ALGORITHMIC BIAS

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OUTLINE

01.

INTRODUCTION

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Algorithms are everywhere, they are used to make countless decisions affecting people in a range of tasks, from making movie recommendations to helping banks determine the creditworthiness of individuals.

However,since algorithms are written by people they aren't necessarily any more objective than humans,and this is where the phenomenon of algorithmic bias comes in.

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ALGORETHMIC BIAS DEFINITION

ALGORITHM BIAS:

algorithmic bias describes systematic and repeatable errors in a computer system that create unfair outcomes, such as privileging one arbitrary group of users over others. Also, occurs when an algorithm produces results that are systemically prejudiced due to erroneous assumptions in the machine learning process.

03.

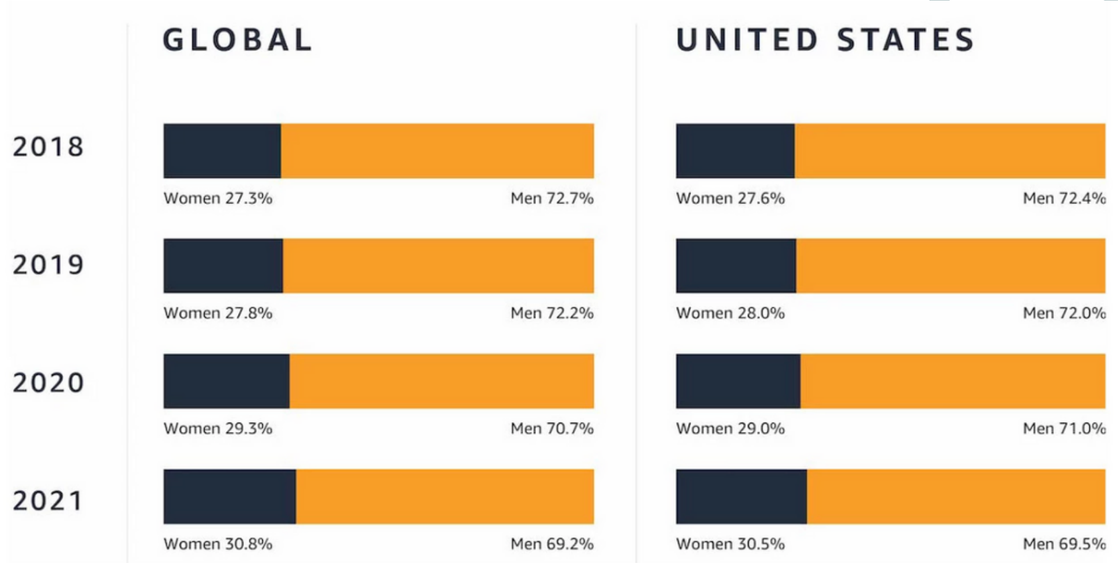
ALGORITHMIC BIAS EXAMPLES

BIAS IN FACIAL RECOGNITION TECHNOLOGY

MIT researcher Joy Buolamwini found that algorithms powering three commercially available facial recognition software systems were failing to recognize darker-skinned complexions.
Generally, most facial recognition training data sets are estimated to be more than 75 percent male and more than 80 percent white.
When the person in the photo was a white man, the software was accurate 99 percent of the time at identifying the person as male.
The product error rates for the three products were less than one percent overall, but increased to more than 20 percent in one product and 34 percent in the other two in the identification of darker-skinned women as female.
In response to that both IBM and Microsoft committed to improving the accuracy of their recognition software for darker-skinned faces.

BIAS IN ONLINE RECRUITMENT TOOLS

The algorithm was taught to recognize word patterns in the resumes, rather than relevant skill sets, and these data were benchmarked against the company's predominantly male engineering department to determine an applicant's fit. As a result, the AI software penalized any resume that contained the word "women's"



SOURCE: WWW.ABOUTAMAZON.COM

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ALGORITHMIC BIAS CAUSES

INCOMPLETE OR UNREPRESENTATIVE TRAINING DATA

Insufficient training data is a main cause of algorithmic bias. Buolamwini's facial-analysis experiments, the poor recognition of darker-skinned faces was due to the statistical under-representation in the training data. some researchers have argued that it is often the lack of diversity among the programmers designing the training sample which can lead to the under-representation of a particular group.

SOLUTION?

IEEE P7003 ALGORITHMIC BIAS CONSIDERATIONS STANDARD

05.

CONCLUSION

THANK YOU FOR LISTENING !

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