CSE 121 – Lesson 13

Sli.do link:

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Music: 121 23sp Lecture Vibes <3

Last time we:

Completed (almost all) of the Astrology Bot we are working on:

- Finished computeSign(int month, int day)
- Finished giveHoroscope()
- Called those above methods in zodiacChat()
    - Prompts user input

Today:

1. Announcements
2. Grading calculator overview
3. Finish Astrology Bot
4. Discuss P2
5. Computer Science ethics?

Announcements, Reminders

- P2 Prioritizing Patients out now, due **Tuesday May 16 (5/16)**
- Quiz 0 Retake grades were posted yesterday
- Quiz 2 is scheduled for **5/18**
  - While loops (includes conditionals)
  - User input (Scanner)
- Retake form for retakes next week **(only for Quiz 1)**
- Grade calculator overview!

To Ed!

Prioritizing Patients

Consider the specification where we determine a “priority score” for people:

🤕 Priority Score

We use the information that the user inputs (*"features"*) to calculate a **priority score** for the patient. The patient features used for the calculation are:

- age
- zip code
- whether this hospital is "in network"
  - an answer of `y` or `yes` indicates that the hospital is "in network" for the patient
  - *any other response* indicates that the hospital is not "in network" for the patient
- pain level
- temperature

Prioritizing Patients

- Take a second to reflect, what does it mean to assign people “priority” in terms of healthcare
- When assigning somebody priority, what factors go into it?
- Do the factors we think relevant reflect other social factors inadvertently?
  - For P2: We chose age, zip, in-network, pain, temperature – can we think of any way these might introduce bias?

Prioritizing Patients

- Consider:
- Research and reports from 2019 indicated algorithms for patient prioritization and allocation of care systematically privileged white patients over black ones (algorithm being used in the care of ~70 million patients)
- Did not consider race but utilized patient health costs as a proxy for health needs.
  - People with lower incomes tend to have smaller health costs because they don’t have insurance, free time off work, etc.
  - Socioeconomics compound with historical disenfranchisement of Black Americans, which correlate with lower on average economic bracket

Prioritizing Patients

- So, racial bias exists algorithmically – what is the impact of that in healthcare?
- Study (Obermeyer et al 2019) finds with this wealth proxy resulted in:
  - An estimate that the algorithmic racial bias reduced the number of patients who were black to be flagged needing extra care by more than half
  - American Association for Advancement of Science (AAAS) indicates that black patients were assigned same risk/prioritization level, but were substantially sicker than white patients and were resultantly not given an appropriate level of care

Prioritizing Patients

- What's the takeaway?
  - Computer science is not neutral, and the work we do can easily reify already existing social biases whether we intend to or not
  - We need to be actively mindful of the assumptions we make in our implementations, for something like P2 specifically, is using zip code as a proxy for priority potentially unethical? Who is included? Who is excluded?
  - CS does not exist in a vacuum, be mindful, reflect, and more than anything – continue to "debug" social issues!