

Project 3 Adaptive Median Filtering

1. Purpose

The purpose of this experiment is to design an adaptive median filter to deal with different noise.

2. Contents

- 1) Design adaptive median filters, sketch the algorithm flow chart.
- 2) Generate noisy images by adding Gaussian, Salt and Pepper noise with different parameters, such as standard deviation, polar probability and so on.
- 3) Using the designed adaptive median filter to denoise images, observe the denoising effects to different types of noise.
- 4) Under the same filter size, and using PSNR and SSIM measure, compare the denoising performance of adaptive median filter with that of the standard median filter.

3. Discussion

- 1) Which type of noise is the median filter more suitable for? Why?
- 2) Compare to the standard median filter, why does adaptive median filter has better performance?