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Question 1

Boat Image

We used a 5*5 window for the calculation of the structure tensor at any point. The standard deviation(σ^2) used was 1.4. The value of k for cornerness measure was 0.04. While to smoothen the image we used a gaussian filter of standard deviation equal to 0.65. After all the processing we used non-max suppression to get the final cornerness measure. Results are shown below.

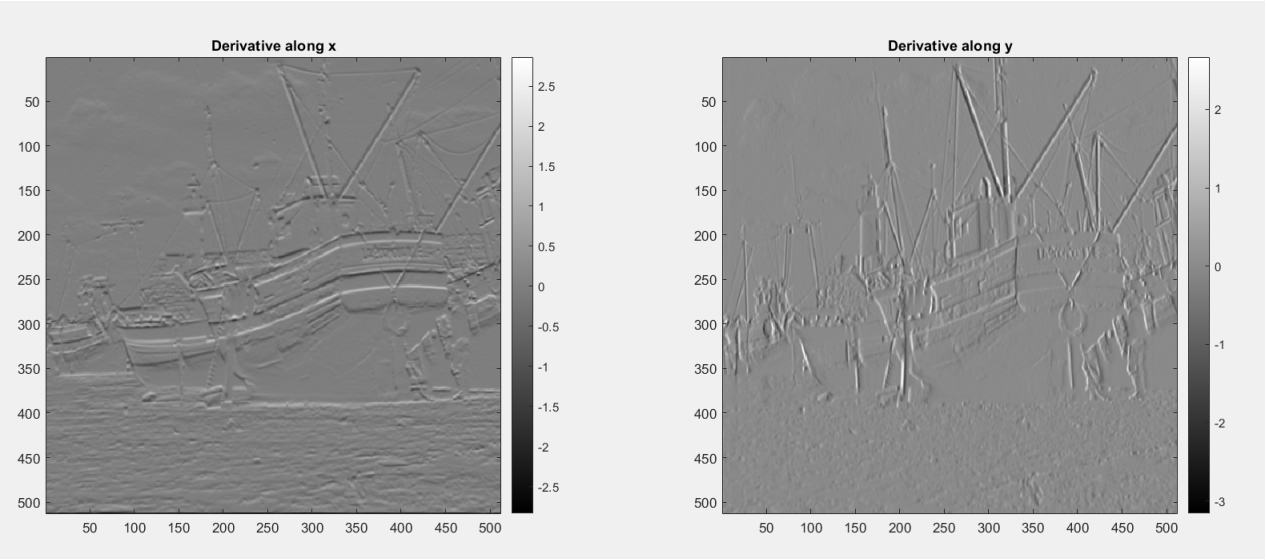

Figure 1: Derivative along X and Y

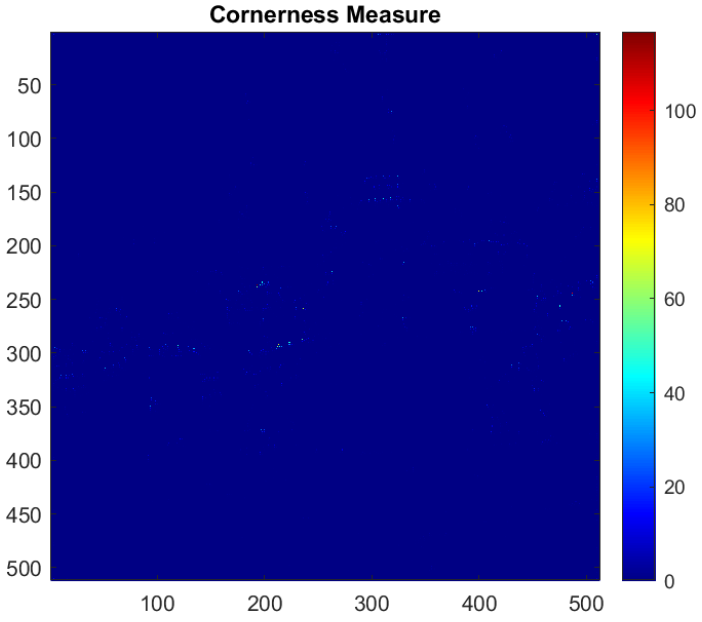

Figure 2: Cornerness measure

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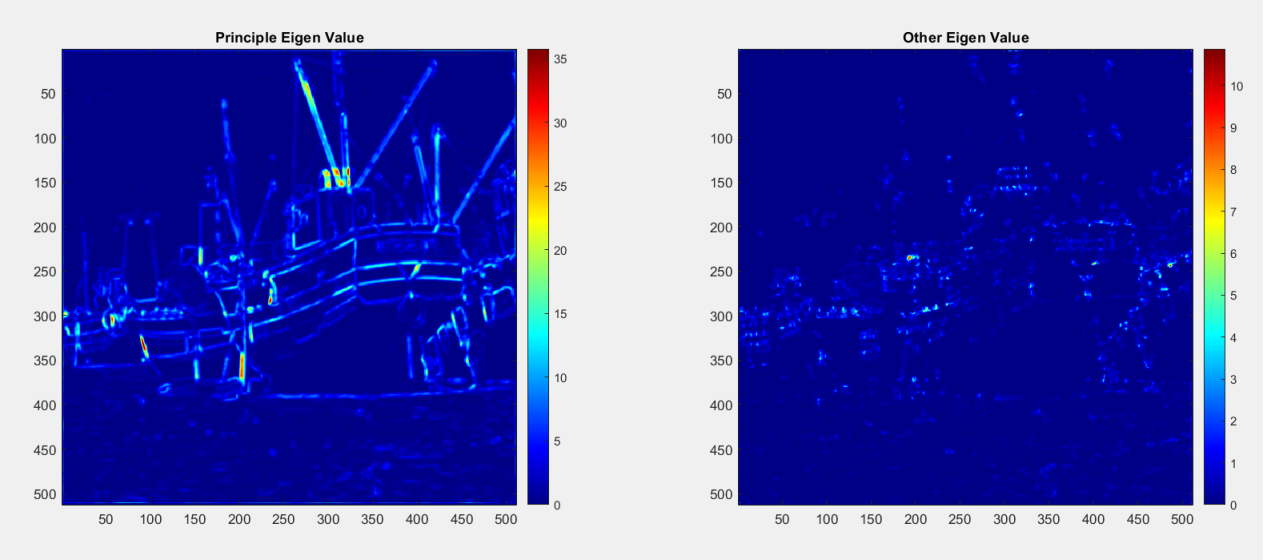

Figure 3: Eigen values

Code Usage

The main file myMainScript.m is divided into 2 parts.

- Firstly we use gaussian filter to smoothen the image. Then we use sobel filter to get the derivative along X and Y directions. Then we calculate the cornerness measure image using myHarrisCornerDetector.m function.
- The second part uses the technique of non-maximal suppression to get the final output.