**Algorithmic Bias**

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August 04, 2023

[Opinions](https://www.nation.com.pk/opinions), [Columns](https://www.nation.com.pk/columns)

When Muhammad ibn Musa al-Khuwarizmi was developing the methods to solve quadratic equations in 9th Century Baghdad, he had no idea that his Latinized name would be given to the computer programs that would usher in the Information Technology revolution. In the digital age, algorithms wield immense influence on our lives, subtly shaping our choices, decisions, and experiences. From search engine results to social media feeds, algorithms are the behind-the-scenes puppeteers directing our online interactions. While these complex mathematical models promise objectivity and efficiency, the stark reality is that they are often far from neutral.  
Algorithms inherit and, in some cases, augment the biases that exist in the real world, leading to a vicious cycle of discrimination and inequality. One of the most glaring examples of inbuilt bias in algorithms is within the realm of online job advertising. Studies have shown that job advertisements targeted toward men were more likely to show higher-paying positions compared to ads targeted toward women. This stems from historical data that reflects the societal gender pay gap in the job market, propagating the very inequality it should endeavor to eliminate.  
Predictive policing algorithms, peddled as tools to optimize law enforcement resources, have come under severe criticism for disproportionately targeting minority communities in the United States. However, it was discovered that police officers were dispatched to areas with racial minorities with no correlation to the crime.  
A ProPublica investigation revealed that certain risk assessment algorithms used in sentencing decisions by the criminal justice system were twice as likely to incorrectly flag black defendants as higher risk compared to white defendants.  
Furthermore, algorithmic bias can extend into the realm of finance. Credit scoring algorithms, designed to evaluate a borrower’s creditworthiness, can perpetuate racial discrimination by considering factors such as zip codes and neighborhood characteristics, which correlate with the borrower’s race. This results in the denial of loans and financial opportunities for minorities, emphasizing existing economic disparities.  
The impact of algorithmic bias on social media platforms is also concerning. News feeds and recommendations on platforms like Facebook and Twitter are personalized based on users’ preferences and behaviors, creating “echo chambers” that reinforce existing beliefs and opinions.  
The role of algorithms in determining access to information is equally significant. Search engines often prioritize certain websites over others, shaping public opinion and influencing decision-making processes. If a search engine algorithm favours unreliable or biased sources, it can significantly impact the information users receive, contributing to misinformation and shaping public opinion in misleading ways.  
Addressing algorithmic bias requires a multi-faceted approach. First and foremost, transparency is crucial. Algorithmic decision-making processes must be made open to scrutiny, enabling experts and the public to understand and address any biases that emerge. Companies that deploy algorithms should be held accountable for the consequences of their creations, and technical audits of the computer programs should be conducted regularly.  
Emphasis on the ethical implications of algorithmic design can lead to greater sensitivity to bias and a commitment to creating more equitable solutions. Researchers have been exploring the concept of “debiasing” algorithms. This involves using techniques that remove or minimize bias from training data, ensuring that the algorithm’s decisions are less influenced by historical inequities.  
Lastly, users need to become more discerning and critical consumers of algorithmic output. By being aware of the potential for bias, we can actively question and challenge the information we encounter online, thereby reducing the negative impact of algorithmic manipulation.  
As we forge ahead into the digital future, we must confront the ethical and social implications of algorithms head-on. The transformative potential of these tools is undeniable, but the dark side of their inbuilt human bias cannot be ignored. To build an equitable world, we must act as responsible citizens to ensure that algorithms serve us rather than perpetuate the flaws and prejudices that exist in society. By doing so, we can harness the power of algorithms for the collective good and create a future that is truly inclusive and unbiased.