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 and some related papers are given at the end of this document.

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.

Some Suggested Topics and References

1. Environment Mapping

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McReynolds, Tom, David Blythe, Brad Grantham, and Scott Nelson, *SIGGRAPH 99 Advanced Graphics Programming Techniques Using OpenGL course notes*, 1999.

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Kautz, Jan, Chris Wynn, Jonathan Blow, Chris Blasband, Anis Ahmad, and Michael McCool, "Achieving Real-Time Realistic Reflectance, Part 1" *Game Developer*, vol. 8, no. 1, pp. 32-37, January 2001.

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Hakura, Ziyad S., John M. Snyder, and Jerome E. Lengyel, "Parameterized Environment Maps," *Proceedings 2001 Symposium on Interactive 3D Graphics*, pp. 203-208, March 2001.

2. Motion Blur

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Wloka, Matthias, and R. Zeleznik, "Interactive Real-Time Motion Blur," *The Visual Computer*, vol. 12, no. 6, pp. 283-295, 1996.

Wloka, Matthias, "Implementing Motion Blur & Depth of Field using DirectX 8," *Meltdown 2001*, July 2001.

3. Reflections

Ofek, E., and A. Rappoport, "Interactive Reflections on Curved Objects," *Computer Graphics (SIGGRAPH 98 Proceedings)*, pp. 333-342, July 1998.

Hall, Tim, "A how to for using OpenGL to Render Mirrors," *comp.graphics.api.opengl* newsgroup, August 1996

McReynolds, Tom, David Blythe, Brad Grantham, and Scott Nelson, *SIGGRAPH 99 Advanced Graphics Programming Techniques Using OpenGL course notes*, 1999.

Nielsen, Kasper Høy, *Real-Time Hardware-Based Photorealistic Rendering*, Master's Thesis, Informatics and Mathematical Modeling, The Technical University of Denmark, 2000.

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4. Refractions

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Oliveira, Gustavo, "Refractive Texture Mapping, Part Two," *Gamasutra*, November 2000.

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Trendall, Chris, and A. James Stewart "General Calculations using Graphics Hardware with Applications to Interactive Caustics," *11th Eurographics Workshop on Rendering*, pp. 287-298, 2000.

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5. Shadows

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Nagy, Gabor, "Real-Time Shadows on Complex Objects," in Mark DeLoura, ed., *Game Programming Gems*, Charles River Media, pp. 567-580, 2000.

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6. Radiosity

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7. Ray Tracing

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8. Silhouette Edge Rendering

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9. Other Non-Photorealistic Rendering Styles

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