**CS 4391 Spring 2023**

**Assignment 1 – OpenCV & Image Filtering**

**Due Date: Feb 26th, 2023 11:59 PM**

In this assignment, you will be implementing some basic filters to images and record the result image.

Many of the algorithms you will be implementing as part of this assignment are functions

in OpenCV (Open Computer Vision Library). You are **NOT** allowed to use (call) these

functions in this assignment, unless otherwise specified. You may, however, compare your

output to the output generated by these functions to make sure you are on the right track.

You can choose either C++ or Python for the implementation of the program. For the given image in this assignment, please apply the following filters and save all the output results (save the output images):

* 1. A 7 \* 7 box blur filter;
  2. A 15 \* 15 Gaussian filter; (use this link to calculate the filter: <https://observablehq.com/@jobleonard/gaussian-kernel-calculater> )
  3. A 15 \* 15 motion blur filter;
  4. A 3\*3 Laplacian sharpening filter;
  5. Canny Edge detection filter.

**Submission Instructions:**

Please submit your source code and result images to eLearning ONLY. (Do NOT submit your project or other files)