Textúra

Konvolúcia

C = conv2(A,B,’shape’)

```
A = rand(5);
B = rand(3);
C = conv2(A,B)
Cs = conv2(A,B,'same')
Cv = conv2(A,B,'valid')
```

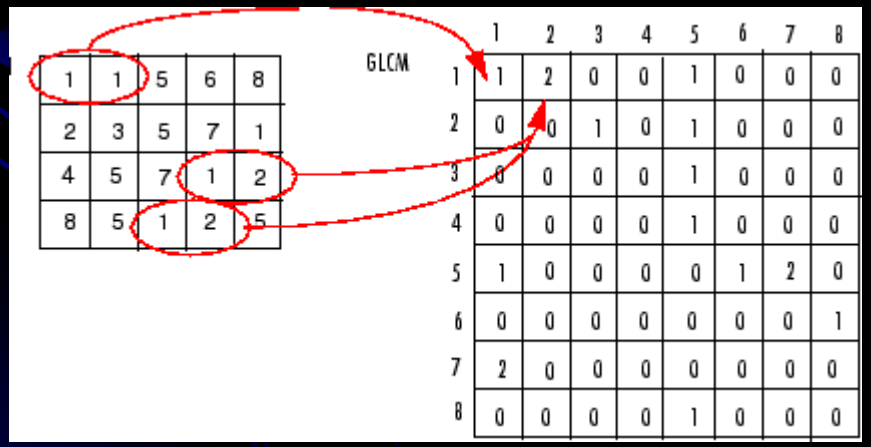
Autokorelácia

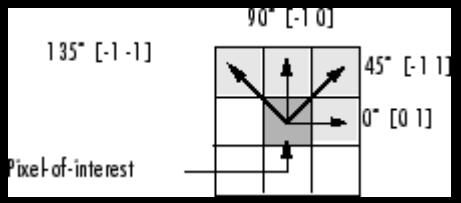
```
img=imread('ciary2.jpg');

gr=rgb2gray(img);
siz=size(gr);
fil=filter2(gr,gr);
```

Matica opakovaných výskytov

glcm = graycomatrix(I)
I- šedoúrovňový/binárny obrázok
glcm = graycomatrix(I, 'offset', [0 1], 'Symmetric', false)
glcm = graycomatrix(I,'NumLevels',16);





```
glcm = graycomatrix(I)
stats = graycoprops(glcm, properties)
stats = graycoprops(glcm,{'contrast','homogeneity'})
```

Property	Description	Formula
`'Contrast'`	Returns a measure of the intensity contrast between a pixel and its neighbor over the whole image. `Range = [0 (size(GLCM,1)-1)^2]` Contrast is 0 for a constant image.	$\sum_{i,j} \lvert i-j \rvert^2 p(i,j)$
`'Correlation'`	Returns a measure of how correlated a pixel is to its neighbor over the whole image. `Range = [-1 1]` Correlation is 1 or -1 for a perfectly positively or negatively correlated image. Correlation is `NaN` for a constant image.	$\sum_{i,j} \frac{(i-\mu i)(j-\mu j)\,p(i,j)}{\sigma_i \sigma_j}$
`'Energy'`	Returns the sum of squared elements in the GLCM. `Range = [0 1]` Energy is 1 for a constant image.	$\sum_{i,j} p(i,j)^2$
`'Homogeneity'`	Returns a value that measures the closeness of the distribution of elements in the GLCM to the GLCM diagonal. `Range = [0 1]` Homogeneity is 1 for a diagonal GLCM.	$\sum_{i,j} \frac{p(i,j)}{1+\lvert i-j \rvert}$

```
img=imread('ciary.jpg');

offsets = [zeros(50,1) (1:3:150)' ];

glcms = graycomatrix(gr,'o',offsets);

stats = graycoprops(glcms,'Correlation');

figure, plot([stats.Correlation]);
title('Texture Correlation as a function of offset');
xlabel('Horizontal Offset')
ylabel('Correlation')
```

Gabor filter