

HW3 Debrief + Server-Side Features

15-113 – Monday 2/9

Talk with your neighbors, you know the drill

- Move around and talk to some different people today!
- Take turns briefly showing what you created and how
- Discuss which models you used, **any difficult parts**, anything that seemed particularly effective
- Take notes! We'll ask people to report back briefly

We'll (anonymously) share these results

- It's supposed to be HW3! <https://bit.ly/4aEs8mN>
I am ashamed of my mistakes and my self-doubt is at an all-time high



Was this a tougher task?

My bet is yes (though I could be wrong) because:

- This is much more open-ended. You had to decide what to make.
- APIs are constantly changing. AI may not know all the details.
- There may have been some steps (like getting an API key) that AI couldn't automate for us
- It may have been harder to test whether everything works

Next step: Server-side functionality

We're moving toward webapps, which often have a frontend and a backend

- The frontend would be like the HTML/CSS/Javascript on your website. This code is sent to the user's browser, and the browser runs it.
- The backend consists of code on a server that the frontend communicates with. That code is hidden, can't be easily tampered with, and can (but does not have to) be more complex.

Some examples:

- Chatbots on the 15-113 website
- Backends for banking websites
- Databases (like the CMU course catalog)
- Search engines, Google Maps, Uber and Lyft, etc
- The AI behind ChatGPT and Claude and Gemini etc
- Almost anything you can log into

HW4

Implement a simple backend and frontend

- Focus on some sort of interesting functionality
- Don't worry about polishing the user experience or frontend design too much; just focus on getting the interaction working well. See 15-113 chatbots for an example.
- Suggestion: Dream big, and then narrow the scope for HW4
- You may (but do not need to) build on HW3 to make HW4. After this, we'll begin Project 2, which may (but does not need to) build on HW3 and HW4.
- **We'll expect thoughtful design and polish on Project 2.**

In groups, spend some time ideating

Come up with some ideas for what you (or someone else) might want to try out for HW4 and/or Project 2! Think broadly. Drop as many suggestions as you can into this google doc! (Feel free to add a +1 to other peoples' ideas too.)

<https://bit.ly/4rGNxBD>



If time: Start reading this article



This article on metacognition and learning with AI will be assigned reading for either next lecture or next week, depending on how much we discuss today.

<https://bit.ly/4tkll81>

Ethics overview + HW4 working time

15-113 – Wednesday 2/11

Some preliminaries before discussing ethics

- Mike is not a philosopher! (But I spend a lot of time worrying about things)
- The goal here isn't to teach you right and wrong; it's to help you navigate the borderlands for yourself
- Much of this is based on what I learned from Prof. Illah Nourbakhsh, who will be joining us for a future lecture
- I highly recommend his book “Robot Futures” (I have some extra copies on order)

What is ethics?

- Academic definition: The study of moral phenomena
- Casual definition: How do we make important decisions? How do we decide what's right and wrong, worth it or not worth it? How do our decisions (or indecisions) affect others? What should we prioritize, and what are we willing to sacrifice for a particular end?

What is ethics?

- Ethos: “the distinguishing character, sentiment, moral nature, or guiding beliefs of a person, group, or institution” (Merriam Webster)
 - What is our nature?
- Mores: “the fixed morally binding customs of a particular group” (MW)
 - How does that nature manifest in our decisions?
- Taken together: What does responsible conduct look like?

Is “AI Ethics” the right term here?

- AI doesn't advance without technologists
- AI doesn't act on the world without users
 - (individuals, corporations, governments, etc)
- Deliberately or not, an AI's perceived “ethics” flow from us
- So, instead of framing tough questions as “What should an AI do or not do in this situation?” I think we should take a more anthropocentric approach:

Ethics of humanity in the context of AI

Questions we should be asking

- What should we demand from an AI system?
- How do we use AI while staying consistent with our values?
- How do we maintain accountability for indirect consequences?
- What are our obligations to humanity and the environment?
- What are our obligations to ourselves as individuals?
- What should we prioritize when we have the opportunity to change the world?

What can we actually do, though?

- None of us have the ability to simply reach out and turn all the knobs of the world (bummer). You *can* reach some of them though, and you'll reach more in the future.
- "Give me a lever long enough and a fulcrum on which to place it, and I shall move the world." (Archimedes)
- KEEP BUILDING YOUR LEVER
- In the meantime, find your ethical algorithm

My (personal) ethical algorithm

1. First, start at the individual.
 - a. What personal agency do I have in this moment?
 - b. Am I being true to myself and my values?
 - c. **Am I being deliberate in my decisions?**
2. Move to the community.
 - a. What spheres do I move within? Collectively, do these spheres act responsibly?
 - b. To what extent can I steer these groups (toward happiness, responsibility, safety, etc)
 - c. **Am I steering deliberately?**
3. Move to the present and future.
 - a. What ripples am I sending out into the world?
 - b. To the extent that I can predict, are my actions likely to steer the world to a happier and more equitable future?
 - c. **Am I deliberate in considering the broader impacts of my actions?**
4. **Be exemplary**
 - a. Be seen, allow people to learn from your successes *and* your mistakes

Moving forward...

- We'll focus more on how all of this applies specifically to AI
- We'll discuss what agency we have, and what agency we should work to gain
- We'll discuss several groups' attempts to define priorities for AI development and use
- My goal is for you to define your own priorities, and a deeper understanding of your own ethical algorithm

One video of Illah:

<https://www.youtube.com/watch?v=giKT8PkCCv4>

This one's private

- What topics are you most eager to discuss in terms of AI and its impacts? <https://bit.ly/4acXWPI>



Work time! Get started on
HW4, talk with your
neighbors, ask us for help!

HW4 work sessions

Thurs 6pm-7pm

Friday 2pm-3pm