Course Project Overview

The course project is required for graduate students and optional for undergraduate students. Students may choose to complete the project individually or in groups of two.

The article review is required for undergraduate students who do not undertake a course project. Students must complete the review individually.

The project and article review are worth 20% of the final grade. You are required to submit the corresponding documents electronically using UMLearn. Only pdf files will be accepted.

Course Project

The purpose of the course project is for students to select and explore a topic in computational geometry, to study a current research problem in that topic, to make a new contribution on that topic, and to present the results, in both a written report and a class presentation.

The nature of the project can vary; examples include:

- writing a survey paper on a current topic in computational geometry,

- writing code to implement and compare the performance of algorithms for solving a problem in computational geometry, or

- exploring possible solutions to an open problem on a given topic in computational geometry.

The components of the project include:

1. a written preliminary project proposal

    - 1–3 pages
    - due October 9
    - Describe the research topic you have selected.
    - Briefly motivate your topic and mention recent significant related results and corresponding publications.
    - Describe your proposed project.
    - Include a brief list of milestones and dates by which you plan to complete these.

2. a final written report

    - 8–12 pages
    - due December 6

- Your report should be formatted like a published research paper, including an abstract, an introduction that motivates your work and includes a clear overview of your project, a section describing related work, a detailed description of the results of your project, a conclusion which may include a discussion of possible future research directions in which the project could be extended, and a bibliography.

- Write in your own words! Be careful of plagiarism.

3. a class presentation

- 10–15 minutes

- in class on November 29–December 6

- Provide an overview of your project for the class. You may use a laptop for your presentation.

Article Review

The purpose of the article review is for students to select and familiarize themselves with a current topic in the field of computational geometry by writing a summary of a recent research publication (e.g., a recent paper from the Proceedings of the Symposium on Computational Geometry).

The components of the article review include:

1. a written preliminary proposal

- 1 page

- due October 9

- Describe the paper topic you have selected.

- Write a short paragraph summarizing the paper's topic and why it is relevant to the field of computational geometry.

2. a final review

- 2–4 pages

- due December 6

- Your review should be formatted like a published research paper, including an overview, a clear description of the research questions addressed in the reviewed article, a discussion of motivation for the work and key related results, a summary of the main results and techniques used to achieve these, a discussion of future work and open questions that follow from this article, and a bibliography.

- Write in your own words! Be careful of plagiarism.

Academic Integrity

All sources must be cited and documented properly. Please speak with Steph Durocher if you have any questions regarding appropriate use of of reference and research publications.