

CSCI 8820 Computer Vision and Pattern Recognition

Assignment 3, Due Friday March 19, 2021 by 11.59 pm (23:59 EST)

For the three grayscale test images show the result of the following thresholding algorithms:

1. Thresholding using peakiness detection. *Explain clearly the evaluation criterion used to select the pair of grayscale peaks and the intervening valley.*
2. Iterative thresholding.
3. Adaptive thresholding where the original image is divided into 4 equal-size subimages. Use iterative thresholding within each subimage.
4. Dual thresholding with region growing. Explain how you would choose the two threshold values automatically from the histogram. *Explain clearly the logic behind the heuristic(s) for selection of the two threshold values.*

In your submission include the following:

1. A well documented hardcopy of the source code.
2. Hardcopies of the gray scale images and the resulting image from each of the thresholding algorithms.
3. Comments on the results obtained in each of the above cases.
4. Upload all the above items as a **single PDF file** to the specified ELC dropbox. *Please make sure that the PDF file contains your name and UGA ID Number on the first page.*

The three grayscale test images (in .img format) can be downloaded from the following URLs:

<http://cobweb.cs.uga.edu/~suchi/test1.img>

<http://cobweb.cs.uga.edu/~suchi/test2.img>

<http://cobweb.cs.uga.edu/~suchi/test3.img>

The above files are also available in ELC in the *Images* subfolder within the *Assignments* folder. These image files are in the same format as the image file `comb.img` that you used in Assignment #1.

NOTE: Only submissions received in the ELC drop box by the stated deadline will be considered. Submissions received after the deadline via email (or any other means) will **not** be graded and will be assigned a zero grade.