# Final Project Guidelines

## Final Project Requirements

The final project in this course requires implementing, evaluating, and documenting a new research idea in the field of deep reinforcement learning. Students will be expected to prepare a proposal, milestone report, and final report. Students will also provide peer feedback on other groups' proposals and milestones.

## Deadlines

All materials should be submitted as PDFs on Gradescope and CMT by **11:59** pm on their listed deadline. See Ed for details on using CMT.

- **September 21**: proposal
- **October 5**: proposal peer feedback
- **October 26**: milestone
- **November 9**: milestone peer feedback
- **December 14**: final project report

## Proposal

The proposal should be a maximum of **one page**, and should describe the idea that you plan to explore for your project and the members of your group. One proposal should be submitted per group. Your proposal should at minimum answer the following questions:

1. Which tasks or problems will you study? Where will you get your data or simulator (or real-world system)?

2. What is the main research hypothesis your project will be investigate? All projects should at least attempt to evaluate novel ideas that pertain to deep RL or its applications.

3. How does the topic of your project relate to deep RL?

The proposals will be graded by course staff, and you will also receive feedback from your peers in a peer review process. The reviews will not impact your grade, but are entirely there to provide more feedback for you.

## Milestone Report

The milestone report should be about one page. You may include figures, but the total length must be one page or less. One milestone report should be submitted per group. Your milestone report should answer the following questions:

1. What experiments have you conducted so far?

2. Are there any changes to the research hypothesis or problem statement from the proposal?

The milestone report must provide details of at least one experiment conducted since the proposal. This experiment does not need to be successful, but you should have attempted something. If it did not work as expected, you should briefly discuss why. You are encouraged to attach a plot or figure. Like the proposal, the milestone report will be graded by course staff, and you will also receive feedback from your peers in a peer review process. The reviews will not impact your grade, but are entirely there to provide more feedback for you.

## Final Report

The final report should be in the style of a research paper, preceded by a one-page extended abstract. One report is required per group. The one-page extended abstract should summarize the main findings and accomplishments of your final project, while the main paper should describe and motivate the method in detail, and discuss the results, including any relevant figures or plots. The extended abstract may be submitted as a separate pdf file, or attached as the first page of the full report.

Successful reports will have a main body that is about eight pages in length, but there is no hard length limit or requirement on the length or format, except the one-page extended abstract.

For group projects, we will also ask you to each individually submit a few sentences about what each member of the group contributed to the final project.

## Groups

It is recommended to work in groups of up to three people. Each group will submit the report together. The expectations for the project scope will increase depending on the number of students in each group, and for groups with multiple people, we will also expect a short paragraph to explain the role of each group member along with the final report. From past experience, groups of two tend to be the most effective, though you may work in a larger group or alone. Groups larger than three may be allowed, but you must discuss this with course staff. Note that you should form your groups before **September 22**, though you are strongly encouraged to do this much sooner so that you can start on your project.

## Project Topic

You may discuss the topic of your final project with course staff by email, private message in Ed, or in office hours. If you are not sure about the topic, we encourage you to speak with us. You may (and indeed are encouraged) to use your ongoing research work as a project in this course, provided that this work relates to deep reinforcement learning. If you are looking for ideas for your project, we will posting a document on Ed containing project ideas, though we also encourage you to come up with your own.