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```
clear all
```

## code begins

```
data=imread('cameraman.tif');
data=imnoise(data,'salt & pepper');
data=imnoise(data,'gaussian');
image=data;

data=im2double(data);
% Filter takes double the size of mask
masksize=2;
% Specifications of the filter
d=4;
[ro col]=size(data);
temp1=[];
graber=0;
akkumulator=[];
```

## Main Module for Alpha Trimmed Mean Filter

```
for i=1:ro;
    for j=1:col;
        for m=-masksize:masksize;
            for n=-masksize:masksize;
                if (i+m>0 && i+m<ro && j+n>0 && j+n<col && ... % To keep indi
                    masksize+m>0 && masksize+m<ro && ...
                    masksize+n>0 && masksize+n<col)

                    temp1=[temp1 data(i+m,j+n)];

            end
        end
    end

    temp1=sort(temp1);
    lenth=length(temp1);
    for k=((d/2)-1):(lenth-(d/2))
        akkumulator=[akkumulator temp1(k)];
    end
```

---

```
    akkumulator=sum(akkumulator);  
    reformedimage(i,j)=(akkumulator) / (25-d);  
  
    akkumulator=[];  
    temp1=[];  
  
end  
end  
figure;  
  
subplot(1,2,1);  
imshow(image);  
title('Noisy Image');  
  
subplot(1,2,2);  
imshow(reformedimage);  
title('Alpha Trimmed Filter Result');
```

Noisy Image

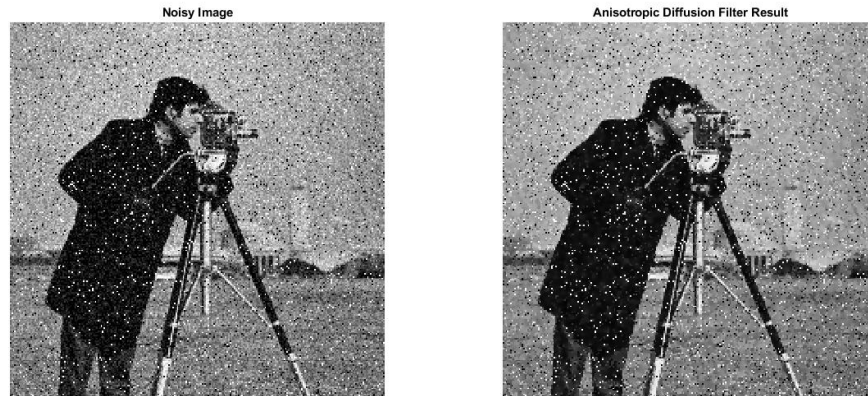


Alpha Trimmed Filter Result



## Anisotropic diffusion

This method works on MATLAB 2018a



```
image_diffusion = imdiffusefilt(image);  
  
figure;  
  
subplot(1,2,1);  
imshow(image);  
title('Noisy Image');  
  
subplot(1,2,2);  
imshow(image_diffusion);  
title('Anisotropic Diffusion Filter Result');
```

*Undefined function 'imdiffusefilt' for input arguments of type 'uint8'.*

*Error in DIP\_PA8 (line 63)  
image\_diffusion = imdiffusefilt(image);*

## Conclusion

Alpha trimmed filtering performs well on removing noise from the given image. Anisotropic diffusion also performs gallantly on the given image.

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