

Final Project for CS6366 Computer Graphics

Topic

The choice of topic is up to you. The only specific requirement is that it should be related to the topics of Computer Graphics. It does *not* have to directly involve topics that we cover in class. Since you will spend a significant amount of time working on this project, you should choose something both interesting and challenging to you. A list of suggested topics is given at the end of this document, with links to the related PDF files – they are from the book “Real-Time Rendering” (<http://www.realtimerendering.com/>). You may need to refer to the related papers given in the references.

Project Proposal

Your project proposal should consist of the equivalent of no more than two printed pages, and should be submitted on eLearning before the due time. Your proposal should include the following items:

- *Title* for project
- *Your Name*
- *Summary* – You should summarize the following items:
 - *Description of Problem* – What is it you are trying to solve/address?
 - *Your Proposal* – What is it you plan to do?
- *Goals* – You should give a list of final goals, specifying what you hope to accomplish by the end of the semester. Your goals should be as specific as possible. You are welcome to include more intermediate goals, as well as additional goals that you might achieve if your work proceeds better than expected.

Final Report

It is very important that you clearly and specifically state in your report what you have accomplished by the end of the semester. Be concise. I do not want to see code listings (except maybe brief sections to demonstrate a point), and I don't need to know every detail of the process you went through. Your final report should be well organized and should contain the following information, though the format and organization is totally up to you:

- Your *Name* and project *Title*
- *Problem summary* – Briefly summarize the problem you are dealing with and why it is important. This is likely to be a modification of your proposal.
- *Description of work* – Describe the work you performed. Include any major “dead end” paths of research and why they failed, and any major challenges you encountered.
- *Results* – Describe exactly what was achieved. State exactly what you have accomplished, giving concrete information (e.g. by charts, pictures, etc.) about what has been done.
- *Analysis of work* – You should analyze the work done from the standpoint of how successful you were on the project. You should include the following information: How well did you meet the original goals you set out? If you did not meet these goals, why not?

Some Suggested Topics and References

1. [Environment Mapping](#)
2. [Bump Mapping](#)
3. [BRDF \(Bidirectional Reflectance Distribution Function\)](#)
4. [Motion Blur](#)
5. [Reflections](#)
6. [Refractions](#)
7. [Shadows](#)
8. [Radiosity](#)
9. [Ray Tracing](#)
10. [Toon Shading](#)
11. [Silhouette Edge Rendering](#)
12. [Other Non-Photorealistic Rendering Styles](#)
13. [Particle Systems](#)
14. [Image Processing](#)
15. [Volume Rendering](#)

The Bibliography/References of the “Real-Time Rendering” book can be found at:
<http://www.realtimerendering.com/refs2.html>