



## The End of Work: Part II

### Artificial Intelligence promises to revolutionize work but may not be worth the cost

Artificial Intelligence (AI) has long been the subject of science fiction and speculation – HAL 9000 to Wall-E – and has driven the latest resurgence in the discussion of the “end of work.” AI is computer programming made of algorithms (codes that direct the program) that adapt to the information they are given, so it “learns.” Because it learns, it has the capacity to take over tasks that up until now have required human thought. AI is already performing job tasks in careers formerly considered “safe” from automation, like customer service jobs,<sup>1</sup> and could, in theory, replace journalists,<sup>2</sup> accountants,<sup>3</sup> and engineers.<sup>4</sup>

AI is changing work and will continue to do so. AI is being deployed in the workplace to screen job applicants, create staffing schedules, analyze productivity and personnel costs, as well as track customer behavior. Human behavior-focused AI<sup>5</sup> has already had unintended negative consequences. Its impact is wider ranging than simply replacing workers.

Many of these unintended consequences can be traced back to the lack of diversity in AI development.<sup>6</sup> Algorithms carry the biases of those who designed them<sup>7</sup> (how the task is defined) and the data on which AI is trained.<sup>8</sup> In fact, there are deep, inherent biases built into AI solutions.<sup>5,6</sup> As a field, AI development is even more overwhelmingly male and white than its already disproportionately male and white technology sector.<sup>9, 10</sup>

1. Elliot, C. (2018, August 27). Chatbots are killing customer services. Here's why. *Forbes*. <https://www.forbes.com/sites/christopherelliott/2018/08/27/chatbots-are-killing-customer-service-heres-why/#2c6fdc0913c5>

2. Peiser, J. (2019, February 5). The rise of the robot reporter. *The New York Times*. <https://www.nytimes.com/2019/02/05/business/media/artificial-intelligence-journalism-robots.html>

3. Ohar, V. (2017). Roots will soon do your taxes. Bye-bye, accounting jobs. *Wired*. <https://www.wired.com/2017/02/robots-will-soon-taxes-bye-bye-accounting-jobs/>

4. Kak, S. (2018, February 7). Will robots take your job? Humans ignore the coming AI revolution at their peril. *NBC News*. <https://www.nbcnews.com/think/opinion/will-robots-take-your-job-humans-ignore-coming-ai-revolution-ncna845366>

5. AI had wide-ranging applications. For example, the computer program that generated the first image of a black hole can be classified as AI. See: Stein, V. (2019, April 11). Katie Bouman 'hardly knew what a black hole was.' Her algorithm helped us see one. *PBS News Hour*. <https://www.pbs.org/newshour/science/katie-bouman-hardly-knew-what-a-black-hole-was-her-algorithm-helped-us-see-one>

6. West, S.M., Whittaker, M. and Crawford, K. (2019). Discriminating Systems: Gender, Race and Power in AI. AI Now Institute. Retrieved from <https://ainowinstitute.org/discriminatingystems.pdf>

7. O'Neil, C. (2016). Weapons of math destruction: How big data increases inequality and threatens democracy. New York: Random House Books.

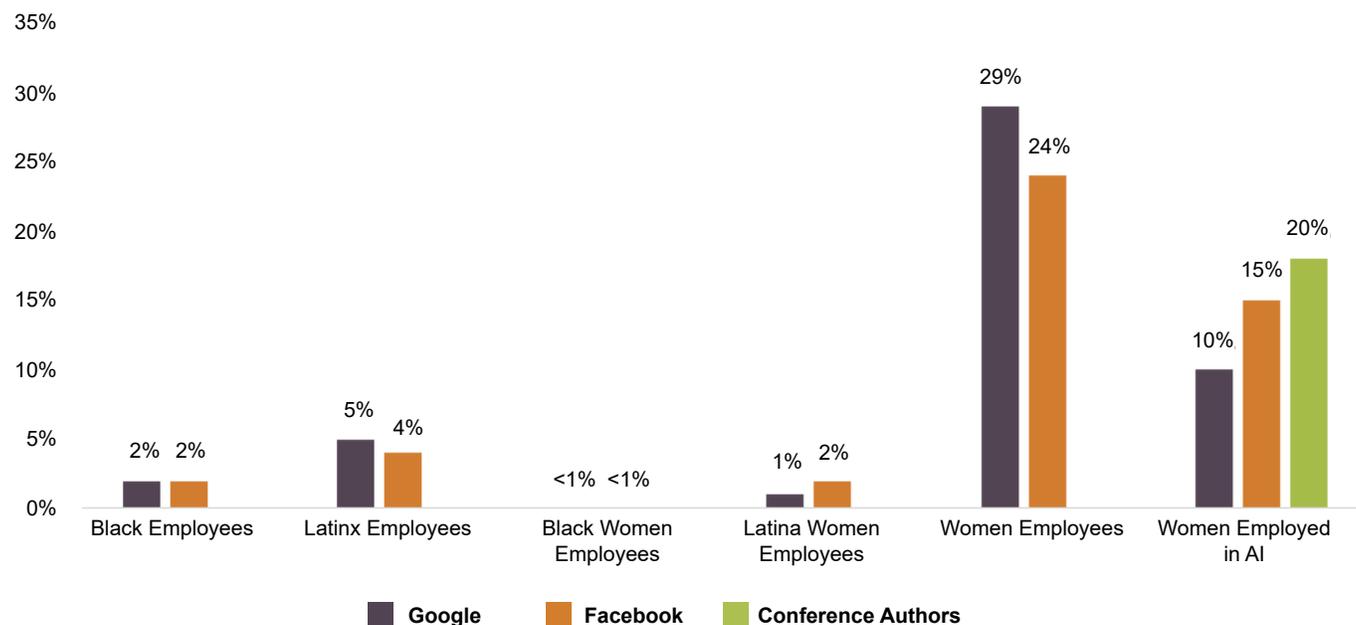
8. Buolamwini, J. (2019). Response: Racial and gender bias in Amazon Rekognition-Commercial AI system for analyzing faces. <https://medium.com/@Joy.Buolamwini/response-racial-and-gender-bias-in-amazon-rekognition-commercial-ai-system-for-analyzing-faces-a289222eeced>

9. Evans, W. and Rangarajan, S. (2017). Hidden figures: How Silicon Valley keeps diversity data secret. <https://www.revealnews.org/article/hidden-figures-how-silicon-valley-keeps-diversity-data-secret/>

10. Kiser, G. and Mantha, Y. (2019). Global AI talent report 2019. Jfgagne. <https://jfgagne.ai/talent-2019/>

The underrepresentation of women and people of color (particularly black and brown people and especially black and brown women) shapes the problems that AI labs set out to solve,<sup>11</sup> how the problems are solved, and data used to train the AI programs.<sup>8</sup> Additionally, people who do not fall into the gender binary are not reflected in the data—a glaring problem in and of itself. This is remarkably out-of-sync with an increasingly diverse workforce and customer base that interacts with, uses, and consumes AI programs and AI-driven products.

## Representation in US Technology Workforce



Source: *Global AI talent report 2019 & Reveal*

As AI gets more sophisticated, it becomes more of a black box.<sup>12</sup> Businesses and governments that purchase AI solutions often do not have access to the underlying algorithms. And, increasingly, even the designers do not know how they function.<sup>13</sup> This makes it very difficult or impossible to correct the AI algorithms.<sup>6</sup> Existing biases and prejudices are being automated so that they can be enacted faster, more consistently, and with fewer opportunities to override them.<sup>5,14</sup>

Furthermore, AI poses a genuine threat to privacy. Programs are combining information from activity trackers, cell phones, GPS devices, social media, public records, credit reporting agencies, data sources that were previously siloed and provided a modicum of privacy by not being connected to other sources. Once combined, AI predictive analytics make decisions for and about people.<sup>15</sup> In the workplace, employers are collecting and monitoring more and more data about their job applicants and employees—everything from keystrokes to personal health data.<sup>16</sup>

11. Hoffman, A.L. (2018). Data violence and how bad engineering choices can damage society. <https://medium.com/s/story/data-violence-and-how-bad-engineering-choices-can-damage-society-39e44150e1d4>

12. Democrats want feds to target the 'black box' of AI to reduce bias: 'Self-regulation has failed' (2019, April 11). *Atlanta Black Star*. <https://atlantablackstar.com/2019/04/11/democrats-want-feds-to-target-the-black-box-of-ai-to-reduce-bias-self-regulation-has-failed/>

13. Knight, W. (2017). The dark secret at the heart of AI. *MIT Technology Review*. <https://www.technologyreview.com/s/604087/the-dark-secret-at-the-heart-of-ai/>

14. Eubanks, V. (2018). *Automating inequality*. New York: St. Martin's Press.

15. Feldstein, S. (2019, April 22). How artificial intelligence systems could threaten democracy. *The Conversation*. <https://theconversation.com/how-artificial-intelligence-systems-could-threaten-democracy-109698>

16. Harwell, D. (2019, April 10). Is your pregnancy app sharing your intimate data with your boss? *The Washington Post*. [https://www.washingtonpost.com/technology/2019/04/10/tracking-your-pregnancy-an-app-may-be-more-public-than-you-think/?utm\\_term=.f5264a2acc4](https://www.washingtonpost.com/technology/2019/04/10/tracking-your-pregnancy-an-app-may-be-more-public-than-you-think/?utm_term=.f5264a2acc4)

These AI program promise to improve productivity and work alignment. However, in practice, employees have often found it “dehumanizing” and exploitative.<sup>17</sup> It vastly increases the potential for discriminatory behavior on the part of employers. From the initial screening of applicants, to how the work is assigned can, AI can facilitate bias instead of correcting it.

It is important to avoid the ethical quagmires created when people use AI to make decisions without understanding its limitations. This causes people to fail in exercising judgement and oversight on these tools.<sup>13</sup>

## Recommendations for Employers & Policymakers

**Address barriers in the AI field for women, nonbinary people, and people of color, particularly black and Latino people.** The problem of women and people of color being underrepresented in the tech industry has long been recognized. However, as AI Now Institute<sup>6</sup> has identified, industry and academia has focused on the pipeline leading to employment—increasing the number of people from underrepresented demographics interested in entering the field—rather than discriminatory recruiting and hiring practices and hostile educational and work environments.

AI Now Institute asserts that academic departments and AI firms need to address racism and misogyny in the field directly in addition to the various programs they have undertaken to increasing the volume of people from underrepresented demographics entering academic programs and applying for positions.<sup>6</sup>

**Be critical of AI promises.** It is difficult to distinguish between press and promotion of AI products. The AI field has no ethical oversight to ensure that products produced are not exploiting or endangering marginalized groups.<sup>18</sup> AI products are rarely independently tested<sup>5</sup> and their operation is often opaque. Performance in the real world is likely to deviate from the conditions under which the developers tested them<sup>14</sup> and some AI products' biases are not correctable.<sup>6,10</sup>

**Demand transparency.** Require that purchasers have access to AI product's algorithms. Purchasers should conduct regular audits for bias of AI-driven or -informed decision-making.

17. Belton, P. (2019). How does it feel to be watch at work all the time? *BBC News*. <https://www.bbc.com/news/business-47879798>

18. Chen, S. (2017). AI research is in desperate need of an ethical watchdog. *Wired*. <https://www.wired.com/story/ai-research-is-in-desperate-need-of-an-ethical-watchdog/>

## Recommendations, continued

**Plan for privacy from the outset.** Policymakers should prioritize the protection of personal data, specifically workers' data, as workers may unknowingly share or be coerced into sharing data they have the right to withhold from their employer, such as personal health information.

Policymakers should also consider how workplace data collection may impact worker safety. They should update protections for worker health and well-being to reflect newly emerging means through which workers may be exploited or endangered.

**Maintain human oversight.** When employing AI, particularly using AI to inform substantive decisions about people's lives, it is essential to maintain human oversight and not fall into the trap of assuming that the computer-generated answer is better than a human would make. The very nature of AI means that its decision-making is as likely to be biased as the individuals who developed it and the data used to train it.

The EU has adopted the General Data Protection Regulation<sup>19, 20</sup> and, recently, 42 countries including the US signed a nonbinding international accord laying out an AI governance framework.<sup>21</sup> However, in the US, cities<sup>22</sup> are on the leading edge of AI use—cities like Seattle are adopting smart city technologies—and regulation.

New York City and the City of Oakland have put in place mechanisms review algorithms used by their agencies. New York City has a task force to review any algorithm used by the city for bias<sup>23</sup> and Oakland requires that any surveillance mechanism be presented to a privacy advisory committee before approval of their city council.<sup>24</sup> The City of San Francisco has banned the use of facial recognition software out of concerns. Others are considering following suit.

---

19. Satriano, A. (2018, May 6). What the G.D.P.R., Europe's tough new data law, means for you. *The New York Times* <https://www.nytimes.com/2018/05/06/technology/gdpr-european-privacy-law.html>

20. "Are there restriction on the use of automated decision-making?". European Commission. Retrieved June 30, 2019 [https://ec.europa.eu/info/law/law-topic/data-protection/reform/rules-business-and-organisations/dealing-citizens/are-there-restrictions-use-automated-decision-making\\_en](https://ec.europa.eu/info/law/law-topic/data-protection/reform/rules-business-and-organisations/dealing-citizens/are-there-restrictions-use-automated-decision-making_en)

21. Murgia, M. & Shrikant, S. (2019, May 29). How governments are beginning to regulate AI. *The Financial Times*. <https://www.ft.com/content/025315e8-7e4d-11e9-81d2-f785092ab560>

22. Vander Ark, T. (2018, June 26) How cities are getting smart using artificial intelligences. *Forbes*. <https://www.forbes.com/sites/tomvanderark/2018/06/26/how-cities-are-getting-smart-using-artificial-intelligence/#240785563803>

23. Zima, E. (2018, January 4). Could New York City's AI transparency bill be a model for the country? *Government Technology*. <https://www.govtech.com/policy/Could-New-York-Citys-AI-Transparency-Bill-Be-a-Model-for-the-Country.html>

24. Tadayon, A. (2018, May 2). Oakland to require public approval of surveillance tech. *Easy Bay Times*. <https://www.eastbaytimes.com/2018/05/02/>

Beyond the Headlines. Policy and labor market updates for those working to help low-income and low-skill individuals advance through education, training and living-wage jobs

About Seattle Jobs Initiative. Seattle Jobs Initiative creates opportunities for students, workers and business to succeed by helping education and job training programs meet the demands of a new economy. We find and apply solutions for people to gain the skills they need for good jobs that create prosperity for all in today's marketplace.

Supported by the City of Seattle Office of Economic Development

Contact Information. For questions or suggestions, please email David Kaz, SJI Director of Policy & Communications at [dkaz@seattlejobsinit.com](mailto:dkaz@seattlejobsinit.com).



[www.seattlejobsinitiative.com](http://www.seattlejobsinitiative.com)

206.628.6975

1200 12th Ave S, Suite 160  
Seattle, WA 98144