ComS 401: Projects in Computing
Lab Assignment 4
Submit in electronic form (see details below).

To introduce you to OpenCV, we will do three fairly simple tasks. For this part you must submit your results in electronic form on a web page.

1. **Edge Detection**

   Start with finding a JPEG image of yourself. If you don't have one already find a webcam and take one. Now write a complete C/C++ code using openCV that reads your image, performs edge detection on it, and then saves the result to another JPEG file. Post your original image, your edges image, and your code on your web page.

2. **Putting a caption on a movie**

   For this task you must first find a digital movie (on Windows you can only use the AVI format; on Linux you can use MPEG if you compiled openCV with ffmpeg; see the online tutorials for more details). If you don't have a movie we posted some that you can download from the wiki page. Once you have the movie, write a program that uses openCV and reads the video one frame at a time, prints your name on each frame, and saves the video to another file with your name on each frame.

   Post your original video, your results video, and your code on your wiki page. If you choose to use your own video please choose a small one ($\leq$ 2M) to save web space. If all else fails, just compress your videos in zip or tar.gz files before you upload them.

3. **Blurry Videos**

   This task is very similar to the previous one. Use the same input video as before. This time, however, you need to add a slider to your openCV window which controls the amount of blurring/smoothing performed on each frame. Your application should be able to save the movie while you actively change the amount of blurring by dragging the slider with the mouse. The resulting movie should start normal, go blurry, and then go back to normal.

   Post only the resulting blurry movie on your web page (the original should be the same as in 2). Also, post your code.