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AI: ALGORITHMIC DISCRIMINATION AND BIASNESS

~Kritika Rajput

Artificial intelligence refers to computer systems that can perform complex tasks normally done by human mind which includes reasoning, decision making, creating, processing data etc. It's a combination which works on algorithms, data sets and learning models. AI is disruptive technology which is very advanced work on patterns and on the basis of data. But is this AI is really neutral? AI system are designed and trained by human and on the large data sets which follows the traditional patterns which automatically makes AI to learn the human prejudices and inequalities. A minor discrimination in algorithms and past data can cause a severe violations of rights which is the biggest concern in the digital age.

CONCEPT OF AI BIAS

AI bias refers to systematic discrimination deep rooted within AI systems that can reinforce existing biases and support more discrimination, prejudice and stereotyping.[1] This biasness is mainly carried from the large traditional data sets on which AI system learns, improve patterns and performance based on this though for AI it is not discriminatory as it output totally depends on the provided data sets

CAUSES OF ALGORITHMIC BIAS

1. Biased Datasets

Machine learning systems heavily depend on datasets. If the dataset itself contains bias or lacks proper representation, the algorithm will naturally produce discriminatory outcomes

[1] SAP, *What Is AI Bias? Causes, Effects, and Mitigation Strategies* (Oct. 29, 2024), https://www.sap.com/resources/what-is-ai-bias.

though AI thinks it is to be fine but actually historical prejudice reflected in datasets often becomes part of AI systems.

2. Designer Bias

Bias can also be seen through feature selected by developers. For example, if a recruitment AI treats attendance at an institution as a major indicator of success, it may indirectly discriminate against people from weaker social or economic backgrounds. Even if the developers did not intentionally discriminate, the outcome can still become unfair.

TYPES OF SUCH ALGORITHMIC BIAS ARE:[2]

Facial recognition bias- Many studies conducted and one of United States found that facial recognition systems misidentify people of colour more frequently than white individuals. These kind of technology usage in law enforcement agencies can be proved to be incorrect in match and leads to wrongful arrests and harassment of innocent people. As there are cases where people wrongly arrested because facial recognition software identified them incorrectly.[3]

Bias in financial services- there was a news UC Berkeley which mentioned about the mortgage algorithms was showing racial biasness in lending, bias costs black and Latino homeowners up to half a billion dollars interest every year.[4]

Bias in healthcare- Algorithms have also shown a lot of racial biasness. A healthcare algorithm used in America shows racial disparities and resulted in underestimating the needs of the black patients because the algorithm basically looks at the patient spending and black

[2] Nicol Turner Lee, Paul Resnick & Genie Barton, *Algorithmic Bias Detection and Mitigation: Best Practices and Policies to Reduce Consumer Harms*, Brookings Institution (May 22, 2019), https://www.brookings.edu/articles/algorithmic-bias-detection-and-mitigation-best-practices-and-policies-to-reduce-consumer-harms/.

[3] American Civil Liberties Union (ACLU), *More than a Dozen Wrongful Arrests Due to Police Reliance on Facial Recognition Technology* (Apr. 14, 2026), https://www.aclu.org/news/privacy-technology/more-than-a-dozen-wrongful-arrests-due-to-police-reliance-on-facial-recognition-technology

[4] University of California, Berkeley News, *Mortgage Algorithms Perpetuate Racial Bias in Lending, Study Finds* (Nov. 13, 2018), https://news.berkeley.edu/2018/11/13/mortgage-algorithms-perpetuate-racial-bias-in-lending-study-finds/

people had no healthcare accessibility and therefore they were not included in the past healthcare data that's why biasness took place from the past data.[5]

Bias in natural language processing- NLP which helps computers to understand the human language also often shows racial and gender biasness like AI often associate men with high paying officials whereas women are often connected with fashion or domestic chores. This also becomes very problematic situation for the corporates and other sectors who uses NLP for the recruitment process, filtering resumes and translation of resumes therefore automatically resumes were declined solely because of the past data bias.[6]

FAMOUS CASES RELATED TO AI BIAS

1. Google Photos Scandal (2015)

In 2015, Google Photos faced criticism after it incorrectly labelled Black individuals as "gorillas." This incident became one of the most famous examples showing how biased datasets can produce discriminatory outcomes in AI systems.[7]

2. Loomis v. Wisconsin

This case involved the use of a software called COMPAS during criminal sentencing. The accused argued that the software violated his right to due process because its functioning was secret and could not be challenged in court. The case highlighted the issue of the "algorithmic black box," where AI systems make decisions but people do not know how those decisions are actually made.[8]

IMPACT AND MEASURES WHICH CAN BE TAKEN TO REDUCE ALGORITHMIC BIAS

[5] The Epoch Times, *Racial Disparities in Health Care* (Apr. 5, 2016), https://www.theepochtimes.com/article/racial-disparities-in-health-care-1514877

[6] Jon Kleinberg, Jens Ludwig, Sendhil Mullainathan & Cass R. Sunstein, *Discrimination in the Age of Algorithms*, 10 J. Legal Analysis 113 (2018)

[7] Rory Cellan-Jones, *Google Apologises for Photos App's Racist Blunder*, BBC News (July 2, 2015), https://www.bbc.com/news/technology-33347866.

[8] *State v. Loomis: Wisconsin Supreme Court Requires Warning Before Use of Algorithmic Risk Assessments in Sentencing*, 130 Harv. L. Rev. 1530 (2017), https://harvardlawreview.org/print/vol-130/state-v-loomis/

Algorithmic bias supports the historical discrimination based on the data and the pattern AI learns from it. More social inequality and marginalisation and vulnerable groups become more vulnerable and end up facing unfair treatment, inequality in different sectors. It violates the fundamental rights of people article 14, 15, 16, 21 and other rights provided under specific acts for protection of women, or other vulnerable groups of society.

SOME MEASURES TO REDUCE ALGORITHMIC BIAS CAN BE :

1. Creating Better and Representative Datasets

Researchers believe that creating balanced and representative datasets can significantly reduce bias. Combining "small data" and "big data" can improve accuracy and reduce discrimination in AI systems.

2. Enhancing Transparency

Many AI systems function like a "black box," meaning their decision-making process is hidden. Increasing transparency can help identify unfair practices and make organisations accountable for discriminatory outcomes.

3. Technological Tools

Certain technological tools have been developed to reduce discrimination. Some recruitment systems remove names, photographs, and gender indicators from applications in order to prevent bias. Other techniques attempt to remove gender stereotypes from AI language systems.[9]

4. Relevance from International Legal Framework

At the international level, Article 22 of the General Data Protection Regulation gives people the right not to be subjected to fully automated decisions that significantly affect them.[10]

[9] Zixi Chen, *Ethics and Discrimination in Artificial Intelligence-Enabled Recruitment Practices*, 10 Humanities & Soc. Sci. Commc'ns 567 (2023), https://www.nature.com/articles/s41599-023-02079-x

[10] Regulation 2016/679 of the European Parliament and of the Council art. 22, 2016 O.J. (L 119) 1 (EU) (General Data Protection Regulation).

Similarly, the EU AI Act lays[11] down rules regarding high-risk AI systems, especially concerning transparency, data quality, and bias detection.

[11] *Regulation Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act)*, Regulation (EU) 2024/1689, 2024 O.J. (L) 1 (EU). (eur-lex.europa.eu)