

Final Project : Due April 27th, 2024 7:00pm US Central Time

The final project counts for 30% of your final grade in the class and may be completed by teams of students. The group size minimum is 1 (you can work by yourself) and the group size maximum is 4. The final project consists of two parts: (1) the code and (2) the report. The instructions for (1) the coding portion of the project can be found on EdX and have been available since the start of the semester. The instructions for (2) the final report can be found below. Groups (including group size=1) will sign up for a project group on Canvas and submit both their code and final project report as a group. Typically, all team members will receive the same score on both the code and the report. However, should a team member fail to contribute significantly, we ask that this is documented and reported to the head TA as early as possible. We will then review the evidence and may decide to assign individual grades, however, this is not always possible. The earlier a team reaches out to the head TA with a problem, the more likely it can be fairly addressed. More details and instructions will follow below.

The Code

The final project code description can be found on EdX and the starter code can be found on Canvas. The code will be auto-graded similarly to how all homework assignments were auto-graded, though each team has a soft **7 submission limit**. Please make an Ed Discussion post if more submissions are needed. **It is notoriously difficult to score goals against the autograder; as such, the code only counts for 30% of the final project grade** (or $.3 \times 30 = 9\%$ of your total course grade). Additionally, the autograder takes quite a long time to grade final projects, so please make sure you submit early so that you have time to get help debugging any issues that occur. **Near the final project due date/time, submissions may be so backlogged that it takes 24+ hours to receive feedback from the grader – make sure you keep this in mind in terms of submission limits. If you are happy with your grade and the deadline is approaching, be aware that you may not get feedback in time for a new submission and your score may lower without time to submit a previous version of your code.**

****Please submit your code to Canvas with a name GroupN.zip where N is replaced by your group number and follow the submission instructions below.**

The Report

Content:

The final project report should be written in the style of a formal journal article and should at a minimum include:

- (1) Introduction – overview of the project (What is the goal of the project? Where does this project fit within existing deep learning research?) ; motivation for work (How and why you chose your methods and agent type)
- (2) Methods - description of the attempted algorithm(s), any important architectural diagrams
- (3) Results – includes both project results within the context of the game (goals scored) and algorithm metrics; description of metrics and a definition of what determines a successful project must be included, plots and tables of results strongly recommended
- (4) Conclusions – draw conclusions based on the results of the project; discuss what could have been differently and how you could take the project further

The report should cite all sources used. Use any official citation format that you'd like.

Please note that to be considered a formal journal article, the final report must be clearly understood by someone who is not familiar with this class, but does have general deep learning knowledge. That means

that it does not make sense to directly reference particular homework assignments without any context, but rather, to cite references to published literature (ie the original UNet paper, etc). Additionally, all figures and tables must be publication-worthy. There should be no copy-pasted code or terminal outputs. Any algorithms may be explained via pseudo-code. A diagram of the network architectures should be included alongside appropriate descriptions. All text should be relevant to the project.

Grading:

The final project report will be graded according to the rubric posted on Canvas and following the general guidelines above. While we strongly encourage that students reach out to the course staff in office hours, we will not pre-grade any portion of the final report. Questions similar to, "Will I lose any points in this section?" or "What category in the rubric does this fall in" or "What else do I need to include in this section?" will NOT be answered in office hours. The intent of not allowing pre-grading is to make questions more actionable and focused, so that students can achieve high-graded results.

Since it is so difficult to score goals against the autograder, **the final project report counts for 70% of the final project grade** (or $.7 \cdot 30 = 21\%$ of your total course grade). **You can still receive full credit for the report even if your code does not score any points. If your code did not score against the autograder and/or if your code did not work as well as intended (ie autograder code grade < 70%), then you must fully describe alternative methods you would try in order to receive full credit for the report.** You do not have to describe alternative methods if your project was successful (autograder code grader $\geq 70\%$). The final project report will be graded according to the final project rubric, which is available on Canvas. Each team has **unlimited submissions for the final project report.**

While it is possible to receive full credit for the report even if your code does not score, please note that **we will be grading according to the posted rubric** and we will be looking for 'full and reproducible' descriptions of methods along with algorithm metrics regardless of performance. **It will be risky to not attempt scoring on the Canvas grader**, so do give the coding portion your best effort.

****Please submit your report to Canvas with a name GroupN.pdf where N is replaced by your group number and follow the submission instructions below.**

Submission Instructions

Every group (even if group size =1) needs to sign up for a final project group on Canvas. This can be done via Canvas --> CS 394D --> People -->Final Project Groups. Project groups are labeled 'Final Project Group n' with n ranging from 1-150. More project groups can be added if needed. **Please add yourselves starting from n=1 so that we can easily divide the project grading amongst the TA staff. Please do not add groups yourself nor should you create a new group category.** If assistance is needed joining a group on Canvas, please make an Ed Discussion post.

Joining a project group is what enables Canvas to give each member of that project group the same grade. **Every member of the group must join the Canvas group BEFORE submission so that the grade and comments are given to every group member. Failure to join the group before submission may result in a '0' grade for the project.** Each group (again, even if group size = 1) will need to submit their code to the 'Final Project' in the 'Final (Code Only)' assignment group and their report to the 'Final Project Report' in the 'Final (Report Only)' assignment group.

Final Project Instructions, Deep Learning, Due April 27 2024 7:00 pm US Central Time

When you go to Canvas --> CS 394D --> Assignments, you will see two options in the upper right-hand corner of the screen a) Show by Date and b) Show by Type. Click on 'Show By Type' (indicated by green circle & arrow in image below) and your assignments will be organized by what type they are. Then, it will become clearer where to submit your code and report (but this is also clarified in the image below). **Please, do submit again as part of your group (again, even if group size=1) if you have already submitted before this document was available. Nothing should be submitted for the Final Project Tournament Extra Credit or the Extra Credit for Submission System Testing.**

Spring 2024

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SHOW BY DATE SHOW BY TYPE

60% of Total 1 Rule ▼

▼ Homework

Homework 1
Due Jan 29 at 7pm | ~100 pts

Homework 2
Due Feb 12 at 7pm | ~100 pts

Homework 3
Due Mar 4 at 7pm | ~100 pts

Homework 4
Due Mar 25 at 7pm | ~100 pts

Homework 5
Due Apr 8 at 7pm | ~100 pts

Extra credit homework
Due Apr 22 at 7pm | ~100 pts

Homework 5 - Tournament

▼ Quiz from EDX 10% of Total

Total from edx
~10 pts

This is where you submit your code

▼ Final (Code Only) 9% of Total

Final Project (Code)
Available until Apr 27 at 7:02pm | Due Apr 27 at 7pm | ~100 pts

This is where you submit your report (including for the extra credit)

▼ Final (Report Only) 21% of Total

Final Project Report
Available until Apr 27 at 7:02pm | Due Apr 27 at 7pm | ~70 pts

Final Project Tournament Extra Credit

Extra Credit for Submission System Testing

Do NOT submit anything here

Extra Credit

There will be two opportunities for extra credit on the final project. For both opportunities, the extra points will be added to the final report score.

Extra Credit Opportunity #1

The first extra credit opportunity will be a test of the Canvas project submission system. On **Monday, April 15**, the TA staff will make an Ed Discussion post announcing the start of the extra credit and reference this document. The first 7 individuals **and** the first 7 teams to **(1) successfully join a project group on Canvas with all of their team members**, **(2)** submit a blank document (or an existing draft) of the their final project report on Canvas per the instructions above (ie to the **'Final (Report Only)'** section of Canvas), and **(3)** comment that they have completed all of these steps and indicate whether they are a group or an individual (group size=1) in response to the Ed Discussion post will receive +2 points on their report.

The comment should look something like this:

"I am a member of Project Group N, and we/I have successfully completed the extra credit requirements explained in the final project instructions. I am completing the final project as an individual/group."

Note that the TA staff may ask you to complete additional steps after your initial submission to test the system. **Those additional steps must be completed to receive the extra credit. The extra credit opportunity will only be available when the announcement is made on Ed Discussion and not any earlier.**

Extra Credit Opportunity #2: The Final Project Coding Tournament

The second extra credit opportunity is the tournament and details about the tournament can be found on EdX. The top three teams of each agent type (Image or State) will receive extra points (15pts first place, 10pts second place, 5 pts third place). To be eligible to compete in the tournament, one team member must fill out the google form linked here before the final project deadline:

<https://forms.gle/LHyJRTM5fKBjyb6g8>

Grading Concerns

If you have a grading concern, please fill out the grade change request form

(<https://forms.gle/fw5KmjU2YNfdvgY99>) before Sunday, May 5 at 7:00pm US Central time. **No late requests will be accepted.** The TA staff will respond to all requests by Monday, May 6 at 7:00pm US Central time via the email address(es) collected by the form. **All grades will be finalized in Canvas by Tuesday, May 7 at 7:00pm US Central time. No changes will be made after that.**

Please be aware that any grade change requests will be thoroughly reviewed by the course staff and the resulting grade may lower from the initial grade.

Sample concerns that would be best addressed by this form: quiz grades in EdX not matching quiz grades in Canvas, grade change requests when a student's final grade is close to a grade boundary, a student joining a final project group that they did not contribute any work to, extreme illness/other emergency that affects a student's ability to finish the final project

As a reminder, **we will not accept late quizzes under any circumstances.** For the final project, if you have extreme extenuating circumstances, please fill out the form AND email the head TA. Any issues with the final project may result in a course grade of 'incomplete' for the semester.