CPSC 599/601 - Computer Haptics

Course Project Information

Demo & Showcase Date: **Monday, April 15, 1:00–4:00 PM**

The course project is worth a total of 40% of your final grade in CPSC 599.86/601.86. Computer Haptics is a project-based course, meaning that the largest component of your final assessment is the course project. As such, you are expected to pursue an in-depth study of some aspect of computer haptics.

The suggested final project for the course is a haptics-enabled video game, simulation, or implementation of an advanced algorithm or technique described in a research paper. Some examples are interactive physics/dynamics simulations, collaborative or competitive haptics over a network, and rich haptic environments that require a combination of rendering techniques. Alternative projects may be undertaken, subject to instructor approval, provided they are of comparable scope and sufficient depth.

Course projects may be completed individually or with a partner as a team of two. The final project should use either one or two Novint Falcon haptic devices on a single computer or two networked computers, unless otherwise arranged and approved.

Grades for the final project will be allocated as follows:

- Project proposal (5 points)
- Project milestone (5 points)
- Project demonstration and report (30 points)

The requirements for each component are described in the sections that follow. **Note that late days may not be used for any component of the course project!**

Project Proposal (5 points)

Due Date: **Friday, March 15, 9:00 AM**

Create a four-minute presentation to describe your proposed course project to the class. If you plan on using slides, one to four slides will be both appropriate and adequate. Describe succinctly the goal of your project and the methods and algorithms you intend to employ to achieve that goal. Include pictures, diagrams, and references as appropriate. If possible, identify a milestone at a mark approximately half way to completion of the project to help you pace the work.

Submit your proposal on the course Desire2Learn site before the specified due date. You may simply submit your presentation slides, or if you prefer to receive more detailed feedback, you may submit a written proposal instead of, or in addition to, your slides. If you are working with a partner, one proposal for the group is sufficient.

The proposal will be evaluated on the clarity of communication and presentation of ideas. The instructors will use the proposal to ensure that the scope of your project is appropriate for the course, and will provide suggestions to help you formulate the best project possible.

Project Milestone (5 points)

Due Date: **Friday, March 29, 1:00 PM**

You will be expected to give a brief presentation of your project goals and intermediate results in class on March 29. We suggest you prepare two or three slides to help you describe your project to the class, but the most important aspect of this milestone project component is to show a demonstration of your project at its intermediary stage using screen captures, videos, and/or an interactive experience on the lab machines.

At this point in time, the fundamental aspects of your project should be in place and working reasonably well. You will receive credit for the project milestone if you are able to demonstrate substantial progress toward achieving your project goals by this milestone date. This week would also be an opportune time to schedule office hours with the instructors to discuss any challenges or issues you may have encountered thus far working on your project.

Project Demonstration & Showcase (30 points)

Due Date: **Monday, April 15, 1:00 PM**

The CPSC 599.86/601.86 final project demonstrations will be held in conjunction with the CPSC Showcase on April 10, 1:00–4:00 PM, in MacEwan Hall A/B. Please **register for the event** online at https://www.ucalgary.ca/cpsc/cpsc_showcase_2019_project. Guests from many different backgrounds will be invited to attend and experience your projects, and potentially assist with evaluating them, so prepare the most polished demonstration you possibly can. The project showcase will also be the instructors' primary opportunity to evaluate your project.

Write a **one-page abstract** that succinctly describes your project and submit it on Desire2Learn course site by Sunday, April 14. This abstract will be printed and displayed, and will be the primary means by which the instructors and guests will have to remember your project. You are not be required to turn in a comprehensive project report so that you may focus your time on the implementation of the project instead. Final projects will be graded on creativity, technical merit, artistic merit, quality of implementation, and most importantly their use of or relevance to haptics.