Assignment 02
Computer Vision

Maximum points: 6 marks

(part 1) (02 marks)

In this assignment, you are going to implement an edge detector for the image given with the assignment. For edge detection you will implement the Canny Edge detection method. The Canny Edge detection consists of these steps:

- Step 1: Smoothing
- Step 2: Gradient calculation
- Step 3: Non-maximum suppression
- Step 4: Hysteresis thresholding

Implement all the above steps in Python. Only Jupyter Notebook code will be accepted.

(Part 02) (02 marks)

For step 02 in part 01 we normally use Sobel Operator in Canny Edge detector. **Instead of Sobel use Prewitt and Scharr operator.** Compare the edged detector you developed in part 02 with part 01, by showing the results. Give your final remarks why Sobel operator is giving better results than Preweitt and Scharr operator. Add your remarks in the comments in Python code.

Part (03) (02 marks)

Change the strategy of thresholding (step 04) in part 01 to normal thresholding. Again, compare your results with the one you developed in part 01. Give final remarks why results with hysteresis thresholding are better than conventional thresholding. Add your remarks in the comments in Python code.