Name: Arogya Upadhyaya

Implications of Algorithms

You may recall a famous quote from the 1993 movie **Jurassic Park**:

> *"your scientists were so preoccupied with whether or not they could that they didn't stop to think if they should."* - Dr. Ian Malcolm

You may either:

- watch this youtube video
- listen to the audio, or
- read the transcript

of this March 12, 2021 webinar on "Should the government play a role in reducing algorithmic bias?"

1. (10 points) The panel contrasts fairness with unbiased. In your own words, explain the distinction between these two? Is it possible for an algorithm unbiased but unfair? Or fair but biased? Give examples of what you believe is possible, or explain why both possibilities are impossible.

   Unbiased means giving equal opportunity to everyone without looking at their irrelevant characteristics. For example for a person applying for a job, not looking at their gender, race, etc. These things are not relevant in the job so ignoring them while making a decision is being unbiased. In terms of algorithms, unbiased means an algorithm treats all the entered data the same way without correcting for any biased social norms. Fairness means doing what is right for them. For example in schools, giving extra classes to the students who are weaker in studies than other students. This ensures that everybody aligns with the academics the way they should. In terms of algorithm, fairness means the algorithm understands that certain groups of data should be treated differently because of some given reasons.

   Yes, an algorithm can be unbiased but unfair and also fair but biased. For example, let's say there is a movie streaming platform that millions of people use. The movie streaming platform can suggest to users some movies. If the algorithm to suggest a movie is unbiased, then the platform will give recommendations based on what the majority of people watch. This means that if I don't like action movies, and if a majority of people like action movies, I will be suggested to watch action movies. This is an unbiased algorithm but it is not fair.

   However, if there is an opposite case, I am now suggesting a comedy movie that I like

based on previous movies I have watched and also based on what people similar to my taste watch. This is very fair because now I get the suggestion of content that I prefer. However, it took into account various biased factors such as my preference, my history of movies, and maybe also my location.

2. (20 points) Select a technology that was discussed as problematic by the panel. Do some research to explore why some would consider such technology as problematic and then write:
    a. one paragraph explaining the purpose of the technology (i.e., what problem was the algorithm trying to solve)
    b. a second paragraph on the potential social impacts of your chosen technology (who benefits? who doesn't?)

   Finally, include links to all resources used.

Predictive Police Algorithms in UK

The purpose of this algorithm is to determine the potential crime areas and potential crimes. This means that the police used the algorithm to determine if a crime offender is likely to commit another crime in the coming days. Also, by looking at the historical crime patterns, determining if a certain place is likely to see another crime anytime soon. This way the police are aware very ahead of the crime and start patrolling in the place where potentially a crime is about to happen. It was not trying to solve the crime but to make the police alerted about the possible crimes. The goal was to reduce the pressure on police and improve public safety to some extent.

However, there were many cases in the UK when the police got false alerts because of historical data. Even if the place is already better now, the police get alerted. Likewise, they also used the algorithm to predict whether an offender is likely to re-offend in the next 2 years and put them in rehabilitation. There were also cases where the police got redirected to a place that was already over-policed. This creates a kind of discrimination to the people in that neighborhood. They might constantly think that there will be some crime in the place they live in.

The good thing about this algorithm is that it might reduce the possibility of crime happening and reduce crime rates. However, it will create a biased feeling for the people in society. If a crime happens in a new neighborhood, there is a very high chance that people will go against that algorithm. The way they use CCTV for facial recognition is also been proven inaccurate in some cases where they falsely identified criminals causing disruption in the area.

Resource Used: https://post.parliament.uk/ai-in-policing-and-security/