

# CSc 8830: Computer Vision

## Module 2 Assignment

### **Submission in Classroom:**

Manage all your code in a github repo for each assignment. Provide a link to the repo in the PDF document. You can choose to program in either C/C++ or Python or MATLAB. Submit the script with clear commenting and ReadMe documentation on top of each script to execute the script.

Create a working demonstration of your application and record a screen-recording or a properly captured footage of the working system.

Upload the PDF document and video in the Google classroom submission. (copying the script in the document is not required; GitHub repo must be accessible)

### **For parts that require or ask for "solve by hand" or "show by example" methods:**

convert your problem solving by hand into a digital format (typed or scanned only. You can use camera scanner apps) and embedded/appended into the final PDF documentation. Camera images of paper worksheets will NOT be accepted

## **Question (do each step sequentially)**

Step 1: Perform the camera calibration using built-in tools in OpenCV or MATLAB – use a smartphone camera for this assignment.

Step 2: Implement in Python or MATLAB, a script to find the real world 2D dimensions of an object using perspective projection equations.

Step 3: Validate using an experiment where you image an object using your smartphone camera from a specific distance (choose any distance greater than 2 meters and ensure you are able to measure it accurately) between the object and camera.