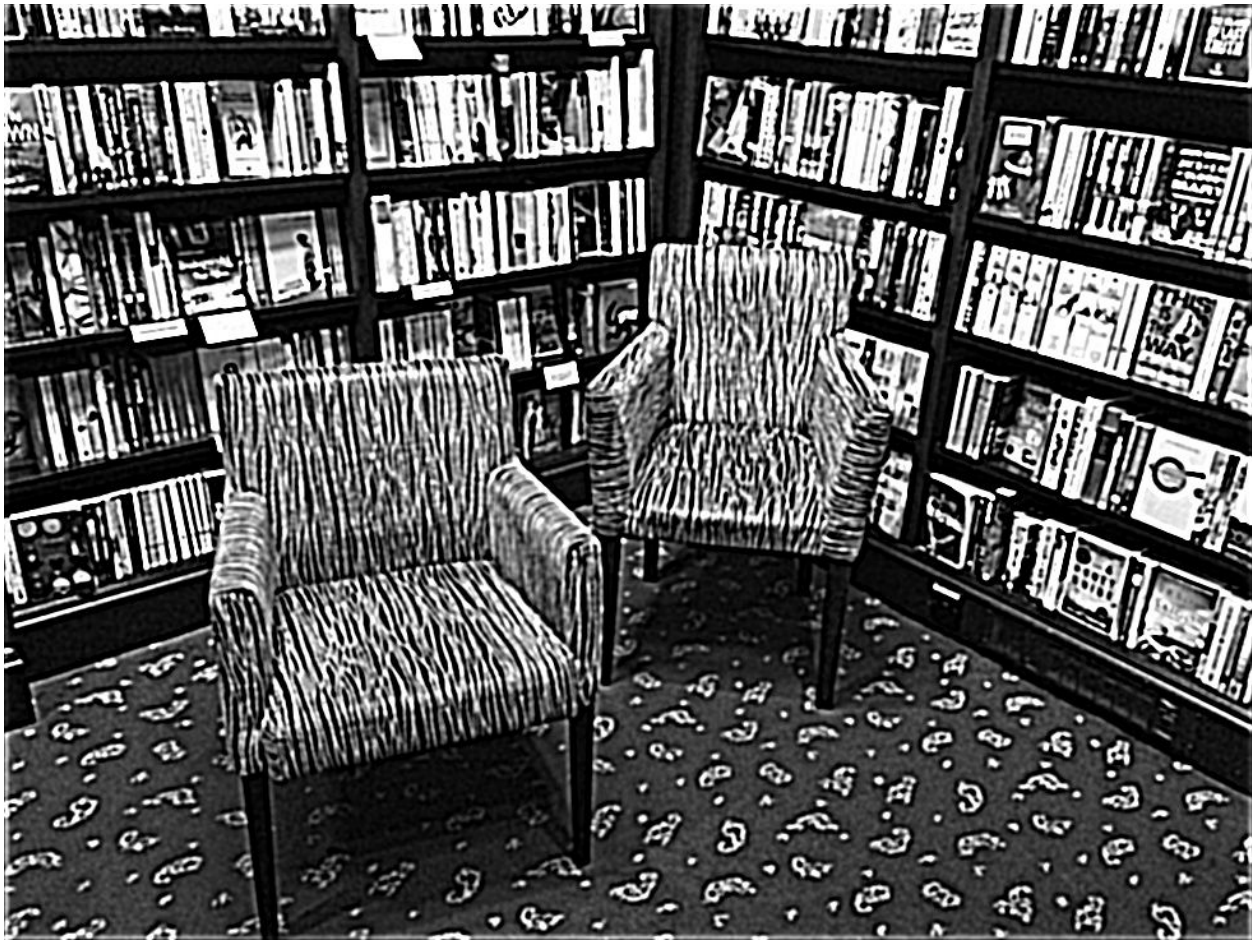
With Standard Deviation 20

Question 2:

These were the images that were obtained after resizing and convolving with Gaussians with standard deviations taken as Sigma 1 = 2.5, Sigma 2 = 1.5.

1. Original Image

2. After applying DoG Filter



3. Binary Image as obtained.

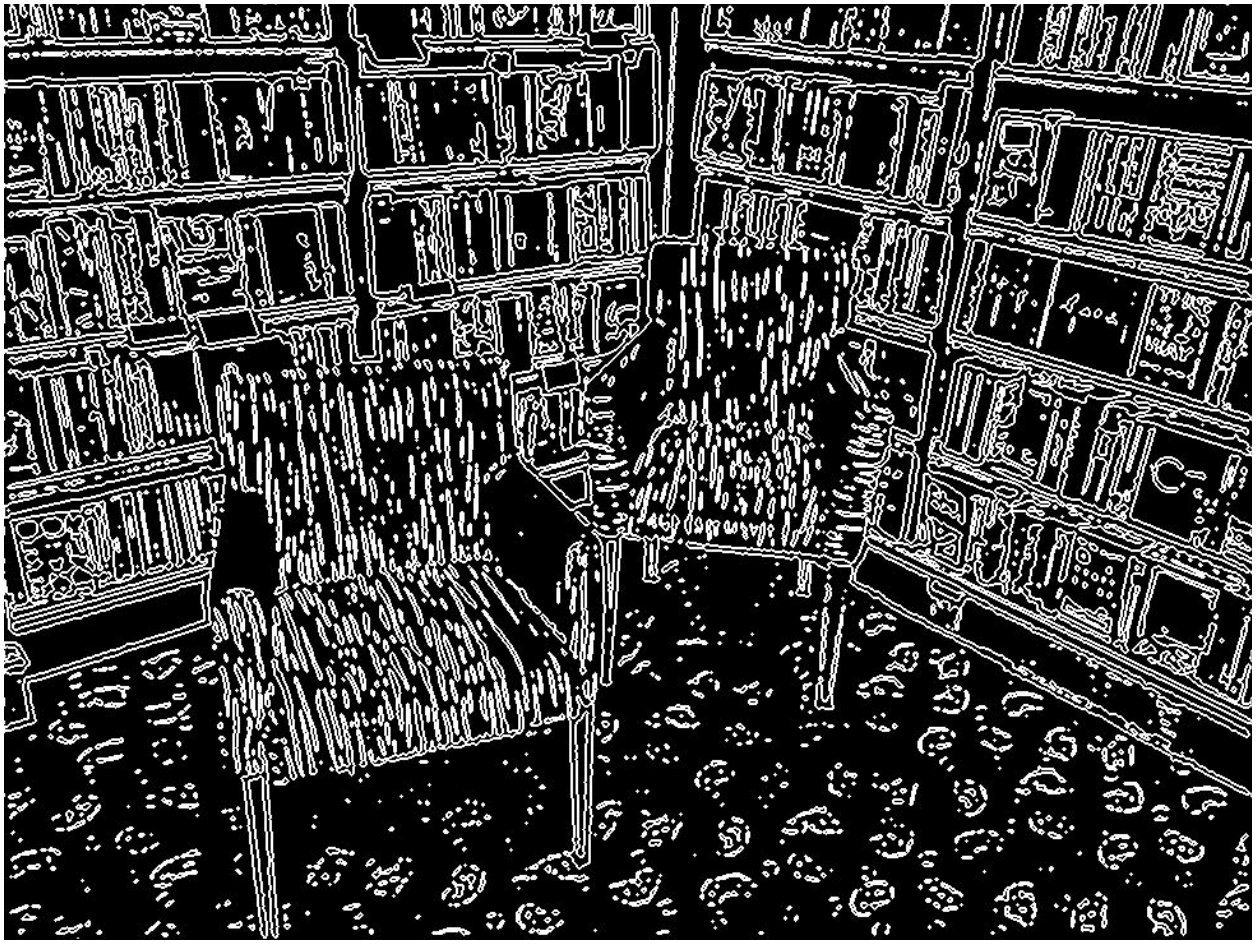


Image 2

Original Image

After Applying DoG Filter

Binary Image