ECE/OPTI 532, Fall 2020

Homework 3 Assignment: Hough Transform

Due Thu. Sept. 8 at 5:00 pm

Write a computer program to perform the Hough transform to detect straight lines. Write your own code for the steps of the algorithm; don't use existing Hough-related functions. Use the rho/theta parameterization. Use about 100-by-100 resolution for the Hough array. Apply your program to the `edges.png` edge map that is provided. Write the Hough array (scaled to a [0,255] range) to a file as a grayscale image to help you debug the program.

Submit the following items:

- Your commented source code files.
- The Hough array stored as a grayscale image, scaled so that the smallest value is 0 and the largest value is 255.
- What is the number of significant lines that should be kept?
- What is the threshold value that should be used?
- A sketch (by hand or by computer) of the most significant lines that were found, along with the (rho, theta) values for those lines.