Harris Corner Detection

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Initialization

```
addpath('../../common/');
load ../data/boat.mat;
[rows, cols] = size(imageOrig);
```

Original Image

```
images = zeros(rows, cols, 1);
images(:, :, 1) = imageOrig;
myShowImages(images, 'Original Image');
```

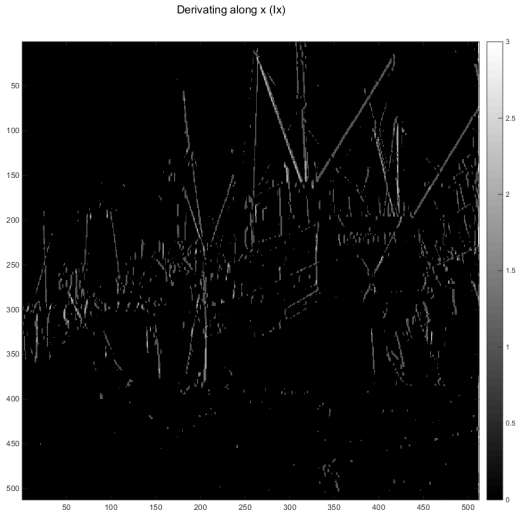
Harris corner detection

```
[harris, gx, gy, eigen_1_harris, eigen_2_harris, appended_image]...
```

```
= myHarrisCornerDetector(imageOrig, 0.5, [21, 21], 0.005);
```

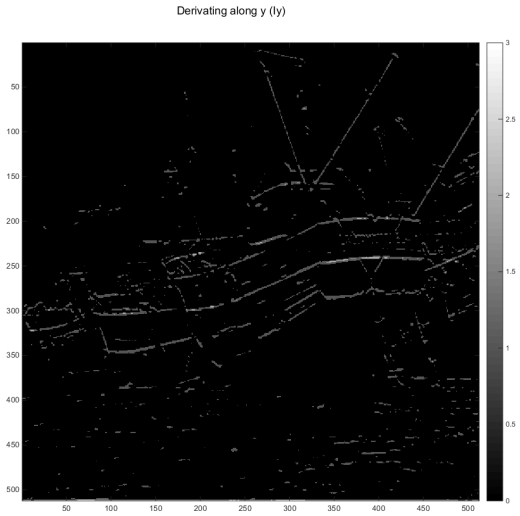
Derivatix along x (Ix)

```
images = zeros(rows, cols, 1);
images(:, :, 1) = gx;
myShowImages(images, 'Derivating along x (Ix)');
```



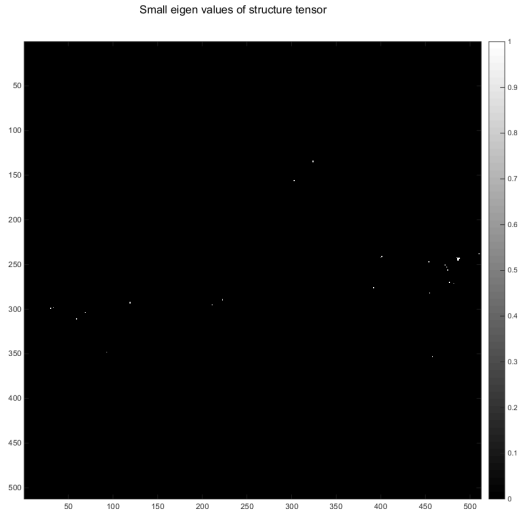
Derivatix along y (Iy)

```
images = zeros(rows, cols, 1);
images(:, :, 1) = gy;
myShowImages(images, 'Derivating along y (Iy)');
```



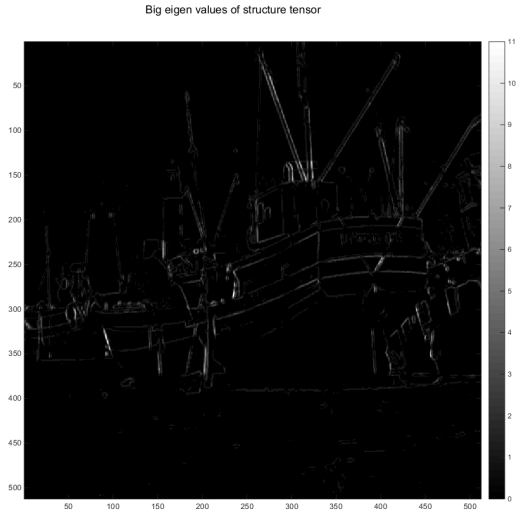
Small eigen values of structure tensor

```
images = zeros(rows, cols, 1);
images(:, :, 1) = eigen_1_harris;
myShowImages(images, 'Small eigen values of structure tensor');
```



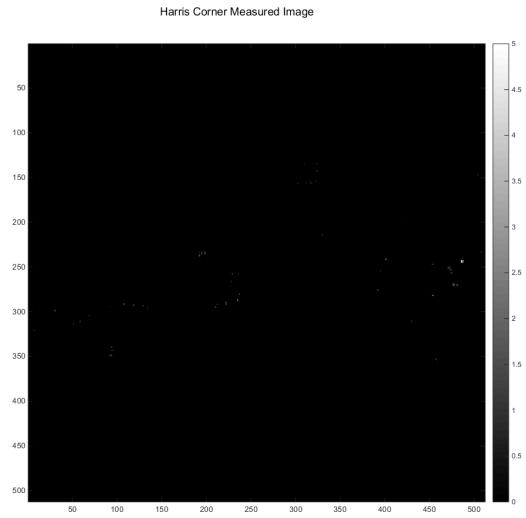
Big eigen values of structure tensor

```
images = zeros(rows, cols, 1);
images(:, :, 1) = eigen_2_harris;
myShowImages(images, 'Big eigen values of structure tensor');
```



Harris Corner Measured image

```
images = zeros(rows, cols, 1);
images(:, :, 1) = harris;
myShowImages(images, 'Harris Corner Measured Image');
```



Darkened image overlapped with harris

```
imshow(appended_image, [0, 1]);
```

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