Progress Report

I was fortunately able to get a basic implementation of the Viola Jones algorithm up and running with little trouble. Given this advance, for the sake of comparison and reference, I have also decided to implement the Viola Jones algorithm in single threaded and multi-threaded C++ code. Thus far, I have implemented single threaded and multi-threaded versions of the algorithm in C++, and have started to implement a CUDA based version. Performance characteristics are so far behaving as expected.

Goals and Deliverables

My goal remains the same, to achieve real time processing of an image (~ 30 Hz). I am on track with my original schedule, reproduced below for reference. I will be using an NVIDIA GeForce 1080 GTX and CUDA and C++ code to implement this project, as speed is of the essence.

Schedule

Week 1 (4/10 – 4/15)

- Understand OpenCV's parsing of cascades and write a simple program that demonstrates proper parsing of the cascade data structure. 
- Begin building necessary framework to facilitate testing 
    - Gather test images
    - Build non-processing parts of the program, such as sections dealing with I/O, and any further cascade processing

Week 2 (4/16 – 4/22) 

- Finish testing framework 
- Begin developing kernels to process image

Week 3 (4/23 – 4/29)

- Finish image processing kernels
- Possibly begin to explore other avenues of parallelism

Week 4 (4/30 – 5/6)

- Finish implementing any extra features

Week 5 (5/7 – 5/9)

Murphy's law recovery period