CSci 4270 and 6270
Computational Vision,
Spring Semester, 2021
Lecture 02 Exercise
Due: Monday, February 1, 2021 at 12 Noon EST

Guidelines

Lecture exercises are short problems designed to push you to engage with the material from each lecture. They are intended to each require well less than an hour of your time. Solutions are to be uploaded through Submitty. Note that no late lecture exercises are allowed. Instead, each student will automatically have their two worst exercises dropped.

They will be graded on a scale of 0-3:

- 0: no submission
- 1: some submission, but not working at all
- 2: partially working, but non-trivial errors,
- 3: mostly or completely working.

Submission instructions will be posted will be posted as soon as they are ready.

Problem

Write a Python script to read a color image and write a new image with the command line

```
python lec02_ex in_img out_img
```

Here `in_img` is the input file and `out_img` is the output image file. The script should read the image and create two copies of it: I_h should be a resized version with half the number of rows and columns, and I_q should be a resized version with one-fourth the number of rows and columns. The output image should show the original image with I_h written over top of it (and centered) and I_q also written over top of I_h and also centered. Here is an example:


You should provide some light error checking in your code to make sure the command-line is correct and the image file is read properly, but we will not test these.

You need to be particularly careful of ordering the width and height dimensions. The tuple sent to `cv2.resize` along with the image expects the width dimension before the height dimension, while the NumPy indexing has the height dimension first.