EE 4065 – Embedded Digital Image Processing
Homework 3

Due: December 19, 2025. 23:59 pm

- Form a GitHub repository for the course with your course partner. Do not share it with your friends.
- You will post your homework documents (report, codes, results) via this repository for grading.

Q1-) (20 points) This question is on Otsu's thresholding method.

a- Form a C function on the microcontroller to calculate Otsu's thresholding method on a given grayscale image.
b- Form a grayscale image of your choice with appropriate size on PC. Transfer it to the STM32 microcontroller. Apply Otsu's thresholding method on it. Return the thresholded image back to PC. Display your results in Python there.

Q2-) (20 points) Repeat Question 1 to color images.

Q3-) (60 points) This question is on morphological operations.

a- Form C functions on the microcontroller to apply dilation, erosion, closing, and opening on a given binary image.
b- Use the binary image formed in Question 1. Apply morphological operations on it. Return the morphological operation results to PC. Display your results in Python there.