EEE-6512 Image Processing and Computer Vision
Fall 2017 Extra Credit #2
November 20, 2017

Due: December 1, 2017, 11:59 PM

This assignment should be completed individually by the student. Late submissions will not be accepted. Proper citation should be provided for any references used.

Part I Textbook Questions [25 points]

Answer the following questions from the textbook:

11.4, 11.27, 11.21, 11.28, 11.35

Part II MATLAB Programming [25 points]

You are to write a function *circle_line_detect()* which accepts a grayscale image stored in a matrix as input and returns a pseudo-color image in which pixels that are part of lines are indicated as red and pixels that are parts of circles are indicated as green. All other pixels should have the same grayscale value as in the input image. To detect the circles and lines, you are to use the Hough Transform. You are not allowed to use built-in functions for the circle/line detection, but you may use built-in functions for any preprocessing that may be necessary.

To receive full credit for this assignment, you should submit two files. 1.) A document containing answers to the textbook questions and the results obtained from Part II. An M-file containing commented MATLAB code for the *circle_line_detect()* function. Students should ensure that their M-files execute without errors to avoid receiving point deductions.