Final Project

Note that project proposals are due Wed., Mar. 26, 2014. However, you can begin work on the project as soon as you are approved. The sooner you submit your proposal to me, the sooner I can approve it. While final projects will be due Wed., Apr. 30, 2014 at 11:59pm, you should be prepared to briefly present your project on Wed., Apr. 30 during our final exam timeslot of 8:00am to 10:30am.

Guidelines for the Proposal

Loosely stated, the guidelines for this project are “complete a geometric modeling research project, potentially using the tools we’ve developed in class.” In particular, I highly recommend that you build on techniques relevant to your own research area. The project could involve researching and comparing a collection of techniques, implementing a set of experiments that help understand some geometric feature, or selecting a geometric modeling research paper of your choice and implementing it.

In summary, your proposal must include a plan for the project. It should include, at a bare minimum:

- A description of the technique or approach you’d like to explore.
- What are the goals of the research. Do you believe this technique will enable something new? Are there hypotheses that you plan to test?
- Any relevant data sets your plan to use.

Submit the proposal to me as a 1-2 page document via handin. After any modifications agreed upon with the instructor, the proposal will be your “contract” for the project.

If you need suggestions for projects, email me. However, be warned, I may suggest very complicated papers to implement! I would greatly prefer that you select a paper or research area that is of interest to you.

Guidelines for the Project

After your proposal has been approved, you may begin working on the project. Just like each assignment, you will have to turn in any relevant implementation pieces. You may choose any reasonable environment for development, either building on the work you’ve done in the class or starting fresh.

In addition, a project report clearly indicating three things must be included. Treat this experience like a small research paper that you could eventually submit. There should be a well-defined introduction and motivation, a description of any background research to provide context, any new mathematical and/or implementation details, and results of the technique. You should describe what knowledge you gained in implementation and anything new you learned along the way, as well as challenges you had to overcome. Finally, discuss and evaluate any relevant parameters, the quality of the technique, and any flaws along the way.
There is no requirement to, but I recommend that you use a standard latex format, in case you decide to submit this research project for publication. Be sure to include the minimal amount of information necessary to duplicate to work.

Finally, be prepared to present a brief presentation of your work. Ideally, we’ll do this on the last day of lecture or on the final exam slot. Expect no more than 15 minutes of presentation time, including questions.

**Grade Breakdown**

Given the 25 points of the project, I expect to evaluate you on your proposal (3 points), successful completion of the proposed work (12 points), project report (6 points), and presentation (4 points). This numbers are estimations and up to the instructor’s final discretion.