CS 663 - Fundamentals of Digital Image Processing
Assignment 3

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1 Harris Corner Detection

1.1 Input

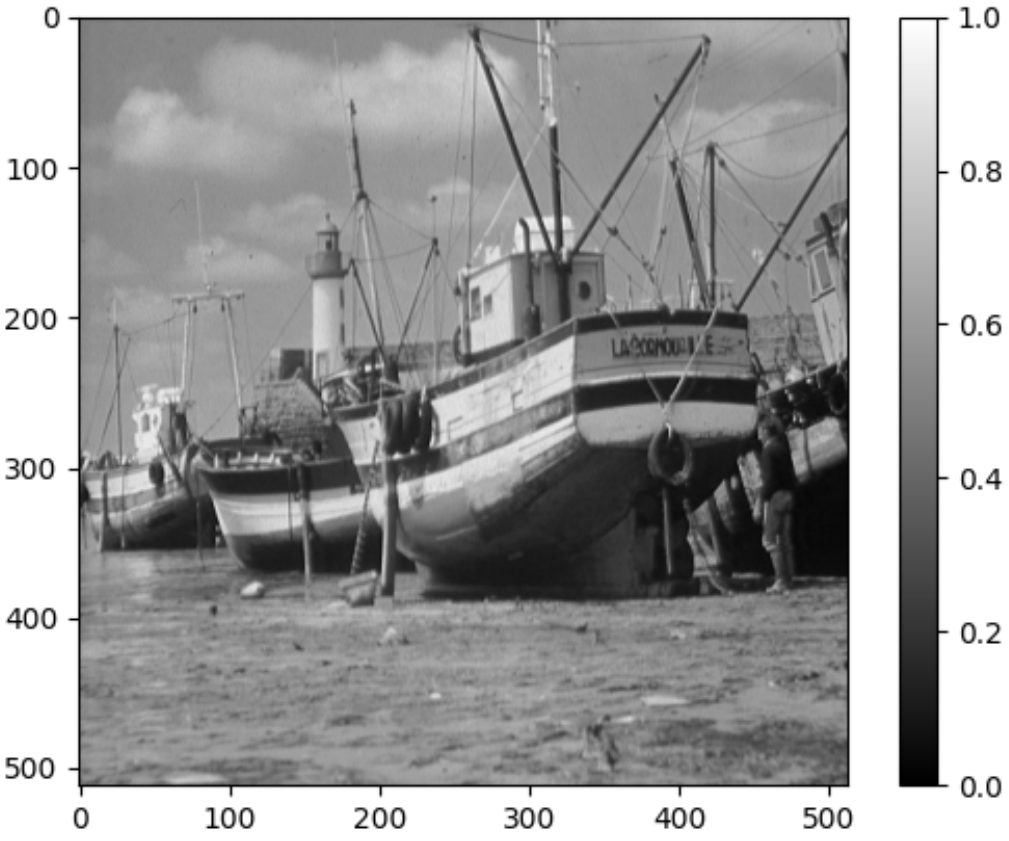

Figure 1: Input Image

1.2 Image Derivatives

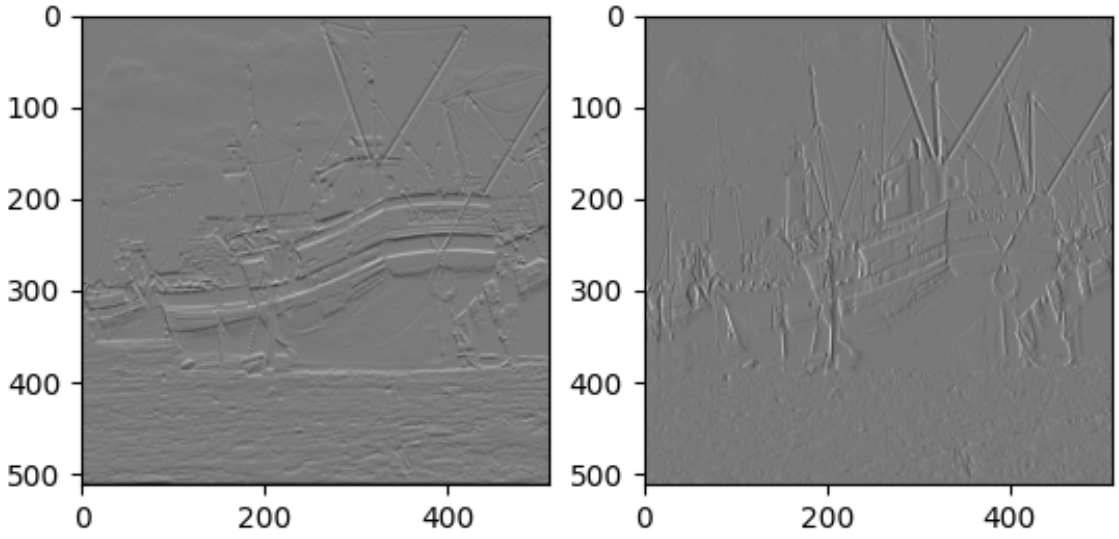

Figure 2: Y and X derivatives of input image

1.3 Eigen Values of the Image Structure Tensor

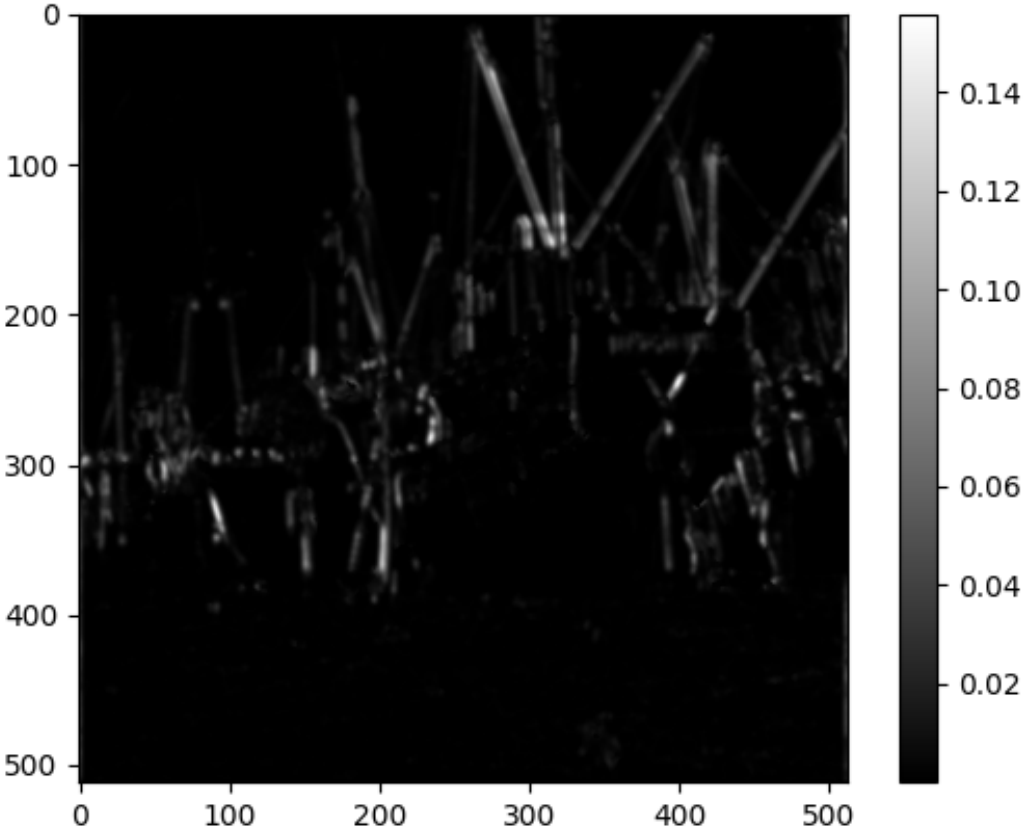

Figure 3: Principle Eigen Value of Structure Tensor

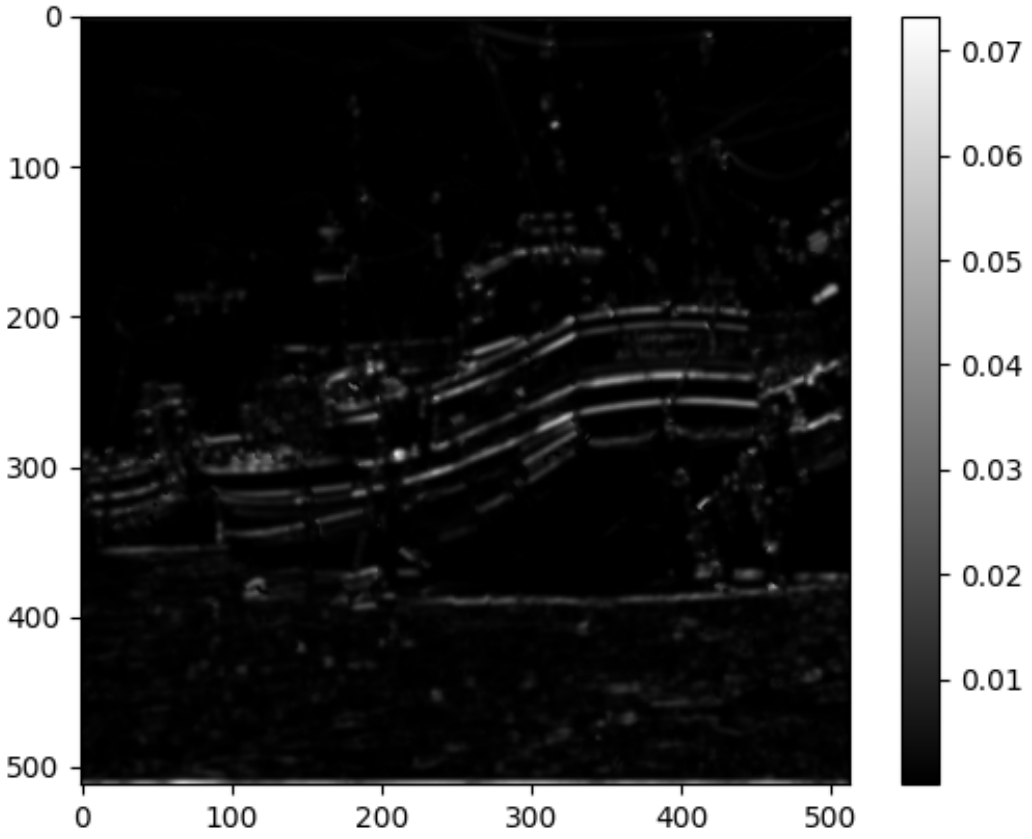

Figure 4: Other Eigen Value of Structure Tensor

1.4 Cornerness

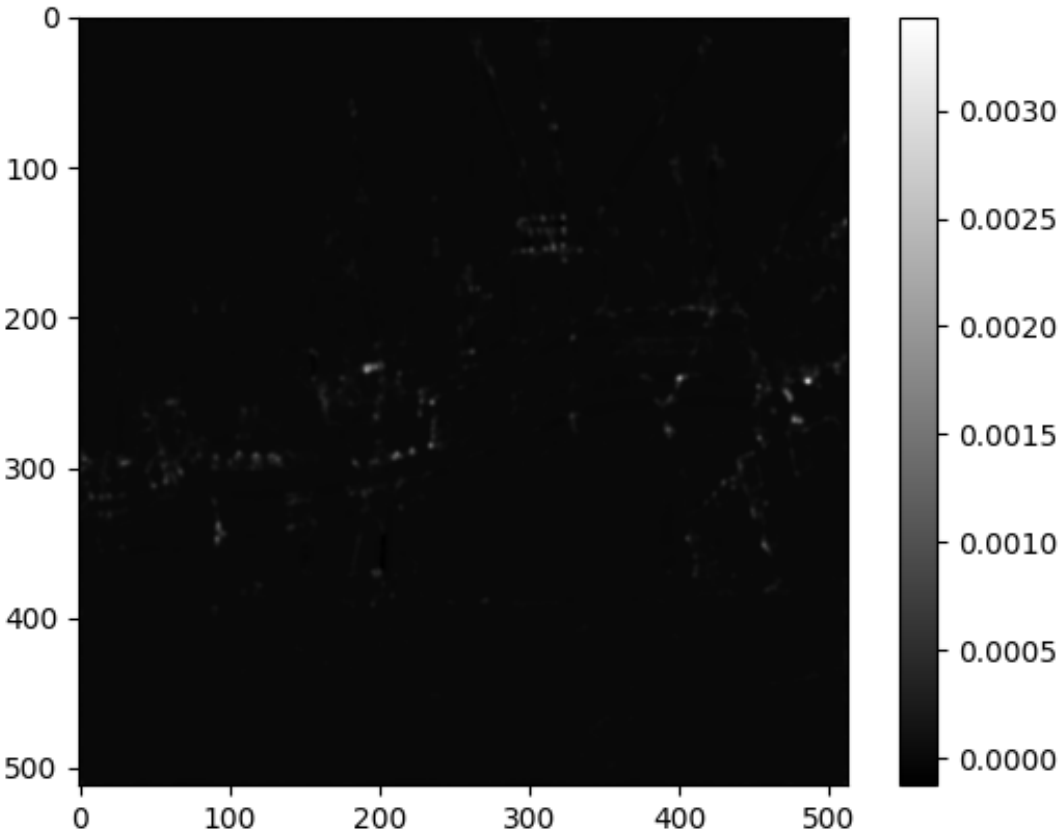

Figure 5: Cornerness measure of image pixels

1.5 Parameters Used

Constant in cornerness measure -

$$k = 0.01$$

Std deviation of Gaussian applied before computing image gradients

$$\sigma_1 = 0.5$$

Std deviation of Gaussian applied before calculating the eigen values and cornerness

$$\sigma_2 = 1.5$$