CSCI-B456 – Image Processing
Spring 2018

SCHOOL OF INFORMATICS, COMPUTING, AND ENGINEERING
INDIANA UNIVERSITY

InClass Exercise 7

Due by 3/6/2018, Tuesday Midnight through Canvas

***Requirements**: Please ensure that all source code is tested properly and follows general code readability guidelines (i.e., includes proper variable names, adequate comments as well as brief description of your logic or pseudocode/algorithm used). Submit all files including any images.*

Part 1: Line Detection

Note – All the kernels can be found on slide 27 of Lecture Notes

(a) Line Detection Kernels:

Perform Line Detection on line_image.jpg using line detection kernels. Detect the following type of lines in the image:

- Horizontal
- +45°
- Vertical
- -45°

(b) Kirsch Compass Kernels:

Perform Line Detection on line_image.jpg using Kirsch Compass kernels. Detect lines in following directions:

- North
- North West
- West
- South West
- South
- South East
- East
- North East

Part 2: Edge detection

(a) Canny:

Perform Canny edge detection on **lenna.png, cameraman.png and coins.png** using the built-in function "**edge"** of MATLAB for the following threshold values:

- 0.1
- 0.3
- 0.5

(b) Log:

Perform Log edge detection on **lenna.png, cameraman.png and coins.png** using the built-in function "**edge"** of MATLAB for the following threshold values:

- 0.005
- 0.01
- 0.02

Helpful Link - https://www.mathworks.com/help/images/ref/edge.html