Final Project Proposal (due 10/15)

DS-563 / CD-543 @ Boston University

Fall 2021

Possible Types of Final Projects

Possible final projects ideas include but are not limited to

- implementing an algorithm not covered in class and testing its practical performance on real–world data,

- creating an open–source implementation of one of the algorithms with easy to follow documentation,

- developing a new algorithm with good theoretical or practical guarantees.

The outcome of a project will be a short technical report, describing obtained results and conclusions. As opposed to programming assignments, you are allowed to work in teams of 2 or 3 students.

What Your Proposal Should Include

- State names and emails of all project participants.

- Describe your project and what you want to achieve. In particular, include the following:

  - If the goals of your project are mostly research oriented (be it experimental or theoretical), make sure to highlight sample questions you want to answer.
  - If you propose an experiment of specific type, consider stating your conjecture, i.e., what specific type of outcome you predict and why. (Don't be afraid to find out later that you were wrong.)
  - Make sure that the motivation behind questions you ask is clear.

- List briefly predicted milestones.

- If you implement anything, state what programming language you are planning to use (and perhaps why).

- If you are planning to make a publicly available implementation of an algorithm, state what license or licenses you are planning to use (e.g., GPL).

- Answer the following questions for group proposals:

  - How are you planning to collaborate?

- Will you have regular meetings to discuss the progress of the project? (You probably should!) How often will you meet? Will you meet in person or online?
- What collaboration tools will you use? (Examples range from version control tools to Internet messangers to tools for maintaining a task list.)

Try to be specific, but also keep the proposal concise. Do not use more than two pages with readable font.

Inspiration for the final project

- A list of other courses and materials on related topics on the webpage will be updated later today. Feel free to browse them to find an inspiration for your project.

- Sample project ideas are available on Piazza.

- You can use the first programming assignment as an inspiration for experiments in your own project.

Project adjustments.

While working on your project, you may find much better ideas for questions to ask or exact challenges to address. Feel free make adjustments that make the final output of your project as interesting as possible. However, if you decide to take the project in a completely different direction, please check with the instructor.

Submitting

Final project proposals should be submitted via Gradescope (entry code: BPDKV8). For the assignment, typed (vs. handwritten) proposals are encouraged. We suggest using LaTeX, which is very good for typing math, but other tools are acceptable too.

Be creative! Ask challenging questions.
Put your implementation through interesting tests.
Don't be nice to it. Try to break it. Apply it to interesting data sets.