The Ethics of AI and Grading

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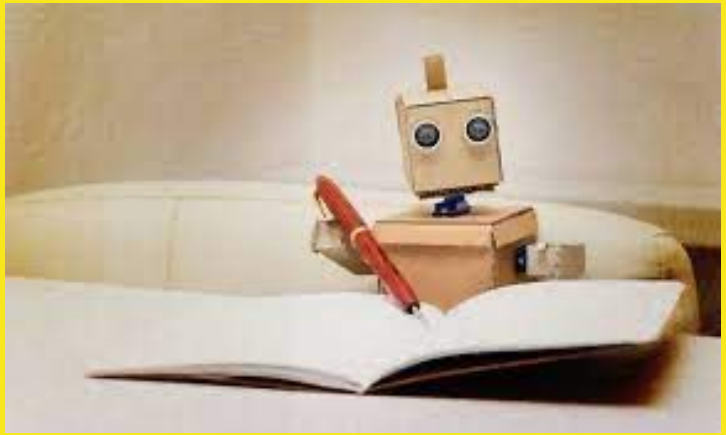
The Issue

Should AI be used in grading?



Which piece of feedback was written by a human?

Piece of Feedback #1

Problem: Get user input using python.

Close. There is a minor error with your logic to get input from user. This could be something like forgetting to convert user input to a float.

—

Piece of Feedback #2

Problem: Draw waves of tiny blue diamonds across a black-and-white grid.

Seems like you have a small mistake. Perhaps you are running into a wall after drawing the third wave.

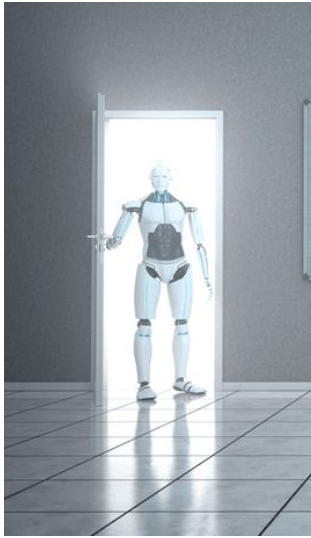
Cons -

- Unfair Outcomes
  - In 2020 the IBO used AI to predict final student grades (~175,000 students)
  - Used historical results (assignments, grades, teacher predictions)
  - 15% protested results (suspiciously low scores; revoked college acceptances)

- Cheating or Inaccurate grades on assignments
  - Students (or parents) figure out the algorithm (scanning keywords)
  - Wide grading range
    - Edgenuity (0% no keywords; 100% one keyword)

- May replace teachers

- Can increase inequity (high income-AI and human teachers; others-device)



Cons con't

- AI only works with very specific tasks
  - Unable to evaluate things it has never seen before

- AI field is not diverse
  - Information AI is fed may be biased or skewed
  - Creates one view of the world

- Does not address all learners
  - Nuances in answers eg: ELL/SwD (cognates)

TENURE-TRACK FACULTY at CS DEPARTMENTS of TOP UNIVERSITIES around the WORLD by GENDER, AY 2019-20
Source: AI Index, 2020 | Chart: 2021 AI Index Report

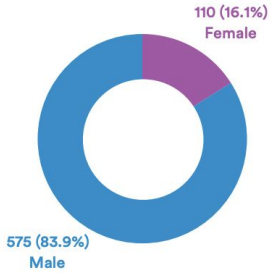


Figure 6.1.2

NEW U.S. RESIDENT AI PHDS (% of TOTAL) by RACE/ETHNICITY, 2019
Source: CRA Taulbee Survey, 2020 | Chart: 2021 AI Index Report

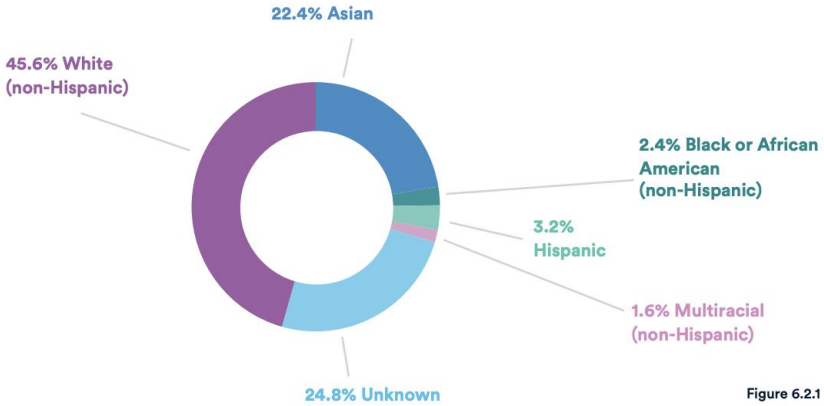


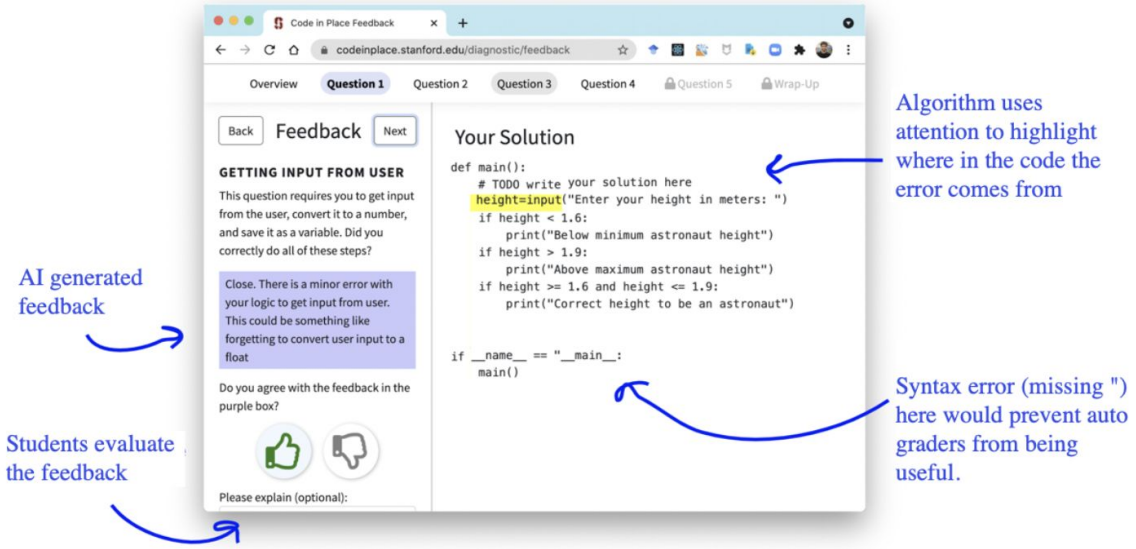
Figure 6.2.1

Pro #1 - Saves Time!

- In 2020, the University of Massachusetts at Lowell, rolled out Gradeoscope
- Instructors scan student work into PDFs
- Gradeoscope's AI groups similar answers, allowing professors to grade more quickly
- The AI applies a rubric--created by instructors--to each scanned answer

Pro #2 - (Can) Expand Access to High-Quality Feedback

- In 2021, a lab at Stanford created ProtoTransformer, an AI that can learn how to give feedback
- Used in a Stanford MOOC to give feedback to 16k+ students
- The AI was trained on past midterms graded by human TAs
- Students agreed with the AI's feedback 97.6% of the time
- (Students in the course agreed with human feedback 96.7% of the time)



Would you use AI to grade? Why or why not?

Sources

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Further Reading

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