EEE-6512 Image Processing and Computer Vision
Fall 2017 Homework
November 7, 2017

Due: November 20, 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 [50 points]

Answer the following questions from the textbook:

10.1, 10.6, 10.7, 10.9 (**10 points**), 10.10, 10.32, 10.37, 10.38, and 10.43

Part II MATLAB Programming [50 points]

Please read requirements for each function carefully. Solutions that do not follow provided specifications will not receive credit.

You are to write a function *regiongrow_seg* which accepts an intensity image stored in a matrix and segments the image using the region growing based segmentation algorithm discussed in the text. The function should display and return a pseudo-color image representation of the segmentation. You should assume that you have at most 50 different regions in your output image. Test your program on the '*flower.pgm*', '*swan.pgm*', and '*tools.pgm*' images provided for homework #2.

To receive full credit for this assignment, you should submit two files. 1.) A document containing answers to the textbook questions as well as displays of the original input images and the resulting pseudo-color segmented images (.DOC, .DOCX, or PDF file) 2.) An M-file containing commented MATLAB code for the function *regiongrow_seg* and any additional functions you implemented.