How Does Machine & Algorithm Bias Affect All of Us?

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READ

"The Ethical Algorithm: The Science of Socially Aware Algorithm Design." Michael Kearns and Aaron Roth, 2020. *Sirsi.net*. Accessed 3 Feb. 2023.

Algorithms have made our lives more efficient, more entertaining, and sometimes, better informed. At the same time, complex algorithms are increasingly violating the basic rights of individual citizens. Allegedly anonymized datasets routinely leak our most sensitive personal information. Statistical models for everything from mortgages to college admissions reflect racial and gender bias. Meanwhile, users manipulate algorithms to "game" search engines, spam filters, online reviewing services, and navigation apps. Michael Kearns and Aaron Roth offer a new approach: a set of principled solutions based on the emerging and exciting science of socially aware algorithm design.

"The Filter Bubble: What The Internet Is Hiding From You." Eli Pariser, 2011. *Sirsi.net*. Accessed 3 Feb. 2023.

In December 2009, Google began customizing its search results for each user. Instead of giving you the most broadly popular result, Google tries to predict what you are most likely to click on. According to MoveOn.org board president Eli Pariser, Google's change in policy is symptomatic of the most significant shift to take place on the Web in recent years—the rise of personalization. In this groundbreaking investigation of the new hidden Web, Pariser uncovers how this growing trend threatens to control how we consume and share information as a society—and reveals what we can do about it.

"How Search Engines Work: Crawling, Indexing, and Ranking - Beginner's Guide to SEO." Brittany Mueller and Moz Staff, 2023. *Moz.com*. https://moz.com/beginners-guide-to-seo/how-search-engines-operate. Accessed 3 Feb. 2023.

This article gives a quick overview of how search engines find, scan, and index web pages for specific terms and how they rank them in order to be found when you search online.

WATCH

Grey, CGP. "How Machines Learn." YouTube, 18 Dec. 2017, www.youtube.com/watch?v=R9OHn5ZF4Uo. Accessed 3 Feb. 2023.

This humorous video explains how the algorithms that make online bots work can also be too complex for bots or the humans who created them to understand and yet still consistently improve the bots techniques to work better over time.
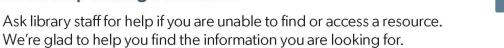
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MIT Technology Review. "Podcast: In Machines We Trust - Hired by an Algorithm." YouTube, 23 June 2021, www.youtube.com/watch?v=ztcVB_zh_M0. Accessed 3 Feb. 2023.

If you've applied for a job recently, then it is all but guaranteed that your application was reviewed by software—in most cases, before a human ever saw it. In this episode, the first in a four-part investigation into automated hiring practices, the hosts speak with the CEOs of ZipRecruiter and Career Builder and one of the architects of LinkedIn's algorithmic job-matching system to explore how AI is increasingly connecting job searchers and employers. But while software helps speed up the process of sifting through the job market, algorithms have a history of biasing the opportunities they present to people by gender, race, and in at least one case, by whether you played lacrosse in high school.

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