SRM University – AP, Andhra Pradesh, India

CSE 314: Digital Image Processing
Semester: 6th
Instructor: Dr. Jatindra Kumar Dash

Lab 03: Intensity transformation (Spatial Filtering)

1. Develop programs for following spatial filtering operations on a gray scale image.
    a. Averaging: Implement averaging filtering operations for different window sizes and study their effect on the quality of output image. Write your observations on output image quality.
    b. Weighted averaging: Implement weighted averaging filtering operations for different window sizes and study their effect on the quality of output image. Write your observations on output image quality.
    c. Median filtering: Implement weighted averaging filtering operations for different window sizes and study their effect on the quality of output image. Write your observations on output image quality.
    d. Max filtering
    e. Min filtering

2. Take a gray scale image and add salt and pepper noise. Write programs for following operations and observe their outputs

    a. Linear smoothing or Image averaging
    b. Weighted averaging
    c. Median filtering. Compare the output quality among Image averaging and median filtering.
    d. Max filtering
    e. Min filtering

3. Write programs to perform following sharpening operations on a gray scale image
    a. Laplacian filter
    b. Filtering using composite mask
    c. Unsharp masking
    d. High boost filtering
    e. Filtering using first order derivative operators such as sobel and prewitt mask.