

AI will change the world, so it's time to change AI

To that ensure AI meets its potential as a transformative tool, it must be developed by a truly representative research community, say Tess Posner and Li Fei-Fei.

Artificial intelligence (AI) is a driving force of the technological transformation that humanity is undergoing, but there is a diversity crisis in the field. We risk missing out on the perspectives that could shape the most profound solutions to the challenges we face going into the next decade if we continue on our current path.

This need couldn't be more clear. As of 2019, fewer than 14% of AI research authors in the preprint server, arXiv, were women. Researchers in east Asia, Europe and North America authored 86% of papers published at AI conferences in 2018; researchers in regions including Latin America, the Caribbean, the Middle East, north Africa, sub-Saharan Africa and south Asia represented the remaining 14%. In the United States in 2020, 1.7% of technical roles at Facebook were held by Black people. AI-powered applications and products can inherit, or even amplify, centuries-old human biases, prejudices and blind spots. For example, because of biased training data, algorithms intended to diagnose skin cancer could fail to identify potential cases in patients with darker skin. Similarly, an AI system for predicting a decline in kidney function was found to be much more accurate for male patients than for female patients. At the same time, we've seen the potential for AI to be used to create a positive impact in the world, tackling issues in medicine, health care and climate science.

We are at a turning point. AI's influence continues to grow, but representation and inclusion of a diversity of researchers in the field does not. It's critical that we seize this moment to create structures that will support long-term, positive changes. This won't happen via a single mechanism or quick fix. It starts with early education and extends to the existing structures of power within academia, work cultures among current AI researchers, and gatekeeping functions of research publishing, to name a few levers of change.



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Through our organization, AI4ALL, we are training and nurturing a community of future, interdisciplinary AI leaders with a diversity of lived experiences and identities. A few of the students we've had the honour of working with over the past five years include a high-school student using AI to track pesticide-contaminated water in her agricultural community, a college student researching inequitable uses of algorithmic decision-making in the US criminal justice system, and a young woman creating assistive technology inspired by her vision-impaired family member. Our dream has long been to make it possible for more people like these to enter, persist and lead in AI research and related fields.

We offer questions to institutions, publishers and researchers to spur discussion on improving inclusion in AI.

For academic institutions

- Who primarily benefits from funding, support and recognition within your institution?
- Do you report on the demographics of who is hired and promoted at your institution?
- Are you calling on faculty from underrepresented groups to do the brunt of your diversity work within individual departments?
- Can you incentivize interdisciplinary research that encourages collaboration between people with different approaches, perspectives and experiences?

For publishers

- Are you actively seeking voices that haven't yet weighed in on research topics you're publishing about?
- Can you ensure that your peer reviewers represent a diversity of lived experiences and speciality areas, including sociologists and ethicists, who may have insight into the societal impacts of the research being considered for publication?
- If you're publishing work that may negatively impact a particular group, can you make space for a voice from that group to respond?
- Can you prioritize publishing interdisciplinary research?

For researchers

- Can you collaborate with researchers with different skills and perspectives from you?
- Can you work to give fair credit and recognition to researchers from underrepresented groups?
- Are you paying attention to diversity and inclusion when attending or organizing seminars, workshops or conferences?
- Can you examine where unconscious bias might influence hiring, admissions or other decisions you contribute to?

AI research is changing many aspects of our world. It's an incredible privilege to be a part of a field that is so rewarding and influential. With that privilege comes the responsibility to extend its benefits as far as possible. This means sharing the opportunity to innovate with a wider, more diverse cohort of contributors. It means bringing a broader range of perspectives and experiences to bear on the problems we seek to solve. Above all, it means ensuring the impact of our work is positive, not just for a fortunate few, but for everyone.