AI Lesson Plan

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Subject(s) Taught: Computer Science / CTE
Grade Level: 7

Intro & Purpose

Post the Tweet originally posted April 5, 2016 by user @HereroRoche. Show the initial Google image searches from the tweet and ask students to discuss with partners their reactions to the tweet and Google Searches. As a class, discuss our thoughts and concerns. What do we notice? Why do we think this happened?

Key Terms

algorithm
algorithmic bias

Activity

Share with students an overview of how the Google algorithm works. Is the algorithm inherently racist/biased? If not, then how does this happen.

Ask students to review how machines are trained? Come to the discussion that the algorithms are trained using datasets that are fed into the program. Who feeds the data into the program? Computer programmers. Share the graph with students and discuss who primarily makes up the computer science profession? Discuss whether or not students think the bias is intentional. Reinforce that it isn’t usually intentional. Share how Google Searches and why the algorithm may have pulled those pictures. Even if the bias is unintentional, it can have significant implications.

Share the video Crash Course: Artificial Intelligence- Algorithmic Bias and Fairness to overview the concepts of types of algorithmic biases. (https://bit.ly/3fIaVcS)

Partner students and provide each with an AI application that has raised potential concerns with algorithmic bias. Students will work together to answer a series of questions on the application. Depending on the age/ability level of the students this could involve being given a packet of info/article or being asked to do some web-based research. These questions will include:

1) How is AI being used in this situation?
2) Why is the AI determination/decision important and how can it impact people’s lives?
3) How can the algorithm unintentionally show bias?
4) What can happen when algorithmic bias exists in this application?
5) What are some steps that could be taken to mitigate this algorithmic bias.
Application examples can include:
1) The COMPAS system—widely used in the United States for predicting recidivism and informing bail decisions.
2) PredPol—an algorithm used in some states in the US for predicting when and where crimes will take place.
3) Facial Recognition software—used in policing to identify suspects.
4) Amazon’s attempt (never actually used) at a resume screening tool.
5) General web-crawler search engines searching internet (tend to be biased against women and people of color).
6) Medical apps—frequently have excluded many women from data sets.
7) and many more.

After working together, have students share in a discussion circle about what they learned and look for similarities and differences in the situations.

Resources needed will include classroom basics such as pencils in paper, slides of the images below, cards with details about the application examples for student partners to use, and availability of either printed or web-based resources on the application examples.

**Assessment**

Student learning would be assessed through their discussion in the final discussion circle and through the use of an exit ticket reflection asking students to respond to a question about what algorithmic bias is and what impacts it can have on an individual, a group of people, and our society as a whole.
Bonnie-Nje
@HereroRocher

I saw a tweet saying "Google unprofessional hairstyles for work". I did. Then I checked the 'professional' ones 😐😐😐

5:04 PM · Apr 5, 2016 · Twitter for iPhone

12K Retweets 8.8K Likes