CSE 121 – Lesson 13

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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 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 resultanty not given an appropriate level of care
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!