Final Project

Due Dates

Project Proposal: Thursday, March 7

Project Submisstion: Thursday, March 23

Rendering Prize: 4pm, Friday, March 24

Your final assignment is to implement an advanced rendering algorithm of your choosing. The final project is your chance to investigate an area that interests you in more depth.

Think about following when choosing a project:

- What are your goals? Try and phrase this as specific questions that you would like to know the answers to, e.g. "How do I model reflection from surfaces with fine geometric structure, such as fur?"
- What unique imagery would convincingly demonstrate that you have accomplished your goals? Try and keep this in mind throughout your project, since in computer graphics our work is often judged by the images we make.
- What has already been done in this area? You probably won't have time to completely investigate this, but you should definitely spend some time reading research papers. We can help you with finding appropriate references. When you read a paper, look for what has not been done as well as what is already understood; think about new things that you could try.
- Depending on the scope of your goals, you may want to work in a group. Does your project split naturally into several pieces? Look for projects where each person's work is separable, and yet everyone contributes toward a shared goal that could not be accomplished individually.

Project Proposal

As a first step you should write a one to two page project proposal. Do this as soon as possible, but no latter than March 7. We will provide feedback as to whether we think your idea is reasonable, and also try to offer some technical guidance, e.g. papers you might be interested in reading.

This proposal should state the goal of your project, motivate why it is interesting, identify the key technical challenges you will face, and outline briefly your approach. If you are implementing an algorithm described in a particular paper, provide the reference to the paper.

If you plan on collaborating with others, briefly describe how each person's project relates to the others.

Grading

The final project will count 1/3 (or more, if based on our judgement, we consider the project truly outstanding) towards your final grade in the course. We will consider strongly the novelty of the idea (if it's never been done before, you get lots of credit), your technical skill in implementing the idea, and the quality of the pictures you produce. Mega-lines of code does not make a project good.

When you are finished with your project your should submit the source for your system and any test scenes and images that you have created. You should also submit your original project proposal, and an updated version that reads as a two to three page project summary, more or less of the same format as the project proposal, but with a brief results section and any conclusions or comments you have based on your experience.

You are permitted to work in small groups, but each person will be graded individually. A good group project is a system consisting of a collection of well defined subsystems. Each subsystem should be the responsibility of one person and be clearly identified as their project. A good criteria for whether you should work in a group is whether the system as a whole is greater than the sum of its parts!

Rendering Prize

To provide additional incentive, we are offering several prizes for the best images produced as part of the final project.

Grand Prize. An all-expense-paid trip to SIGGRAPH '95 in Los Angeles for one.

First Prize. A dinner for two at Fuki-Sushi in Palo Alto.

Honorable Mentions. A videotape or book on rendering.

The jury, to be named later, will consist of computer graphics experts from both industry and academia. Both technical and artistic merit will be used by the judges. To get an idea of our expectations, check out the images produced by past winners on `http://www-graphics.stanford.edu/courses/cs348b-competition/`.

Some ground rules: You are welcome to use any commercial modeling packages to build your scene geometry. You are allowed to submit up to three entries. Groups may submit $3n$ entries where n is the number of members of the group (you can work out the math if an individual of a group submits their own entry). However, if a group entry wins a grand prize, the group members must split the prize.