Jesus Molina Roldan

Victor Vidal Rojas Condori

Sesion 2

Histograma

```
im = imread('Que_es.png');
imshow(im)
```

```
im2 = im+200;
figure, imshow(im2), title('image2');
```

image2


```
im3 = im*10;
figure, imshow(im3), title('image3');
```

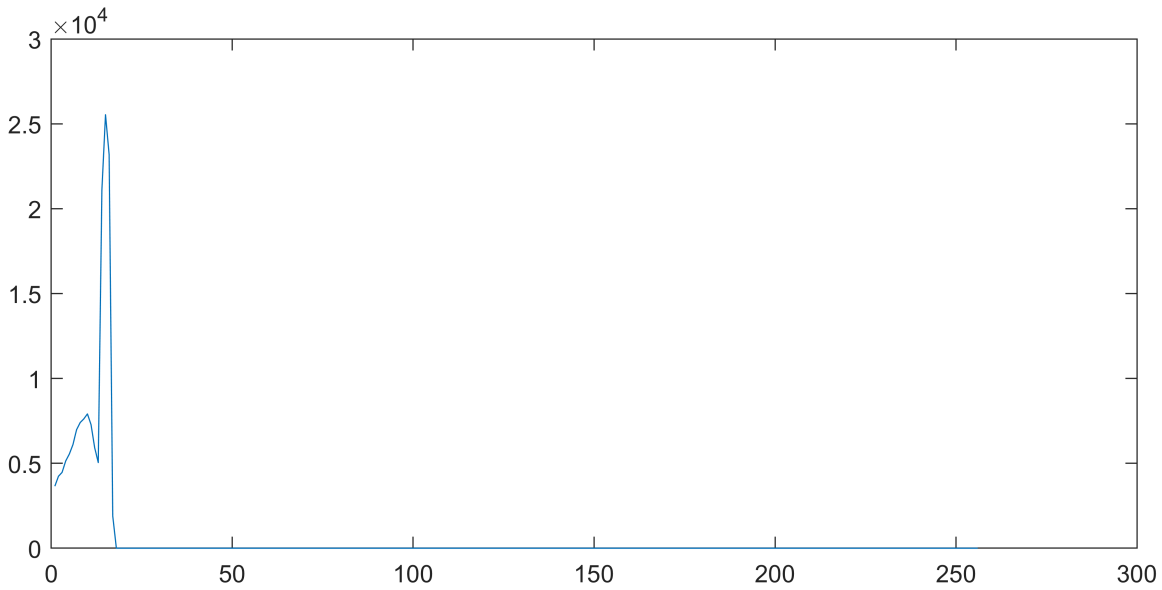
image3


```
h = zeros(256,1);
[files cols] = size(im)
```

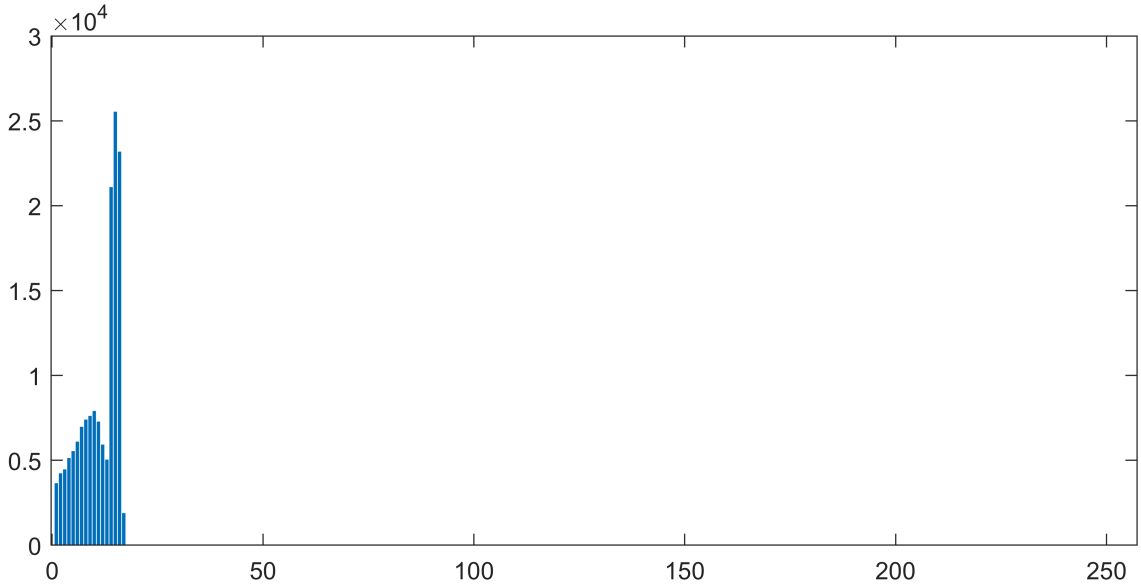
```
files = 250
cols = 596
```

```
for f=1:files
    for c=1:cols
        h(im(f,c)+1) = h(im(f,c)+1)+1;
    end
end
```

```
plot(h)
```




```
bar(h)
```




```
%%histograma equalitzat
im2 = histeq(im);
figure, imshow(im2),title('histo equalitzat')
```

histo equalitzat


```
neg = 255-im;
figure, imshow(neg),title('Negativo')
```

Negativo


```
neg2 = 255-im2;
figure, imshow(neg2), title('Negativo 2')
```

Negativo 2


```
im = imread(['lenna.tif']);
imshow(im)
```

Reducir imagen

```
im2 = imresize(im,0.25);
imshow(im2)
```

Aumenta imagen

```
im3 = imresize(im,1.5);
imshow(im3)
```

```
```

Aumentar imagen con nearest

```
im4 = imresize(im,1.5,'nearest');
imshow(im4)
```

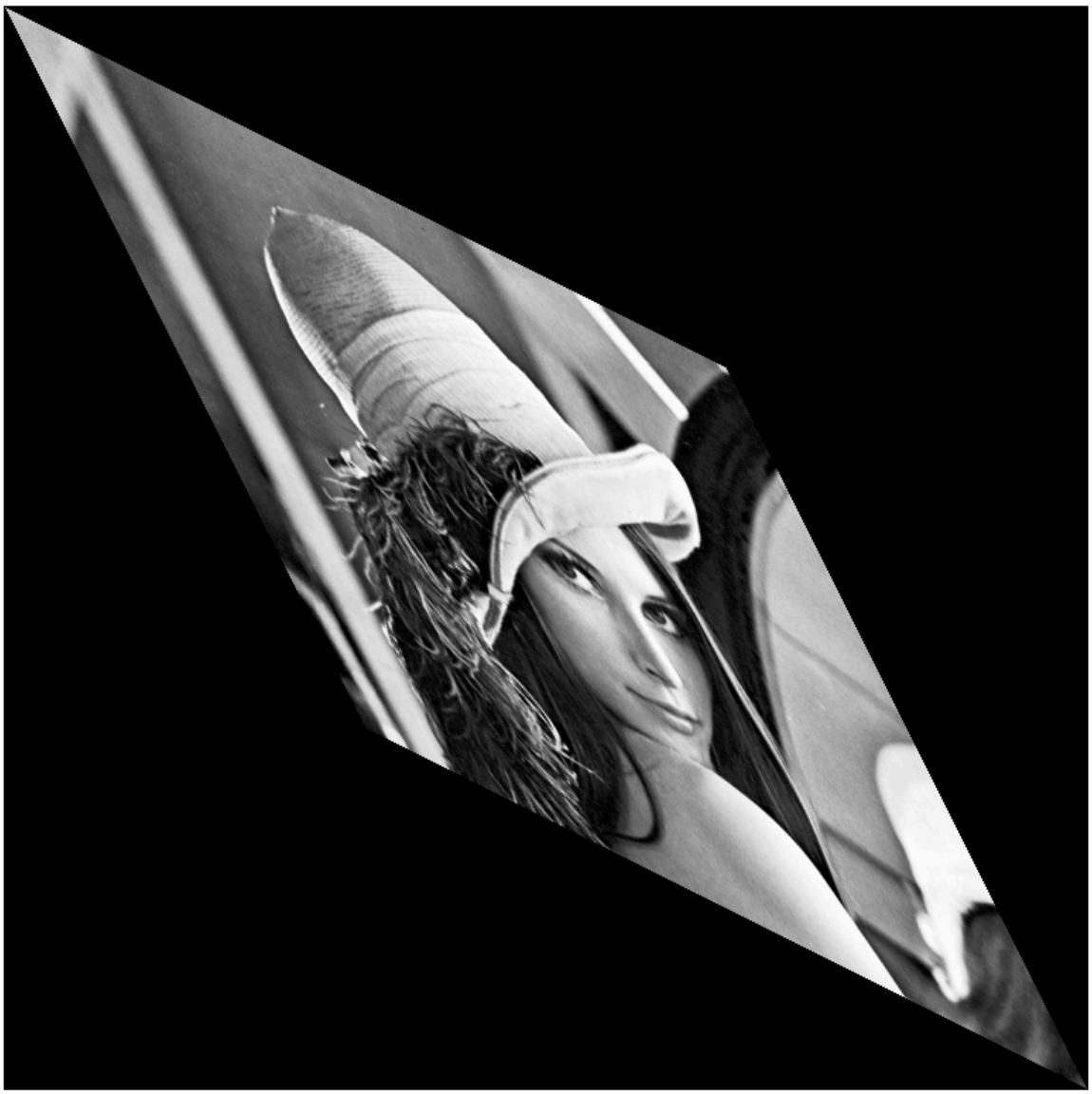
Rotación imagen

```
im2 = imrotate(im,45);
imshow(im2)
```

Tranformacion Afin

```
T = affine2d([1 0 0; .5 1 0; 0 0 1]);
im6 = imwarp(im,T);
imshow(im6)
```

```
T = affine2d([1 0.5 0; 0.5 1 0; 0 0 1]);
im7= imwarp(im, T);
imshow(im7)
```



Ejemplo 2 - Toycars

```
im1 = imread('toycars1.png');
im2 = imread('toycars2.png');
im3 = imread('toycars3.png');
figure, subplot(1,3,1),imshow(im1)
subplot(1,3,2),imshow(im2)
subplot(1,3,3 ),imshow(im3)
```



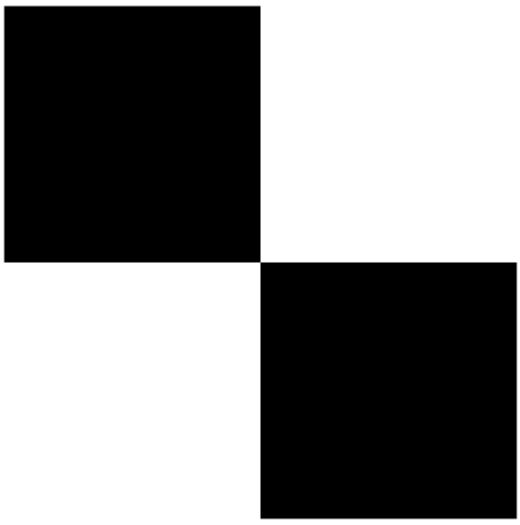
```
res = im1 -im2;
figure;
imshow(res)
```

```
res1 = imabsdiff(im1,im2);
figure, imshow(res1)
```

```
res2 = imabsdiff(im1,im3);
figure, imshow(res2)
```

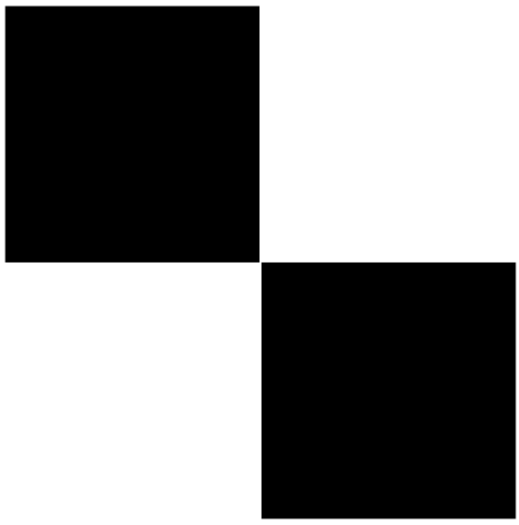
Neighborhood operations con iteraciones

```
h = ones(3);
im = ones(256);
im(1:128,1:128) = 0;
im(129:256,129:256) = 0;
imshow(im)
```



```
res = zeros(256);
n = 1;
for i=0:255
    for j = 0:255
        sum = 0;
        for k = -1*n:1*n
            for k2 = -1*n:1*n
                sum = sum + im(mod(i+k,256)+1,mod(j+k2,256)+1);
            end
        end
        res(i+1,j+1) = sum/9;
    end
end
imshow(res),title('histo equalitzat'),title('Neighborhood Operations with iterative')
```

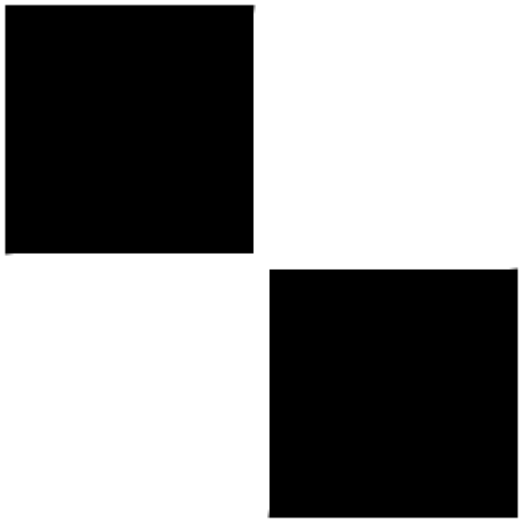

```
%improfile
im2=im(:,1:end-1)+im(:,2:end);
imshow(im2)
```



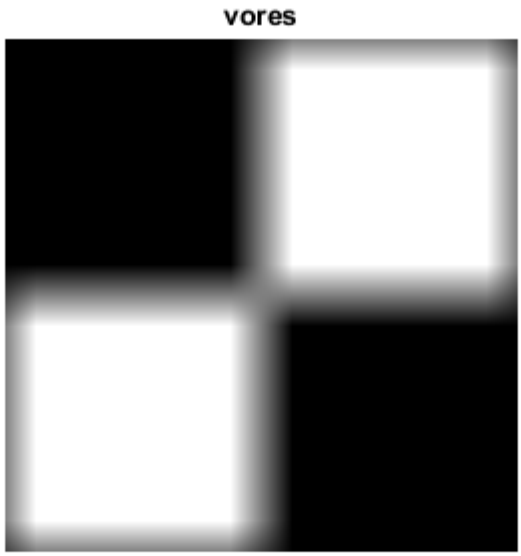
Filter Operation - Ejemplos

```
h = ones(9);
res = imfilter(im,h,'conv');
res = res/9;
```

```
figure,imshow(res)
```



```
h = ones(31);
res2=imfilter(im,h,'conv');
res2 = res2/31/31;
figure, imshow(res2), title('vores');
```




```
res3 = imfilter(im,h,'conv','replicate');
res3 = res3/31/31;
figure, imshow(res3), title('vores amb replicate');
```

vores amb replicate