

## Final Project

CS 730/830, Spring 2025

Preliminary proposal due at **start of class on Tue, Mar 11**

Full proposal due at **start of class on Tue, Apr 1**

Poster presentations are **noon–2pm on Fri, May 2**

Email submission to me due by **2pm on Mon, May 12**

Two hardcopies of paper are due **at my office by 2pm on Mon, May 12**

### Overview

The purpose of the project is to give you a chance to investigate an AI topic in more depth than we can during the rest of the class. You may work in teams (although the larger the team, the more ambitious a project will be expected). The topic must relate to AI (for example, something related should appear in the textbook somewhere) but otherwise you may propose any topic you wish. Most people choose to implement and evaluate one or more algorithms that we cover in class, but feel free to undertake a different kind of project if you want.

### Proposal

Please talk with me about your project ideas well before the preliminary proposal is due. I can usually guide you to relevant material and help you avoid common pitfalls. Many people change or refine their idea quite a bit before settling on their final proposal. The sooner your idea is fully fleshed out, the more successful your project is likely to be.

The preliminary proposal must specify: 1) the problem you intend to investigate, 2) why it is interesting, 3) how you will address it (what you will do, including evaluation, with as much specificity as possible). I suggest that you divide your work into three categories: things you absolutely must do for the project to work at all, things you plan to do that are important for success, and cool enhancements that you will do if you have time. The most common failure mode for projects is to be too ambitious, so be sure to stage your work carefully so that you have something to show even if not everything works.

The full proposal must show that you have read background material on your topic and are qualified to undertake what you propose to do. In addition to more detail on the same topics required for the preliminary proposal, the full proposal must also contain 4) cartoon sketches of the results (eg, plots or tables) that you intend to show, indicating exactly what statistics you will report (eg, labeled axes), 5) who is responsible for each portion of the work (if it's a team project), and 6) full references for the papers and other sources that you have consulted and that will form the foundation for your work.

### Poster Presentation

On the last Friday before the end of classes, you will present your work from noon – 2pm at the CS Department Poster Symposium. A link to a registration form will be posted around the department in the weeks leading up to the Symposium. Registrants will receive a FOPAL code enabling free poster printing at [posters.unh.edu](http://posters.unh.edu). Please be sure that I stop by your poster before the end of the symposium! Live demos can also be accommodated — list any needs you have (power, table, ...) when you register. Often, explaining your work to others will give you useful ideas for additional things to try. If you obtain additional results after the Poster Symposium before the final paper is due, you are welcome to include them in your paper.

### Paper

This is the most important part of the project. If you can get compelling results with little coding, that's great. You will submit any source code you write (both electronically and as an appendix to your paper), but the write-up is what will be graded. It should 1) clearly state the problem that the project addresses, 3) discuss the methods employed in solving the problem, 4) evaluate their performance and adequacy, and relate them to other existing possibilities. You should 5) mention possible extensions of your project and things you would have done if you had more time. I recommend (but do not require) the AAAI format for

your paper—templates for L<sup>A</sup>T<sub>E</sub>X and Microsoft Word are linked from the course website. If you are a grad student or if you plan to continue on as a professional in computer science, I highly recommend using L<sup>A</sup>T<sub>E</sub>X for your paper (see [overleaf.com](http://overleaf.com) for an online WYSIWYG L<sup>A</sup>T<sub>E</sub>X editor).

If you give me a draft of your paper several days in advance, I'd be happy to give you feedback on it. Please hand in two copies of the final paper, since I like to keep one on file for posterity even if you want your marked-up copy back.

## Evaluation

The proposal:

- 2 Ready to go
- 1 Significant problems, please resubmit
- 0 Completely non-specific

The presentation:

- 5 Great all around.
- 4 Good work, bad talk. At least one of problem, approach, or results was disappointing.
- 3 Clear, on track, no results. Or, approach a bit confused, but some results.
- 2 Not clear, something to show.
- 1 Nothing to show, project in serious jeopardy.
- 0 Didn't show up.

The paper:

- 23 Submit as is to a AAAI/IJCAI workshop
- 20 Very nice work
- 18 Good.
- 16 Very rough in significant parts.
- 10 A bunch of work, but not a decent project.

- Roughly:
- 3 clear motivation and problem specification
    - what is the problem you are attacking? be specific.
    - how does it relate to this course?
    - why is it interesting or important?
  - 2 discussion of possible approaches
    - what are their good and bad points?
  - 8 your approach/algorithm
    - how does it work?
    - why is it appropriate to the problem?
    - why would you expect it to work well?
  - 5 evaluation methodology
    - what tests did you run?
    - are you sure it works?
    - does it work better than another reasonable things one might try?
    - how would you improve it if you had more time?
    - what advice do you have for future students doing this kind of project?
  - 5 quality of the writing
    - is it clear, easy to follow?
    - no grammar, spelling, or reasoning mistakes?
    - does it thoroughly address all the questions in these grading standards?

There is no page minimum or limit. Please be concise but thorough in answering the questions listed above.