CS9645b Assignment 3

Due Friday April 3ʳᵈ 2020 at 11:00pm

Monocular Camera Calibration

This assignment consists of writing a program that uses OpenCV to calibrate a single camera. The calibration images are located in <u>this archive</u>. These are images of a calibration pattern in which the squares have sides of 3 cm. Your program will read these images, calibrate the camera, and output the intrinsic parameters. That is to say:

- The camera matrix containing the 2D coordinates of the optical center and the two focal lengths (one in horizontal pixel size, and the other in vertical pixel size)

- The five distortion parameters

Do not use scientific notation to report these results. The intrinsic parameters and the calibration techniques are explained in the <u>OpenCV calibration documentation</u>.

What to Hand In

1. The source code for the program. The program must be well structured and documented. The program should output the camera matrix in an easily readable format, along with the lens distortion parameters.

2. A report with a presentation page, containing the camera matrix and the distortion parameters. This report must be well written and be in pdf format.

3. Submit these files with OWL, on or before the deadline.