Andrew Plum

Professor Soule

CS 400

4/29/2024

The Egalitarian Argument for AI

The Egalitarian Future of AI

AI: The Hope for a More Egalitarian Future

Many of us like to believe that anything is possible; that whatever it is we dream to be, with enough hard work and dedication we can achieve it. We have the belief that we are the architects in control of our own future. However, this seems to be more of a myth that we have been sold to keep those who are disadvantaged to be complacent. Throughout history, the reality is there are inequalities that are seemingly out of our control. People are born unequal. Not in their innate human value, but in their abilities. Some of us are naturally smarter, healthier, more charismatic, and all around more capable than others. It has been this way since the dawn of humankind. And it’s not due to any moral failing that some people are just doomed to be nothing from the start. Some of us were just luckier to be born into a better caste than others. Acknowledging that some are naturally more gifted than others can be even more difficult to accept when accompanied by beliefs of determinism or indeterminism which in both there is a lack of free will and the control over one’s future which accompanies it. Suddenly one might realize this future they had dreamt up would only ever be that: a dream. Many might feel uncomfortable with the only conclusion left that whether they want to or not, they are allotted some role in life and that is that. Where is the hope in that conclusion? For people throughout time, by coming to these conclusions, there was no hope of believing again in that future of possibilities they had once dreamt about. However, there is a chance that this might not be the case for people in the future. With the improvements of AI, there is the possibility of a more egalitarian future in which everyone is as capable as anyone.

Like all powerful technologies, they can be used to do good to the world, and AI is no exception. The advent of AI has changed many things, and one of the things it will likely continue to change will be improving the abilities of humans. With generative ai models like Midjourney suddenly I can compete with skilled artists despite my lack of innate artistic creativity. With Sora I can now start my film production company to compete with major Hollywood studios. And with ChatGPT I can pass the bar exam even though I have never extensively studied the law for a full day in my life. Despite my underlying abilities not having improved without the tool, that effectively does not matter when I have the tool as I can still achieve what I wish to through its use. And because it is becoming less possible to compete with AI because of the improvements that come about as time goes on, the playing field is becoming more even for all involved. Evidence of this is illustrated in several different studies. A study done by a team of researchers from MIT, Harvard, and several other universities looked to explore the effect generative AI, specifically GPT-4, had on the performance of students when using it to complete a series of tasks. The article published by MIT Sloan School of Management found says:

Interestingly, the researchers observed a bigger jump in performance scores for the participants in the lower half of assessed skills who used GPT-4 compared with those in the top half of assessed skills — at 43% and 17%, respectively — when they were compared with their baseline scores (i.e., no AI use). (Somers)

If people at the bottom half of the performance distribution see larger AI driven improvement in performance than the people at the top end of the performance distribution, then the gap in performance has decreased. There are other studies that have found similar findings. An article published by Nielsen Norman Group said one study focusing on the effect of AI on programming found that:

Programmers with fewer years of experience benefited more from the AI tool, though the effect was only marginally significant, at *p*= 0.06. Also, programmers who spent fewer hours per day coding benefited more from the AI tool than participants who coded for more hours per day. This second effect was significant, at *p*= 0.02. Taken together, these two findings suggest that less-skilled programmers benefit more from AI than more-skilled programmers do. (Nielsen)

It makes sense that when AI is used, there would be a larger increase in performance for those who are less skilled than those who are more skilled because less skilled individuals have more room for improvement. The use of AI brings everyone below a certain threshold of performance more towards that threshold. And if you are above that threshold where your expertise exceeds that of the AI’s, it is less likely you will experience any major improvement in your performance. In this way, AI democratizes access to expertise. And if everyone is just as skilled as everyone else in their abilities, then they all have a more equal shot at achieving that future they dreamt of.

1. https://mitsloan.mit.edu/ideas-made-to-matter/how-generative-ai-can-boost-highly-skilled-workers-productivity
   1. Interestingly, the researchers observed a bigger jump in performance scores for the participants in the lower half of assessed skills who used GPT-4 compared with those in the top half of assessed skills — at 43% and 17%, respectively — when they were compared with their baseline scores (i.e., no AI use).
2. https://law.stanford.edu/2023/04/19/gpt-4-passes-the-bar-exam-what-that-means-for-artificial-intelligence-tools-in-the-legal-industry/
   1. Research collaborators had deployed GPT-4, the latest generation Large Language Model (LLM), to take—and pass—the Uniform Bar Exam (UBE). GPT-4 didn’t just squeak by. It passed the multiple-choice portion of the exam and both components of the written portion, exceeding not only all prior LLM’s scores, but also the average score of real-life bar exam takers, scoring in the 90th percentile
3. https://www.nngroup.com/articles/chatgpt-productivity/
   1. “Generative AI has a third effect: narrowing the gap between the most talented and the least talented employees.”
   2. In study 1 (customer support), the **lowest-performing** 20% of the agents (the bottom quintile) **improved** **their task throughput by 35%** — two and a half times as much as the average agent. In contrast, the best-performing 20% of the agents (top quintile) only improved their task throughput by a few percent.
   3. In study 2 (writing business documents), the professionals who scored the lowest when writing a document without AI help improved their scores much more than high-scoring participants when they received support from ChatGPT. The difference between good and bad writers was around 2–3 points (on the 1–7 quality rating scale) without using AI; this difference narrowed to roughly a single point when using ChatGPT. (This difference assessment is my own, from eyeballing the figures in the original paper. In the original paper, the narrowing of the skills gap is explained in terms of a statistically significant reduction in the correlation between the quality of the work with-AI and without-AI in the treatment group compared with the control one, who used a tool that was not AI-based. However, that can be hard to interpret for readers without good statistical skills.)
   4. In study 3 (programming), programmers with fewer years of experience benefited more from the AI tool, though the effect was only marginally significant, at *p*= 0.06. Also, programmers who spent fewer hours per day coding benefited more from the AI tool than participants who coded for more hours per day. This second effect was significant, at *p*= 0.02. Taken together, these two findings suggest that less-skilled programmers benefit more from AI than more-skilled programmers do.

AI no doubt is a powerful tool that can lead to tremendous good for humanity. However, it also has the potential to cause great harm to humanity. Just as we could see a reduction in inequality due to the democratization of expertise offered by AI, it is just as likely and if not more plausible that with AI we could see a worsening of inequality. The industrial revolution and the gilded age that followed are proof of how rapid technological changes which impact the economy can lead to worsening inequality. There could be many reasons for worsening inequality, but the clearest ones are the job loss and working hour reductions caused by companies automating tasks. A recent study by MIT CSAIL, MIT Sloan, The Productivity Institute, and IBM’s Institute for Business Value said:

Their findings show that currently, only about 23 percent of wages paid for tasks involving vision are economically viable for AI automation. In other words, it's only economically sensible to replace human labor with AI in about one-fourth of the jobs where vision is a key component of the work. (Gordon)

Having a significant amount of the jobs cut from the economy entails a myriad of negative implications for society, but what is even more likely to directly affect a majority of people is a reduction in working hours brought about through further automation. Accenture, a leading firm in automation, not long ago tried to examine the impact LLMs could have on the economy. In terms of the impact LLM automation has on working hours, their report says:

Across all industries, Accenture found 40% of all working hours can be impacted by LLMs like GPT-4. This is because language tasks account for 62% of the total time employees work, and 65% of that time can be transformed into more productive activity through augmentation and automation. (Daugherty et al., 2023)

The number they calculated again was only the impact they thought that LLMs could have on working hours; the number is likely much larger when accounting for the future of applications of other kinds of AI. Many people will potentially be worse off because of the adoption of AI, but this won’t be the case if the benefits from AI experienced by them (as well as society as a whole) counteract the negative impacts of adoption. This could be the case if the costs aren’t socialized, and the benefits aren’t privatized. However, on our current trajectory, it seems that this is the route that we are going down with a decreasing number of companies controlling access to this technology. The public needs to realize that if the adoption of this technology is going to help them for the better, they need to be vigilant in ensuring that that is the case. The world brought about by AI could look many different ways, but what is important we know is that world that follows is the world we chose.

<https://www.csail.mit.edu/news/rethinking-ais-impact-mit-csail-study-reveals-economic-limits-job-automation#:~:text=Their%20findings%20show%20that%20currently,key%20component%20of%20the%20work>.

* 1. A new study from MIT CSAIL, MIT Sloan, The Productivity Institute, and IBM’s Institute for Business Value is set to challenge our long-held beliefs. Their research critically examines the economic practicality of using AI for automating tasks in the workplace, with a specific emphasis on computer vision.
  2. Their findings show that currently, only about 23 percent of wages paid for tasks involving vision are economically viable for AI automation. In other words, it's only economically sensible to replace human labor with AI in about one-fourth of the jobs where vision is a key component of the work.

1. <https://www.pewresearch.org/social-trends/2023/07/26/which-u-s-workers-are-more-exposed-to-ai-on-their-jobs/>
   1. In 2022, 19% of American workers were in jobs that are the most exposed to AI, in which the most important activities may be either replaced or assisted by AI.
   2. 23% of workers have jobs that are the least exposed to AI, in which the most important activities are farther from the reach of AI. Other workers, nearly six-in-ten in all, are likely to have varying levels of exposure to AI.
   3. Jobs with a high level of exposure to AI tend to be in higher-paying fields where a college education and analytical skills can be a plus.
   4. Those with more education: Workers with a bachelor’s degree or more (27%) are more than twice as likely as those with a high school diploma only (12%) to see the most exposure.

1. <https://www.weforum.org/agenda/2023/05/jobs-lost-created-ai-gpt/>
   1. across all industries, Accenture found 40% of all working hours can be impacted by LLMs like GPT-4. This is because language tasks account for 62% of the total time employees work, and 65% of that time can be transformed into more productive activity through augmentation and automation

With all good and bad AI entails, I am cautiously optimistic for the future.

Know that fearing or embracing AI is a choice.

Yes, I read it. Excellent essay, Andrew! Very well written! 2 tiny things to fix: …with generative ai models (change to AI) Despite my underlying abilities “of” not… ( although you may not need to add “of “ to the sentence.) Great job!!!

Daugherty, P., Ghosh, B., Narain, K., Guan, L., & Wilson, J. (2023). Gen AI LLM - A new era of generative AI for everyone. Accenture.

Gordon, R. (2024, January 22). *Rethinking ai’s impact: MIT CSAIL study reveals economic limits to Job Automation*. Rethinking AI’s impact: MIT CSAIL study reveals economic limits to job automation | MIT CSAIL. https://www.csail.mit.edu/news/rethinking-ais-impact-mit-csail-study-reveals-economic-limits-job-automation

Nielsen, J. (2024, January 26). *CHATGPT lifts business professionals’ productivity and improves work quality*. Nielsen Norman Group. https://www.nngroup.com/articles/chatgpt-productivity/

Somers, M. (2023, October 19). *How generative AI can boost highly skilled workers’ productivity*. MIT Sloan. https://mitsloan.mit.edu/ideas-made-to-matter/how-generative-ai-can-boost-highly-skilled-workers-productivity