

CSL 783 Assignment 1b (For group 2)

Canny Edge Detection in Images

In this assignment you have to implement the Canny Edge Detector which we have discussed in the class.

This would involve the following steps :

- a) Convert to grayscale : Convert the color image into grayscale.
- b) Noise Reduction : Use Guassian filter to blur the image, hence reduce the noise.
- c) Compute Gradient magnitude and angle : use vertical and horizontal edge detectors like sobel operator. Round off the angles to 4 main directions 0 , 45 , 90, 135 degrees.
- d) Non-maximal suppression : Aim is to keep only one pixel wide edges by keeping pixels having highest gradient magnitude on the edge.
- e) Hysteresis thresholding : Aim of this step is to filter out the noise.

You can choose your own images which would contain simple objects like chair, face, car (not outdoor scenes). Choose your parameters(sigma of the Guassian convolution, high threshold, low threshold) based on the sample images you choose. Show the input image and detected edges side by side. You can use MATLAB functions only for first order edge detectors and averaging filters.

Submit the MATLAB code along with proper documentation by 22.08.2014. The code must contain title of the assignment, your name, entry number and date of submission at the top of the assignment. It must include a statement indicating that the assignment has been done solely by you and is not copied from another source. Submissions done after the due date would receive zero credit.



