Ethical Considerations for Algorithmic Processes in Our Everyday Lives

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Algorithms are embedded in the digital systems and services that we use on a daily basis to add efficiency to our lives. Whether navigating through social media feeds, online shopping, exploring job opportunities on employment platforms, or selecting a movie to watch on a streaming service, algorithms shape our everyday experiences in ways that often go unnoticed. These algorithmic processes play a crucial role in tailoring user experiences and providing personalized recommendations by analyzing large swaths of user data and behavior, streamlining decision-making processes, and customizing content. Although algorithms provide users with an unprecedented amount of convenience, the advantages associated with algorithmic processes come at a cost. If humans are behind the creation of algorithmic systems, do their biases contribute to algorithmic designs? What exactly happens to the vast amounts of personal data that are collected by algorithms? Is it dangerous for a person to only be exposed to ideas that correlate with their personal perception of the world? These are some of the questions that we must ask ourselves as global citizens of the world when interacting with algorithmic systems and services, for these processes have far-reaching influence over our lives. Beneath the guise of convenience and efficiency, algorithms have the potential to be a detriment to society because they have been known to perpetuate bias, invade privacy, and create harmful echo chambers.

Algorithms rely on historical data that is often biased, and as a result, they have the capacity to inadvertently perpetuate discrimination. Researchers at The Brookings Institution have found that "algorithms rely on multiple data sets, or training data, that specify what the correct outputs are for some people or objects. From that training data, they learn a model which

can be applied to other people or objects and make predictions about what the correct outputs should be for them" (Lee, et al.). However, sometimes algorithms interpret people and objects in similar situations differently, which can interfere with predictions and lead to unfair treatment in areas like hiring, banking, and even law enforcement. For example, judges in the United States rely on an algorithmic system called the Correctional Offender Management Profiling for Alternative Sanctions to automates risk assessments that set bail and sentencing limits. Researchers have found that this algorithmic process can sometimes generate incorrect data, resulting in higher bails and longer prison sentences for people of color navigating the justice system. Discrimination perpetuated by algorithms has also been known to generate biased outcomes based on gender. For instance, Amazon recently discontinued the use of a hiring algorithm that favored male applications, resulting in a worldwide workforce that was 60 percent male. Additionally, 74 percent of the company's leadership roles were held by males. This occurred because the algorithm was created to learn the word patterns on resumes that matched the company's mostly male engineering staff. This resulted in “the AI software penalizing any resume that contained the word "women's" in the text and downgrading the resumes of women who attended women's colleges” (Lee, et al.). These situations underscore the importance of mitigating algorithmic bias, which disproportionately affects vulnerable individuals, to ensure fair and equitable outcomes in various areas of society.

When algorithms collect and analyze user data, such as internet browsing history, webpage interactions, and preferences selected while using a service or system that utilizes

algorithmic processes, the algorithm essentially forms a profile of the user. This raises numerous concerns about privacy because sometimes users do not know how much of their online activities are monitored and shared. Unfortunately, there are only a few laws that require companies to be transparent about how they utilize algorithmic processes to collect user data. Sometimes companies are not even required to let users know what exact data is used to inform certain algorithmic processes. To make matters worse, users often do not know that their data is being analyzed because companies aren't always required to disclose when a user is even interacting with an algorithm. When these algorithmic processes result in decision-making consequences for users, it is impossible for a user to provide informed consent because the user does not know that an algorithmic process is occurring. This is especially unfair when users are not aware of the factors influencing decisions that impact their lives. According to data governance expert Alex Engler, privacy concerns caused by the lack of transparency in algorithmic processes can be mitigated by "creating public-facing transparency that includes statistics about the outcomes of an algorithmic system (such as how accurate or how fair it is), descriptions about the underlying data and technical architecture of an algorithmic system, and a more comprehensive examination of its impacts" (Engler). Regulation as well as proper knowledge of algorithmic data collection processes give people power and autonomy over their lives, which, in turn, allows them to make informed decisions regarding their interactions with algorithmic systems and services.

When algorithmic processes filter content delivered to users based on user preferences, they aim to provide a level of personalization that matches user interests. While this can enhance

user experience and maintain user engagement, it can also inadvertently create echo chambers. According to the senior research engineers at The Brookings Institution, echo chambers "push users into increasingly narrow ideological ranges of content" (Brown, et al.). Echo chambers limit exposure to different perspectives, leaving individuals only exposed to like-minded opinions. This has the potential to reinforce toxic polarizing points of view, and when it occurs on a large scale, it can lead to damaging real-world consequences. This phenomenon was evident during the January 6 Capitol insurrection. Researchers at The Brookings Institution studied disclosed Facebook Files and found evidence that "adjustments to Facebook's algorithm amplified angry and polarizing content and may have helped foment the January 6 insurrection" (Brown, et al.).

This example underscores why echo chambers can be so dangerous—they confirm user bias. When a user continuously interacts with content that matches their existing ideals, their preconceived notions are reinforced. Furthermore, since exposure to a wide range of opinions, thoughts, and ideas is the stepping stone towards developing critical thinking skills, echo chambers jeopardize independent thinking by preventing users from encountering and critically engaging with challenging worldviews. Even worse, when users are only capable of engaging with a narrow range of content, they may become more susceptible to being manipulated by outside forces that aim to exploit their preferences for their own agenda. With regulation on algorithms currently being slim, the chances for this occurring are increased, and at the moment, the only way to counter the damaging effects of echo chambers is through media literacy.

One might argue that, although algorithms may have a few shortcomings, they have led to increased efficiency and convenience in our lives. Nicole Lee of the Brookings Institution has noted that algorithms "scale and statistical rigor promise unprecedented efficiencies" (Lee, et al.). It may seem that algorithms' ability to analyze large amounts of data and provide tailored recommendations is an asset that outweighs concerns related to bias, privacy, and echo chambers. Some may even say that the benefits algorithms offer should not be overshadowed by their limitations. However, these objections do not entirely address the fundamental issue at hand. While the use of algorithmic systems and services has undeniable advantages, it is essential to acknowledge that their shortcomings can lead to significant societal harm. Algorithms have changed the fabric of our everyday lives, however, we must recognize their utility while addressing their limitations to ensure that algorithmic processes do not undermine individual rights, equity, and the diversity of thought.

Algorithms rely on historical data and have shown the capacity to perpetuate bias. Since algorithms collect and analyze vast amounts of user data, sometimes without clear transparency, users are susceptible to infringements upon their rights to privacy. As demonstrated by the events surrounding the January 6 Capitol insurrection, algorithms have the potential to create echo chambers that reinforce harmful narrow ideologies and decrease critical thinking skills among users. As global citizens of the world who rely upon and are largely dependent on algorithmic processes to run a myriad of aspects of our daily lives, we must address algorithmic limitations while simultaneously reaping the benefits of the increased efficiency that they have brought to

our lives. This requires a joint effort of everyday users and governmental bodies, educating individuals about what algorithms are and how they work, which in turn empowers users during their interactions with algorithmic processes. Through education, continued research, and regulation, algorithms can contribute positively to our lives without perpetuating bias, compromising our rights, and stifling unique perspectives. This is important to maintain a healthy, fair, and vibrant society where people can navigate digital landscapes effectively while making informed decisions to take control of their digital lives and engage with technology in a conscious manner.

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