Assignment 2

Basic Denoising

Gaussian Noise and applying Median filter

Gaussian Noise and applying Mean filter

Salt and Pepper noise and applying Median filter

Salt and Pepper Noise and applying mean filter

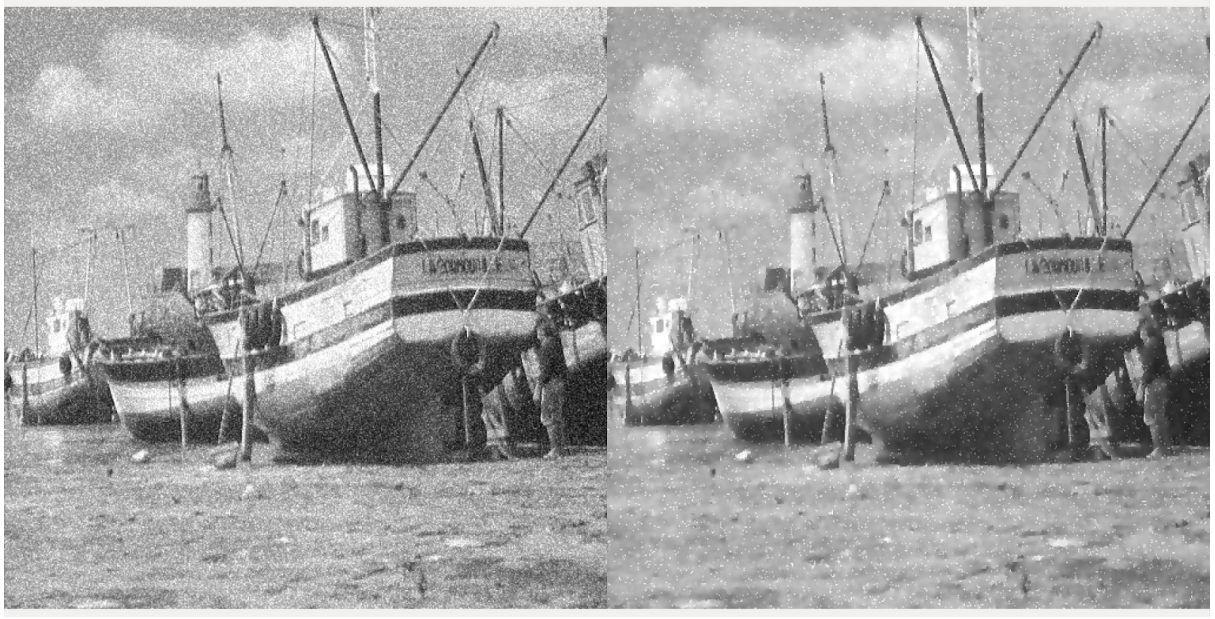
Images on the right are the best according to PSNR.

Edge-preserving smoothing

Anisotropic diffusion

This technique tries to preserve Edges by preventing smoothing across boundaries. It tries to detect edges by computing its laplacian and use it for piece-wise smoothing.

Here the parameter k decide what level of details(edges should be preserved). So, there is a trade-off in the details you want and noise level you want to remove.



K = 0.1 and iter = 20

K = 0.08 and iter = 100
With infinite iteration, it leads to cartoonisation of the image. We observe here that even after too many blurring iterations edges are still preserved.

Wiener Filter

Method 1 for estimating Sn/Ss

Method 2 for estimating Sn/Ss

Method 3 for estimating Sn/Ss

Real-Life Images

Defocus Blur

Motion Blur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