

CS 4701: Practicum in Artificial Intelligence

Spring 2020
Prof. Haym Hirsh

Overview Lecture

Course Details

- Instructor: Prof. Haym Hirsh, Gates 352
- TAs: TBA
- Course website: <http://www.cs.cornell.edu/courses/cs4701/>
- Piazza page: <https://piazza.com/configure-classes/spring2020/cs4701>
- Course email: FAI-PRACTICUM-L@cornell.edu
- There is no regular class meeting time
 - Occasional organizational/information meetings may occur
 - Will be announced on Piazza
 - Everything in organizational meetings will also be provided online (such as these slides)
- Project description: TBA

You are strongly advised to take 4701 only
AFTER
you have taken 4700 or one of our other AI classes

Students who do not do so do not perform as well

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(How do you pick a project if you don't know AI yet?)

You get to have ownership of a project that interests you in AI

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with a class and with each other

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You need to be excited by that
Self-motivation is important

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If you're the type who without external motivation will leave
your project till the end of the semester be worried taking CS 4701

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with a class and with each other

Generate a project you can put up on a website
for prospective employers to see and be impressed by

Projects

- Teams of three for the full semester
 - Exceptions are rare, and when they're given
 - Teams of 4 are expected to do a project that is significantly larger than a team of 3 (and, empirically, that just doesn't happen)
 - Teams of 2 are expected to do a project of comparable size and scope to a team of 3
 - Teams of 1 are exceedingly rare

Finding Partners

Piazza

CS Department partner-finding session:
Tuesday, Feb 4, 6pm, Gates 3rd

After this organizational meeting ends

Projects

- Should:
 - Be primarily about AI
 - Involve significant systems building
- Should not:
 - Be primarily about running data through machine learning algorithms
 - Hand-coding a bunch of rules for a video game to create what in that world would be called an “AI”

Projects

Use whatever programming language you think is best.

Your code will not be graded.

This is a 4000 level course, I assume you can code.

Projects

You can use external resources, such as libraries, data resources, etc.

Just like the real world.

It must be documented.

It doesn't mean you get to do less work.

Aim higher by building off of what's out there.

Your project should *not* be gluing some existing packages together where most of the heft came from those packages.

Projects

Occasionally relevant: It can be connected to other work

School
Work

...

- Your project must be distinct from anything else it's connected to it
- All parties (both 4701 and the other work) must be informed and agree to it
- Must be documented in proposal and final report

Goal is to leverage it to have even grander ambitions

Milestones

- Thursday, February 6, 11:59pm: Teammate Selection
- Thursday, February 13, 11:59pm: Project proposals
 - Grade will generally be one of
 - Minor comments, go ahead with it
 - Comments, submit revision
 - Talk to course staff (can be due to concerns, uncertainty on our end about project)
 - Goal is to help you do something great

Milestones

- Tuesday, March 24, 11:59pm: Status Reports
 - Projects will morph, this is where you document it
 - You need to have shown significant work or it will affect effort portion of grade
- TBA (end of semester): Short presentations
 - It is to help us better understand your project
 - Mitigation against badly written reports
- TBA (end of semester): Final Reports
 - Documents your project (not your code)
- Individual Reports
 - Brief discussion about your contributions to the project

Grading

- 10%: Meeting milestones
 - 10%: Brief presentation
 - 80%: Project
-
- Submissions may be a combination of CMS and Google Forms
 - You lose points for not following instructions
 - More details in project description online

Project Grading

- 50%: Effort
- 20%: Clarity of writing
- 30%: Evaluation

Effort

This is about leaving Cornell having done
a large-scale systems-building project

Don't leave this till the last two weeks of the semester
(There is no hiding this from us, and your grade will reflect it)

Clarity of Writing

This is not software documentation

Do not write about software modules

Write about:

What you were trying to do

How you went about doing it

Measurable outcomes
(Evaluation)

Clarity of Writing

You will have spent a semester on this

Often the project team winds up too much in their own heads
It should be accessible to people who weren't along for the ride

Seek out people to review your paper

Evaluation

You were trying to do something:

Be precise: What were you trying to accomplish?

Did you succeed or fail?

On what basis are you concluding this (quantitative)

What contributed to your success?

On what basis are you concluding this (quantitative)

Evaluation

Human evaluation will be relevant to many projects
(such as a game playing program)

The developers are not “fair” human subjects
Evaluate on people other than yourselves

Put this in your schedule!

Karma Points

- Affect those close to the borderline between grades
- You get “positive karma” for:
 - Answering questions on Piazza
 - Reviewing classmates’ project reports
 - Serving as a human subject for a classmates’ projects
- You get “negative karma” for:
 - Asking questions already answered on Piazza
 - Asking questions already answered on the course website
 - Not following instructions
 - ...

Special Accommodations

Scan documentation letter and email to FAI-PRACTIUM-L@cornell.edu

Be ambitious

Glorious failure is better than mild timid success

You won't get a good grade by
asking an easy question and answering it successfully

You get a good grade by:

Trying something cool

Putting a lot of work into it

Being clear about what constitutes success or failure

Documenting the extent to which you succeeded or failed

Another way to think about this:

Did you come up with a project that if successful would be cool to put up on a website for prospective employers to see?

4701 is at its best when you're doing something that excites you

Find it