CAP 6701 Advanced Computer Graphics
Dr. Corey Toler-Franklin

Course Project Requirements

DUE: March 2nd, 11:59 pm Paper Abstract, Phase 1. Demo
DUE: March 14th, 11:59 pm Previous Work
DUE: March 21st, 11:59 pm Introduction and Overview
DUE: April 11th, 11:59 pm Illustration Layout
DUE: April 25th, 11:59 pm Slides, Source Code, Extra Credit Poster pdf

Overview | Details | Resources | Getting Help | Submitting

Overview

We have covered several advanced topics in computer graphics in class including *Realistic Image Synthesis*, *Computational Photography*, *Shape from Shading*, *3-D Scanning*, *Multispectral Imaging*, *Imaging Spectroscopy*, *Curves and Surfaces* and *Physics-Based Simulations* (Particle systems and Cloth Simulation). Your course project should implement research that demonstrates your understanding of one of these topics.

Details

Source Code A number of project ideas for each topic were suggested in class. You may pick from this list, or select a research paper from one of these topic categories to implement. You may use any coding framework you choose. However, be cautious about using APIs with high level graphics implementations. Your goal is to gain experience implementing complex graphics equations. Projects that simply call high level graphics functions will be down graded significantly. See me if you are in need of datasets or advice on API frameworks or debugging interfaces.

Technical Paper You will be required to submit your code as well as a written publication in SIGGRAPH format using the Latex template provided (posted to canvas). You should use the format used in the sample-sigconf.tex file template. Latex templates are used by high level conferences in computer graphics. Rather than summarize your project in a report, you must follow the techniques of technical writing covered in class. Each paper should have an abstract, introduction, previous work, results and analysis and conclusion section. The main body of the paper should have sections appropriately titled to discuss the technical details of your project. Your paper must have a teaser, at least one table and examples of results computed directly from your system. In addition, you must incorporate a minimum of one of each of the diagram types discussed in class - analytical, illustrative and didactic.

Class Presentation You must present a 20 minute presentation of your project in class. After your presentation, we will ask questions and discuss your work for an additional 10 minutes. Throughout the course, I will provide you with tips on how to present your project. Use your research paper presentation and discussion session as a practice.

Evaluation Your work will be evaluated based on the following criteria (1) source code correctness and completeness 20% (2) complexity (more challenging projects will be rewarded) 10% (3) novelty and strategy for approaching the problem 10% (4) class presentation 20% (5) technical research paper 40%.

Resources

If you are not in the CISE department, and would like computer lab access, you can register for a CISE account at https://www.cise.ufl.edu/help/account. Labs are open 24 hours (see https://www.cise.ufl.edu/help/access). **Remember to back-up your work regularly!!!** Use version control to store your work. DO NOT PUBLISIZE SOLUTIONS.

Getting Help

Source Code Please do not re-invent the wheel. Use appropriate source code frameworks to get started. For example, if you are implementing complex material simulation using Monte Carlo Integration, start with a ray tracer (do not write one from scratch), and build your methods on top.

Discussion Group Post questions to Canvas (everyone benefits in this case), or send me an email at ctoler@cise.ufl.edu. I will check both daily.

Office Hours Stop by my office, CSE 332 (or lab CSE 319) during office hours MWF 11:45-12:45 or make an appointment.

Collaborating You may collaborate with one partner on the final project.

Submitting

Upload your course project source code, slides and technical paper to canvas as a single zip file. For extra credit, you may include a poster of your work in pdf in your zip file. See examples shown in class and displayed in my lab.