HW2: Problem 1

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1 Part A

Image converted to greyscale:

Figure 1: Greyscale image.

2 Part B

2.1 Subsection 1

Image with zero-mean Gaussian white noise with variance of 0.01:

Figure 2: J1: Greyscale image with gaussian noise applied.

2.2 Subsection 2

Image with salt-and-pepper noise, affecting approximately 5% of pixels:

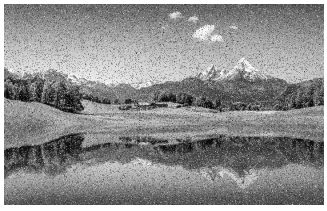

Figure 3: J2: Greyscale image with salt-and-pepper noise applied.

3 Part C

3.1 Gaussian De-noise: J1

Images with gaussian filter denoise on J1:

Figure 4: Gaussian filter denoised J1.

3.2 Gaussian De-noise: J2

Images with gaussian filter denoise on J2:

Figure 5: Gaussian filter denoised J2.

3.3 Median De-noise: J1

Images with median filter denoise on J1:

Figure 6: Median filter denoised J1.

3.4 Median De-noise: J2

Images with median filter denoise on J2:

Figure 7: Median filter denoised J2.

3.5 Arithematic Mean De-noise: J1

Images with arithematic mean filter denoise on J1:

Figure 8: Arithematic mean filter denoised J1.

3.6 Arithematic Mean De-noise: J2

Images with arithematic mean filter denoise on J2:

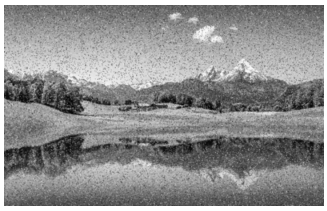

Figure 9: Arithematic mean filter denoised J2.

3.7 Geometric Mean De-noise: J1

Images with geometric mean filter denoise on J1:

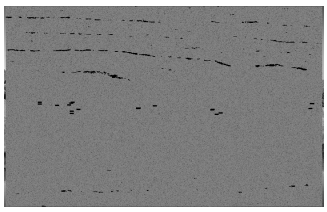

Figure 10: Geometric mean filter denoised J1.

3.8 Geometric Mean De-noise: J2

Images with geometric mean filter denoise on J2:

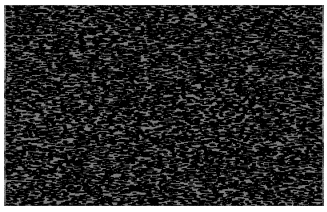

Figure 11: Geometric mean filter denoised J2.

3.9 Harmonic Mean De-noise: J1

Images with harmonic mean filter denoise on J1:

Figure 12: Harmonic mean filter denoised J1.

3.10 Harmonic Mean De-noise: J2

Images with harmonic mean filter denoise on J2:

Figure 13: Harmonic mean filter denoised J2.