Algorithmic Bias
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OVERVIEW

Algorithmic bias describes systemic errors in computer software systems that create a bias towards one group of people. Through my research, I have been able to answer the question of what steps can be taken to ensure that algorithmic bias does not persist.

RESEARCH

Originally, algorithmic bias developed from pre-existing cultural or societal expectations, for example, Apple has consistently used a white male's face when experimenting with face recognition technology. This further puts many races at a disadvantage and increases systemic racism present in technology.

Machines then become "trained" that allows them to make certain predictions about users and information they might gather in the future.

Another flaw with this technology is the bias' of engineers making the program and deploying it the public in a certain way.

A false sense of reality in technology

Algorithmic Steps

Computer algorithms use a high amount of artificial intelligence post-engineering as they are able to create a "visual" representation of what users might look like, leading to a flawed sense of the world

Initially, when an engineer is working on a prototype for a specific technological system, they tend to include bias' of race and gender.

When trying to emphasize the level of accuracy, a computer system might pick up the signals leading to a false sense of accountability,

Companies claim to be accurate, but don't reveal their training that encompasses all of the developments. Many companies are also scared to have their process reviewed by a third party, as to not be as transparent as possible.

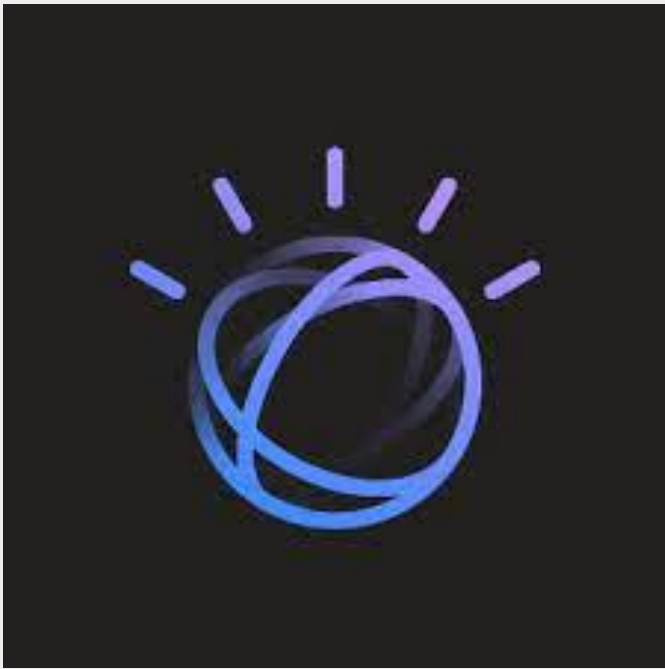Face Recognition provides bias in technology

ANALYSIS

Overall, there need to be many steps taken to eliminate Algorithmic Bias. Transparency is key to the process so that no one is being discriminated against in technology. The Federal Trade Commission (FTC) is trying to pass legislation to regulate facial recognition and ban technology from federally assisted housing. The larger problem, however, is that agencies don't agree on having full authority over AI recognition.

The Federal Trade Commission monitors AI

In a new day and age of technology, more bills in Congress are being passed to regulate flawed artificial intelligence. Research and Development are key, through, to minimizing the bias found in data sets and understanding the nuances of each application area.

A couple of companies have made strides in removing the bias from AI technology.

1. AI Fairness 360 is an IBM open source library to detect biases in unsupervised learning environments

1. Google's 'What if' can test hypothetical situations and analyze the importance of various data features

Overall, there have been important advancements in this field to eliminate disadvantages

To fully retain an unbiased data set, numerous amount of tests need to be accounted for to build the most efficient AI system possible.

IBM Watson has eliminated bias

CONCLUSION

Overall, creating an unbiased artificial intelligence system is difficult as it seems that biases will continually be present, but it is key to emphasize the importance of new and improved legislation. Organizations like the FTC, IBM, and Google are continuously working to understand how to create an equal playing field in technology and in the end eliminate racial bias altogether which can only happen through multiple iterations of an technological interface.