
Table of Contents

| | |
|-------------------------|---|
| E9 | 1 |
| Reconstruccio | 3 |
| Reconstruccio 2 | 4 |
| Reconstruccio 3 | 5 |
| Openinf & closing | 6 |
| SKIZ | 8 |

E9

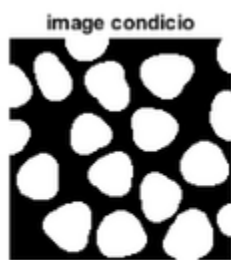
```
im=imread('blob3.tif');
imshow(im), title('image condicio')
mark=im;
mark(2:end-1,2:end-1) = 0;
figure, imshow(mark),title('markers')

ee=strel('disk',1);
dilc=imdilate(mark,ee) & im;
figure, imshow(dilc),title('dilatacio condicional')

for i =1:8
    dilc=imdilate(dilc,ee) & im;
end
figure, imshow(dilc),title('8 x dilatacio condicional')

rec=imreconstruct(mark,im);
figure, imshow(rec),title('resconstruccio ')

res=imsubtract(im,rec);
figure, imshow(res),title('resultat')
```



markers



dilatacio condicional

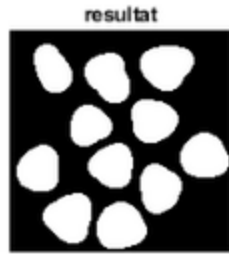


8 x dilatacio condicional



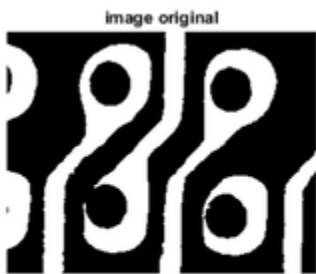
reconstruccio

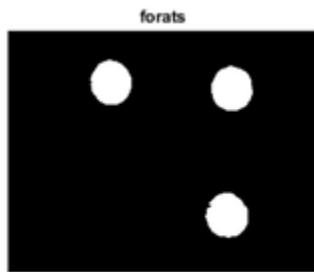




Reconstruccio

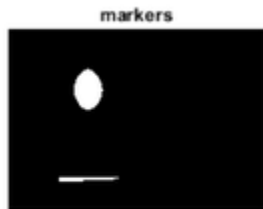
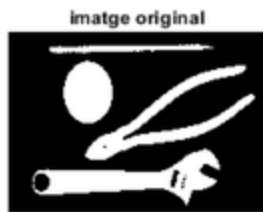
```
im=imread('pcbholes.tif');  
imshow(im),title('image original')  
neg=~im;  
figure, imshow(neg),title('negatiu')  
mark=neg;  
mark(2:end-1,2:end-1) = 0;  
figure, imshow(mark),title('markers')  
  
rec=imreconstruct(mark,neg);  
figure, imshow(rec),title('reconstruccio')  
  
forats=imsubtract(neg,rec);  
figure, imshow(forats), title('forats')
```





Reconstruccio 2

```
im=imread('tools.tif');  
imshow(im), title('imatge original')  
ee=strel('disk',7);  
mark=imerode(im,ee);  
figure, imshow(mark), title('markers')  
rec=imreconstruct(mark,im);  
figure, imshow(rec), title('reconstruccio')
```

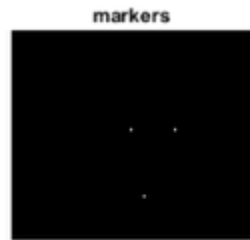


Reconstruccio 3

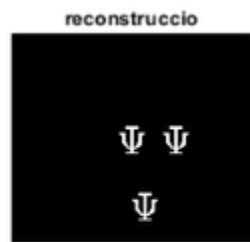
```
im=imread('letters.tif');  
imshow(im), title('imatge original')  
mask=zeros(8);  
mask(1,:)=1;  
mask(:,4)=1;  
mask(:,5)=1;  
mark=imerode(im,mask);  
figure, imshow(mark), title('markers')  
rec=imreconstruct(mark,im);  
figure, imshow(rec), title('reconstruccio')
```

imatge original
 ved by erosion
 cal filter:
 $\Psi(f) = \Psi(\Psi(f))$
 $< g \Rightarrow \Psi(f) <$

markers



reconstruccio



Openinf & closing

```
im=imread('blob.tif');
imshow(im), title('imatge original')
ee=strel('disk',5);
op=imopen(im,ee);
cl=imclose(im,ee);
figure, imshow(op), title('opening')
figure, imshow(cl), title('closing')
```

```
im=imread('gear.tif');
imshow(im), title('imatge original')
ee=strel('disk',20,0);
op=imopen(im,ee);
figure, imshow(op), title('opening')
dents=imsubtract(im,op);
figure, imshow(dents), title('dents')
eti =bwlabel(dents);
figure,imshow(eti,[]),title('imatge etiquetada')
```

impixelinfo

imatge original



opening

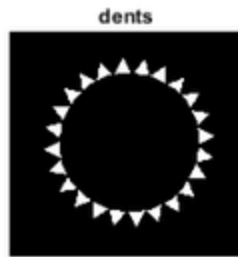


imatge original



opening



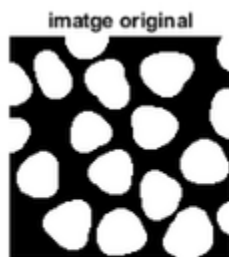


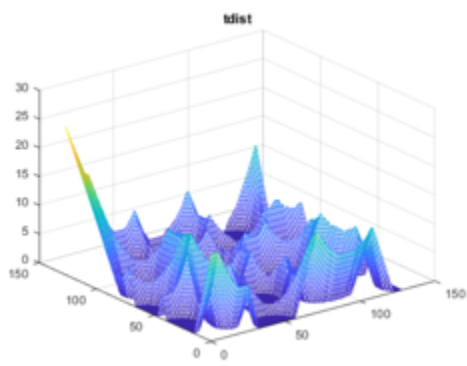
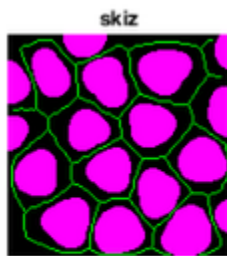
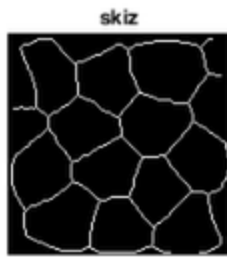
Pixel info: (X, Y) Pixel Value

SKIZ

```
im=imread("blob3.tif");
imshow(im), title('imatge original');
skiz=bwskel(~im);
figure, imshow(skiz), title('skiz')
figure, imshow(imfuse(skiz,im)), title('skiz')

tdist=bwdist(im);
figure, mesh(tdist), title('tdist')
```





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