Assignment 2 Question 3 Report

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CS663-Digital Image Processing

1 Patch Based Filtering

1.1 Approach

A window size of 25 x 25 is selected around every pixel and of course varies with the pixel location. For each pixel within that window, a reference patch (9x9) is chosen and compared with other patches within the window. The sizes of the patch also change with the location of pixel within the window. The weights are then calculated from the difference in the patches (normalised) with selected Optimal SD found after multiple iterations, varying it.

1.2 Results

Optimal Standard Deviation found = 0.4, Barbara Image:

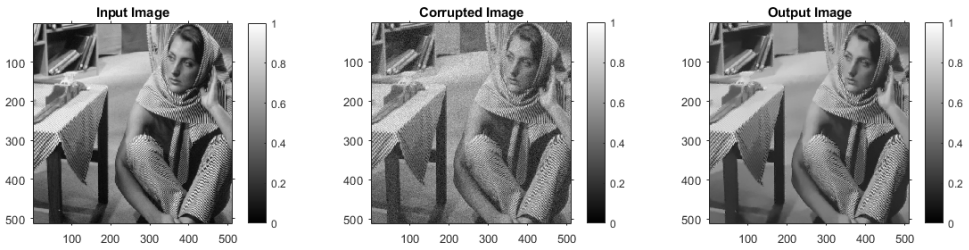

Figure 1: SD = 0.4

RMSD = 3.2503

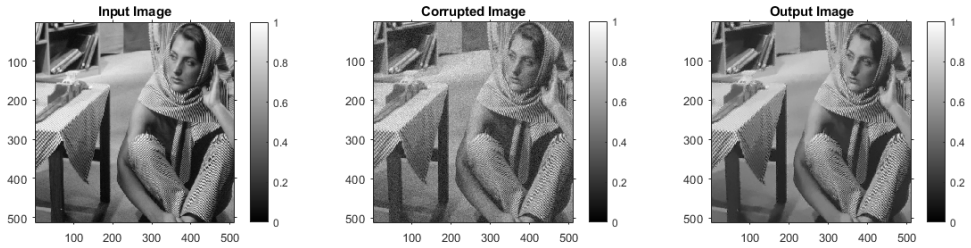

Figure 2: SD = 0.4*0.9

RMSD = 3.4274

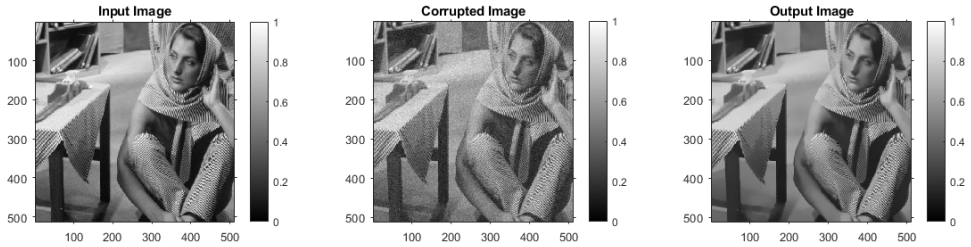

Figure 3: SD = 0.4*1.1

RMSD = 3.2094

1.3 Inferences

- The effect of patch based filtering can be compared from the Corrupted image

1.4 Conclusions

Hence we have performed Patch Based Filtering on the image