CS 663 Assignment 3, Question 1

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Tuned values

sigma1 = 0.5 (for smoothing the image)

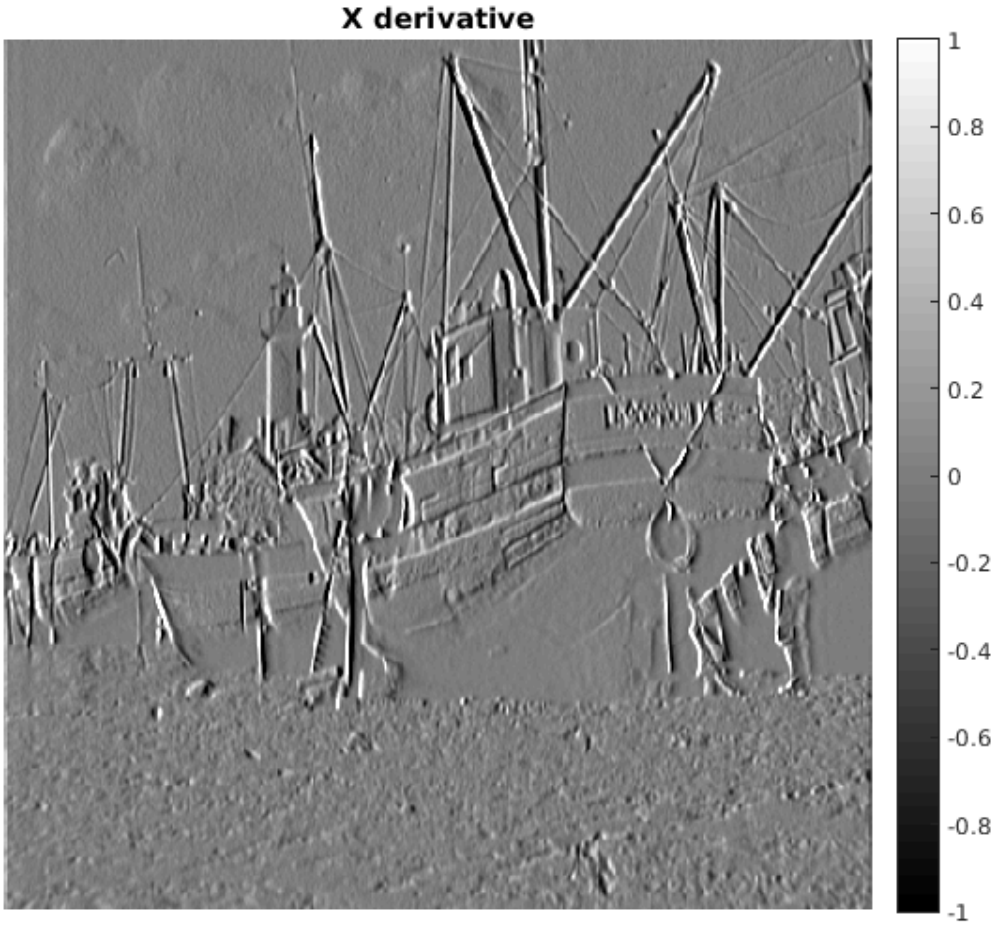
sigma2 = 1.5 (for weighted averaging for structural tensor)

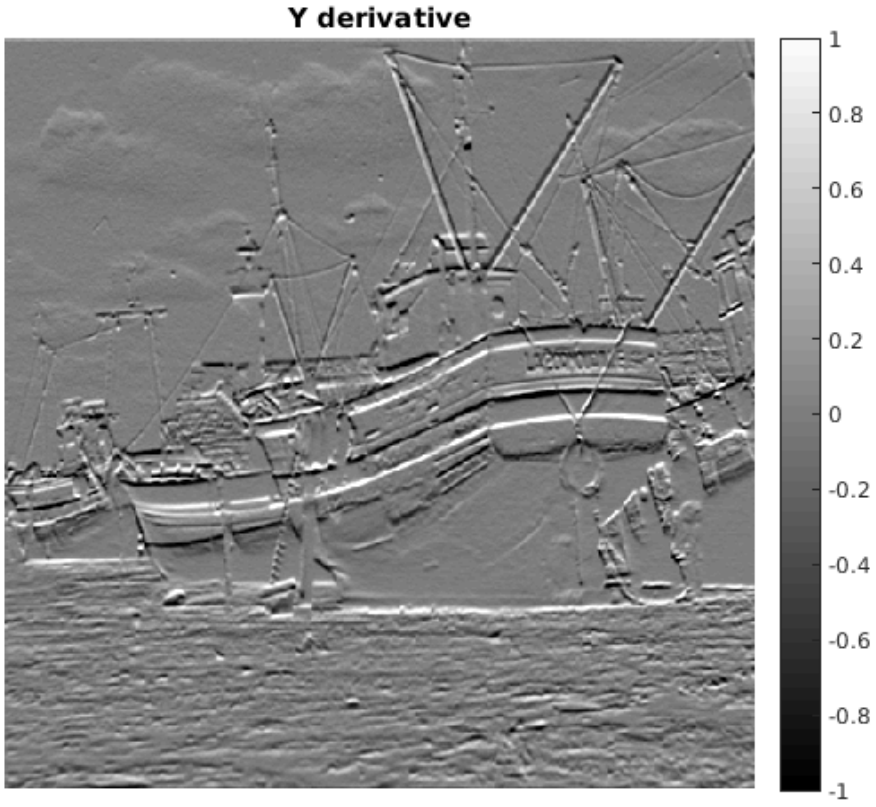
k = 0.2

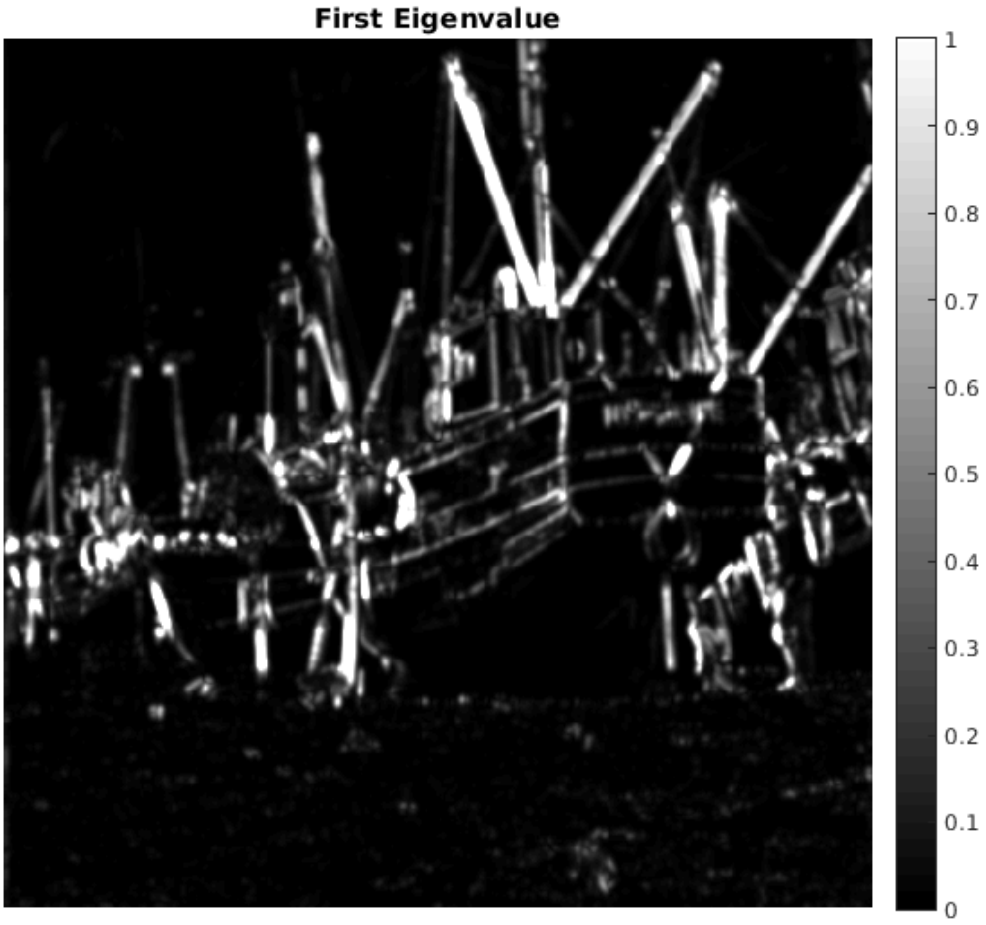
Code

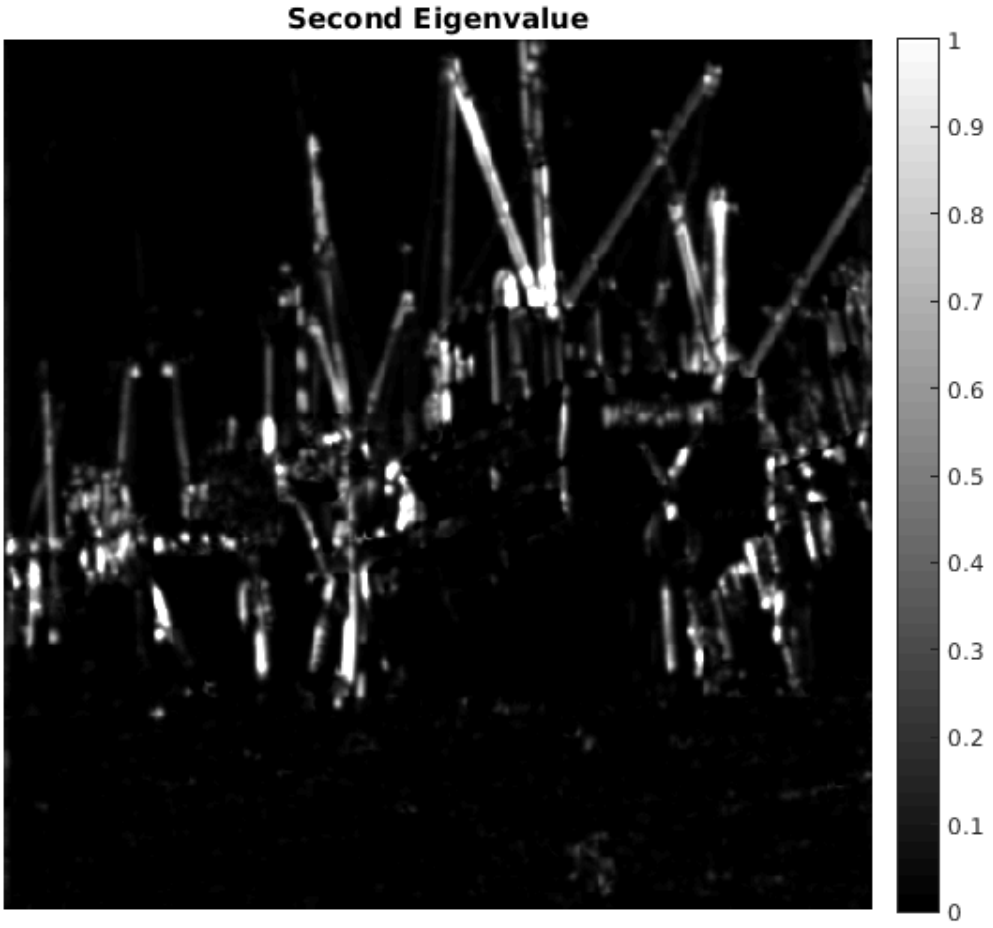
```
clc; clear all; close all;
warning('off', 'all');

tic;

data = load('boat.mat');
im = data.imageOrig;
im = double(im) ;
im = (im-min(im(:)))/(max(im(:)) - min(im(:)));

[f_x, f_y, lambda1, lambda2, corner] = myHarrisCornerDetector(im, 0.5,
 1.5, 0.2) ;
displayImage(im, 'Boat', 0, 1);
displayImage(f_x, 'X derivative', -1, 1);
displayImage(f_y, 'Y derivative', -1, 1);
displayImage(lambda1, 'First Eigenvalue', 0, 1);
displayImage(lambda2, 'Second Eigenvalue', 0, 1);
displayImage(corner, 'Cornerness', 0, 1);

toc;

Elapsed time is 6.802987 seconds.
```

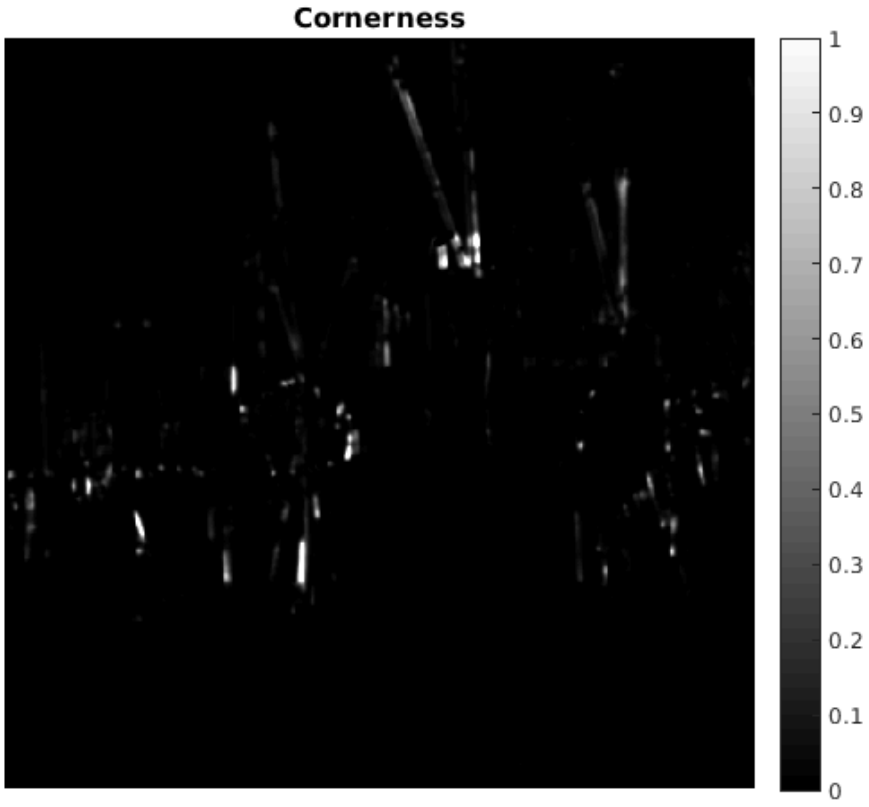

Boat
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0


X derivative
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


Y derivative
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1


First Eigenvalue
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0


Second Eigenvalue
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0



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