CSci 4962 and 6270 — Computational Vision
Spring Semester, 2014-2015
Final Project

Introduction

You may work on the final project individually or with one other student. Teams of more than two are not allowed.

There are two types of projects. The first is to implement, test and analyze a computer vision algorithm that we have NOT discussed in any significant detail in class. The second is to find an interesting application of computer vision and then to propose, implement, and test a solution. In short, pretty much any problem or application of computer vision is fair game for the final project.

You may use existing implementations that you find on-line, and you are encouraged to do so since it will increase the sophistication of what you can accomplish. You will be judged on what you do yourself, so using existing implementations should not be viewed as a substitute for your own effort.

Submissions

There will be several due dates, geared toward making sure you have a viable project and are progressing toward its completion. In each case, no extensions will be given without an excuse from the Dean of Students office. Moreover, we reserve the right to request refinement of the first two submissions before accepting them for credit.

- **Thursday, April 23, 5 pm — Initial proposal:** Provide a one-to-two paragraph overview of the problem you are addressing and the techniques you are going to use to solve the problem. This must include an outline of (a) your source(s) of image or video data, and (b) the software you have found (if any) to help you address the problem. This will be emailed to Jason Parham at *parhaj@rpi.edu*.

- **Tuesday, May 5, 5 pm — Progress report:** Provide a one or two page summary of your progress thus far, including the approach you are taking to solve the problem, and the current state of your implementation. If you have found new sources of software to assist you or new images to test, you should describe these here. Again, this should be submitted to Jason.

  Note: You are strongly encouraged to submit your initial proposal and your progress reports early. We will try to give you feedback within 24 hours if at all possible. You are also encouraged to seek our help with ideas, project scope and technical issues before these deadlines.

- **Thursday and Friday, May 14 and 15 — Demos:** You will have a 20-minute time slot to demonstrate your final projects. You should

arrive at my research office (Materials 330B) with your laptop opened up and ready to run your software. You will choose your times for these demos in class on Friday, May 1.

- **Friday, May 15 at 1 pm (NOTE THE TIME)— Final submission:** Final write-up and code due via email to Jason. The write-up should describe the problem you are addressing, the data, the implementation, and the results. It should conclude with an analysis of the strengths and weaknesses of the solution, including a discussion of the properties of the image data and their effect on your ability to solve the problem. Importantly, it must also include a technical explanation — in your own words — of a method from computer vision (a) that we did not cover in detail in class and (b) that you applied to your problem. The write-up should be no more than 10 pages, single-spaced, 12-point font. Less is fine if you have completed your explanation in sufficient detail. Showing a lot of image results can drive the length higher, of course.

If you would like to do your final demo before the 14th, you are welcome to arrange a time with us.

Grading Criteria

Here is a break-down of the point assignment in computing your grade on the project.

Submission	Points
Initial proposal	10
Progress report	15
Demo and final submission	100

Grades on the proposal and on the progress report will be based primarily on your establishing a good direction and making reasonable initial progress. For the demo and final submission, we will be judging your overall effort, the quality of your code and results, and the thoroughness and insight shown in your presentation to me and in your write-up.