

Exp-4: Spatial domain filtering of image.

a. Averaging (mean) filter

b. Median filter

% Mean (Average) filter using inbuilt MATLAB function

clear

close all

clc

I=imread('Cameraman.tif');

Ins=imnoise(I,'salt & pepper'); % add salt & Pepper noise
into the image

% define the window size m X n of the filter

m=input('Enter the filter window size m: ');

n=input('Enter the filter window size n: ');

% design the mean (averaging) filter

H=fspecial('average',[m n]);

Im=imfilter(Ins,H,'replicate'); % Carry out filtering on the
noisy image

subplot(1,3,1)

imshow(I)

title('Original Image')

subplot(1,3,2)

imshow(Ins)

title('Noisy Image')

subplot(1,3,3)

imshow(Im)

title('Mean Filtered Image')

% Median Filtering using Inbuilt MATLAB functions

```
clear
close all
clc
I=imread('Cameraman.tif');
Ins=imnoise(I,'salt & pepper');
m=input('Enter Filter window m: ');
n=input('Enter Filter window n: ');
Ifilt=medfilt2(Ins,[m n]);

subplot(1,3,1)
imshow(I);
title('Original Image');
subplot(1,3,2)
imshow(Ins);
title('Noisy Image');
subplot(1,3,3)
imshow(Ifilt);
title('Median Filtered Image');
```
