CS 663 : Assignment-2

2)
Applying bilateral filter on corrupted image

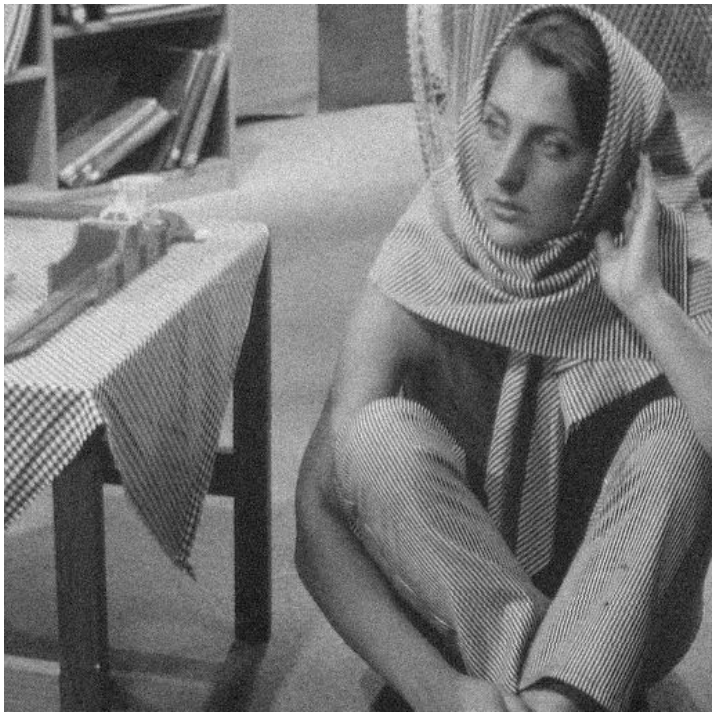
Code is written in python
Libraries used are numpy,matplotlib

Matplotlib used to open,show and save images

Numpy used in array manipulation and calculation of random noise that needed to be added.

Barbara Image:--

Original Image

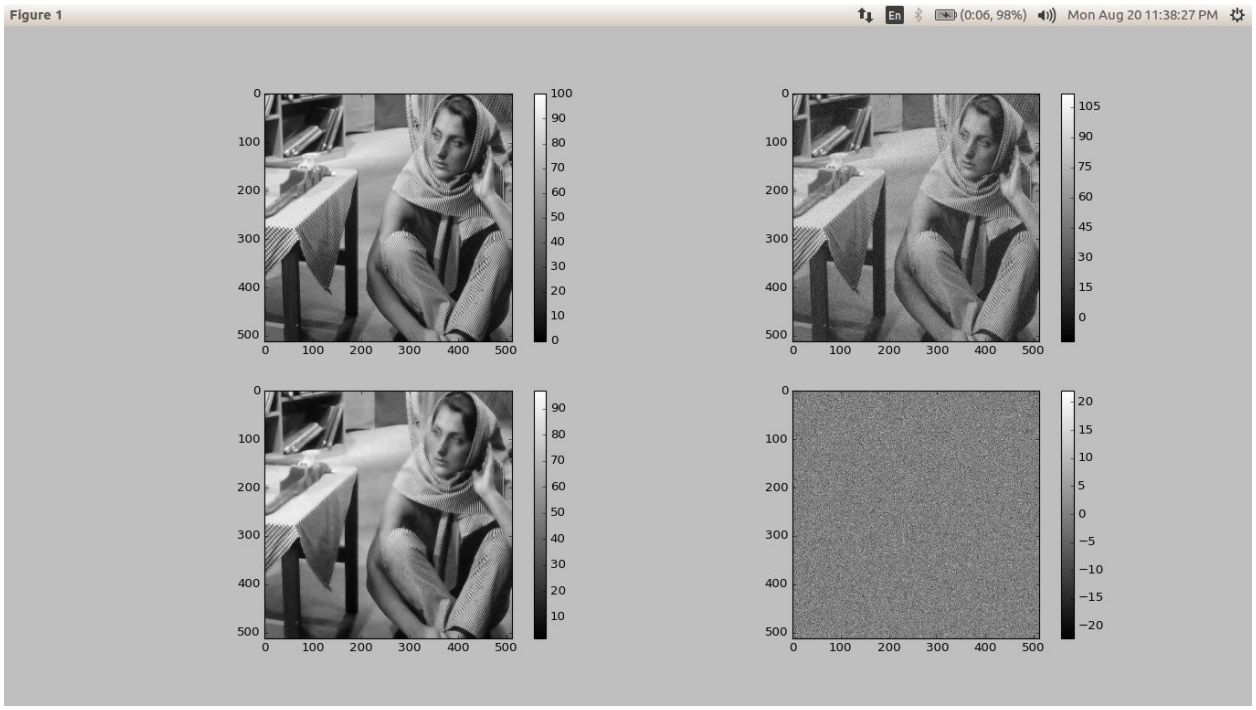


Noisy Image

Bilateral filtered image

Best RMS value achieved is 3.70774 at sigma_space=12 and sigma_intensity=12
At 0.9 sigma_space , RMS = 3.7119
At 0.9 sigma_intensity RMS = 3.73068

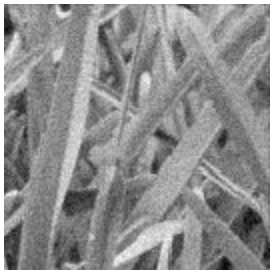
Color Map



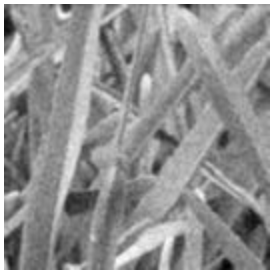
Images:--- Original,Noisy
Filtered,Gauss Noise

b) Grass Image

Original Image



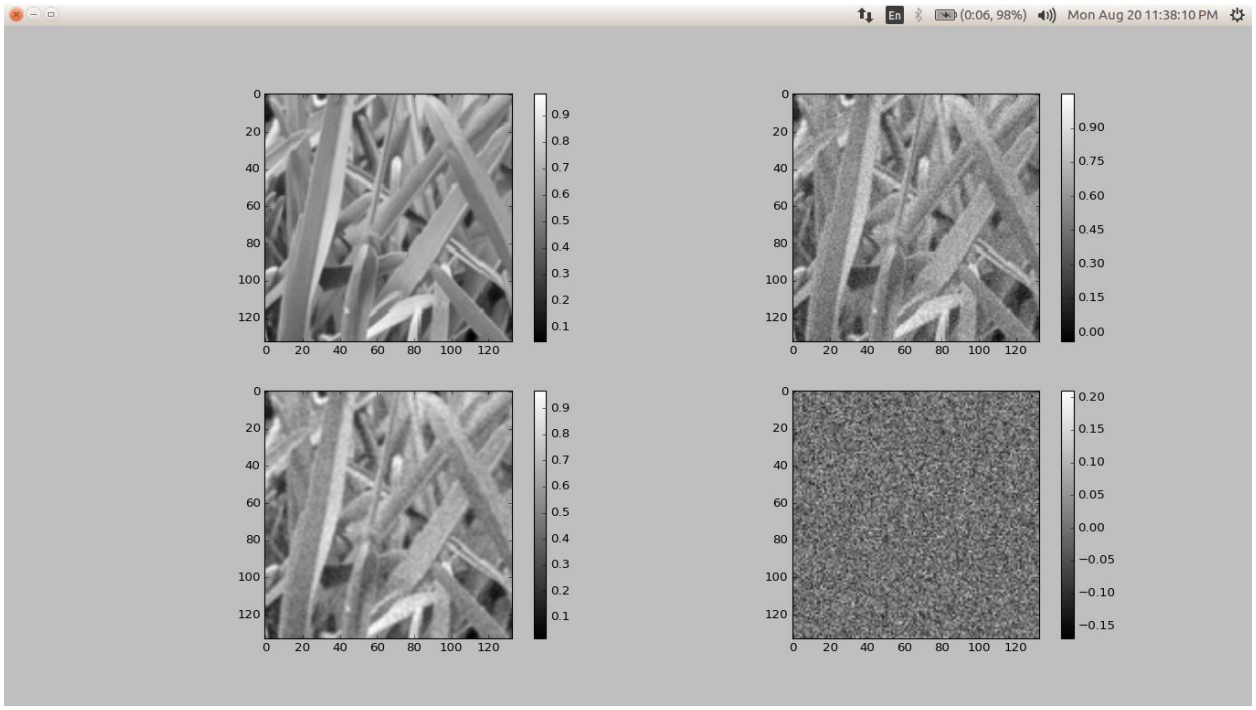
Noisy Image



Filtered Image

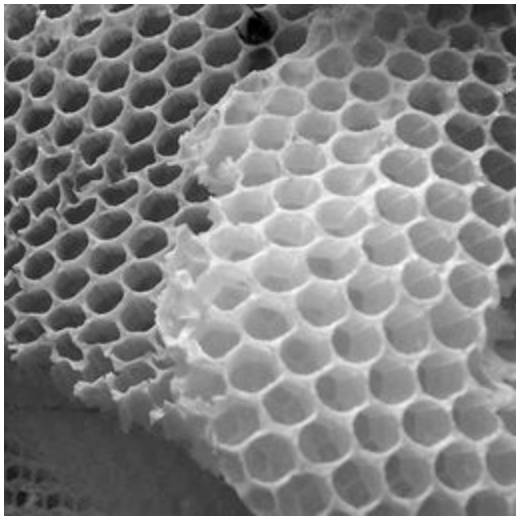
Best RMS value achieved is 0.05244 at sigma_space=5 and sigma_intensity=5
at 0.9*sigma_space RMS = 0.05257
at 0.9*sigma_intensity RMS=0.05267

Color Map:--

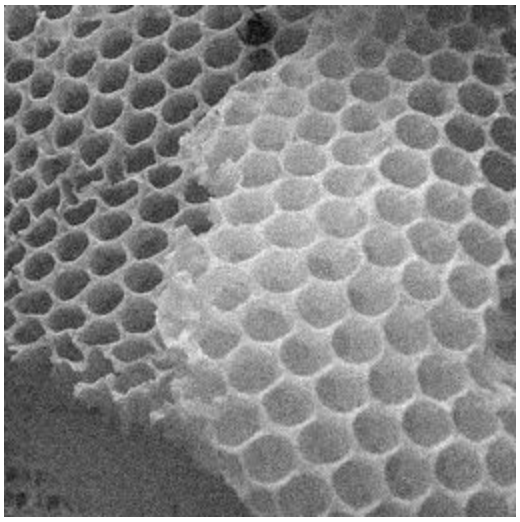


Images:--- Original,Noisy
Filtered,Gauss Noise

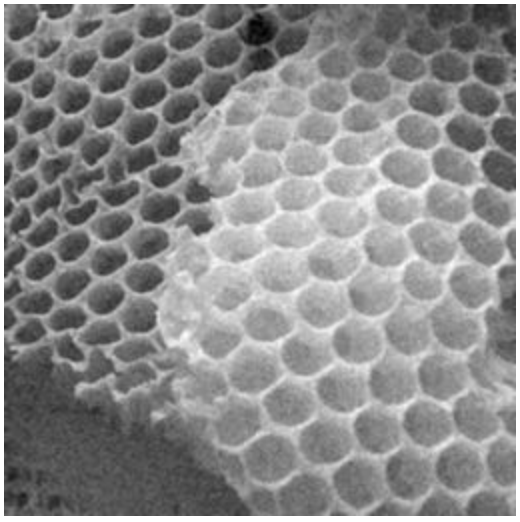
c) Honey Comb



Original Image



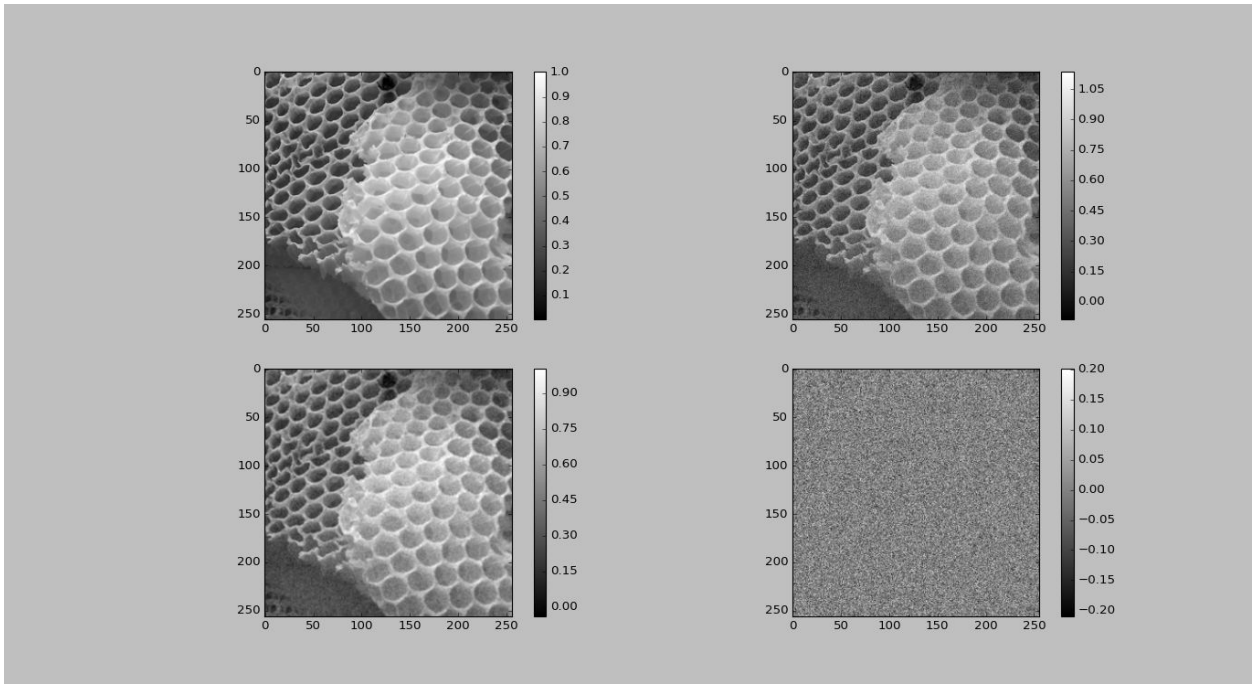
Noisy Image



Filtered Image

Best RMS value achieved is 0.05535 at sigma_space=5 and sigma_intensity=5
At 0.9*sigma_space,RMS = 0.05546
At 0.9*sigma_intensity,RMS = 0.05567

Color Map:--



Images:--- Original,Noisy
Filtered,Gauss Noise