Independent Research & further reading

Guest: Amjad Masad, Daniel Priestly & Bret Weinstein: AI debate

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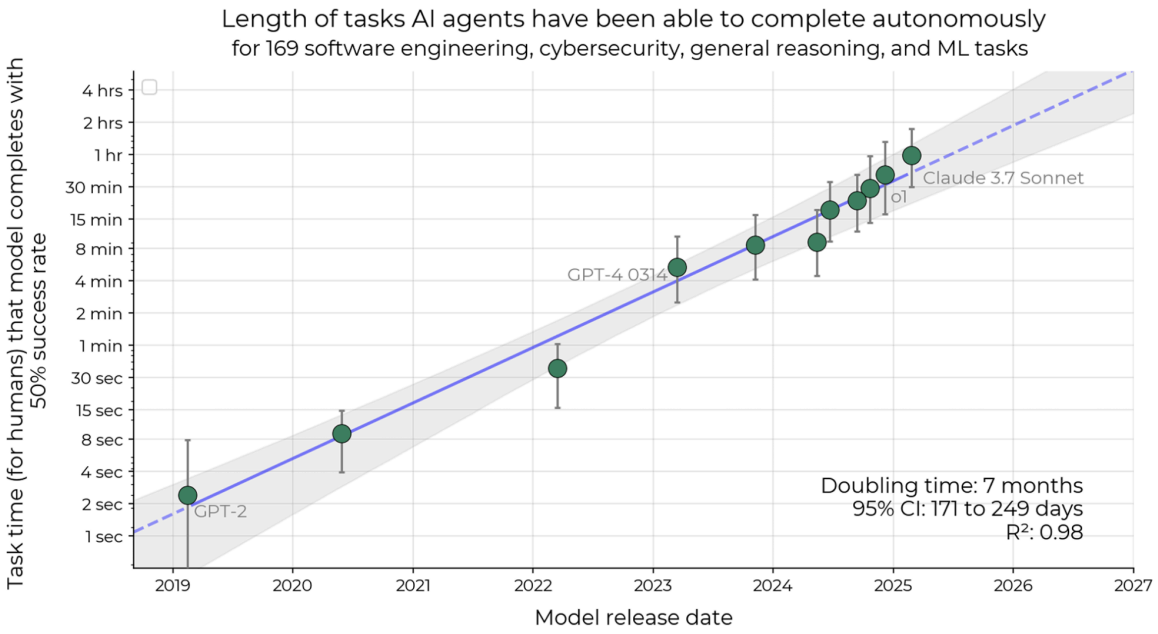
Contents

AI agents

An AI agent is a computer program that can do tasks for a person or system on its own, or with minimal help. It works by observing what's going on around it, making decisions, and taking actions to reach a goal.

> *"every seven months, the number of minutes that the agent can run for is doubling"*



"The length of tasks (measured by how long they take human professionals) that generalist autonomous frontier model agents can complete with 50% reliability has been doubling approximately every 7 months for the last 6 years" Source: Kwa et al. 2025

References 1, 2.

Open source

> *“what does the term open source mean for the average person? Yeah. Uh, open source is to, um, any sort of, uh, code or technology invention, you can put the sort of schematic or the blueprint out, uh, plus the data and the code and anything else. And then anyone can download it to their computer, run their own version of it. Mm-hmm. So it's freely, uh, uh, available, but also it's modifiable so I can change it. So a kid in Russia could download open AI's code blueprint data Yeah. And edit it, run it on their own hardware.”*

Open source means that the source code of a software program is freely available for anyone to look at, change, and share. Source code is the set of instructions that tells a computer what to do; normally, only the developers or company that made the software can see or change it. With open source, everyone can see how the software works, fix problems, or even make their own versions.

Reference 3.

LMS and suicide story

> *“the few incidents that we've heard about where, you know, the cause of LMS large language models, the technology that's powering GT has been huge headliners, uh, like New York Times. Mm-hmm. Talked about this kid that was perhaps, um, you know, perhaps goated by, by, uh, some kind of, uh, chat software that, you know, helps teenagers to be less lonely into, into suicide, which is, which is tragic. And obviously these are the kind of safety and, and abuse, uh, issues that we wanna, we wanna worry about.”*

LMS stands for Learning Management System. It is a software application or web-based platform used to create, manage, deliver, and track educational courses, training programmes, or learning and development initiatives.

Reference 4.

Commoditise your complement

> *"They don't sell AI as a service. They use it to build products. And there's this concept in business called commoditise your complement because you need AI as technology to run your service."*

Commoditising the complement involves making the tools or services that support a main product more affordable and accessible, ultimately driving higher sales and profits for the core offering.

Reference 5.

Collective action problem

> *"In game theory, we have something called a collect collective action problem."*

A collective action problem is a situation where a group of people would all be better off if everyone cooperated, but each individual has an incentive to act selfishly instead–often because they can benefit without contributing or because their personal contribution seems too small to matter. This leads to a worse outcome for the group as a whole, even though cooperation would benefit everyone.

Reference 6.

AI surpassing the combined intelligence of all humans (Elon Musk)

> *"Elon Musk predicts that by 2029 we will have AI with us, a GI. Surpasses the combined intelligence of all humans. And Sam Altman actually wrote a blog three months ago that I read where he said, we are confident now Sam Altman being the founder of Open Arrow, which, um, created chatt. We are confident now that we know how to build a GI, as we have traditionally understood it."*

Reference 7.

AI and vaccines

> *“Like I can think of Abela, I think it's Abera in Canada. Their whole business is using AI to create new vaccines. Mm-hmm. Using artificial intelligence and bigger data sets than we've never have had before. Mm-hmm. And I know, 'cause I was, I was very close to one of the founders of people involved in Abela, so that that work is going on anyway.”*

Various companies are currently using AI to predict future disease mutations, as well as to personalise vaccine development and targeted therapies. These companies include, for example, Evaxion Biotech, Baseimmune, Pfizer, Moderna and BioNTech.

References 8-12.

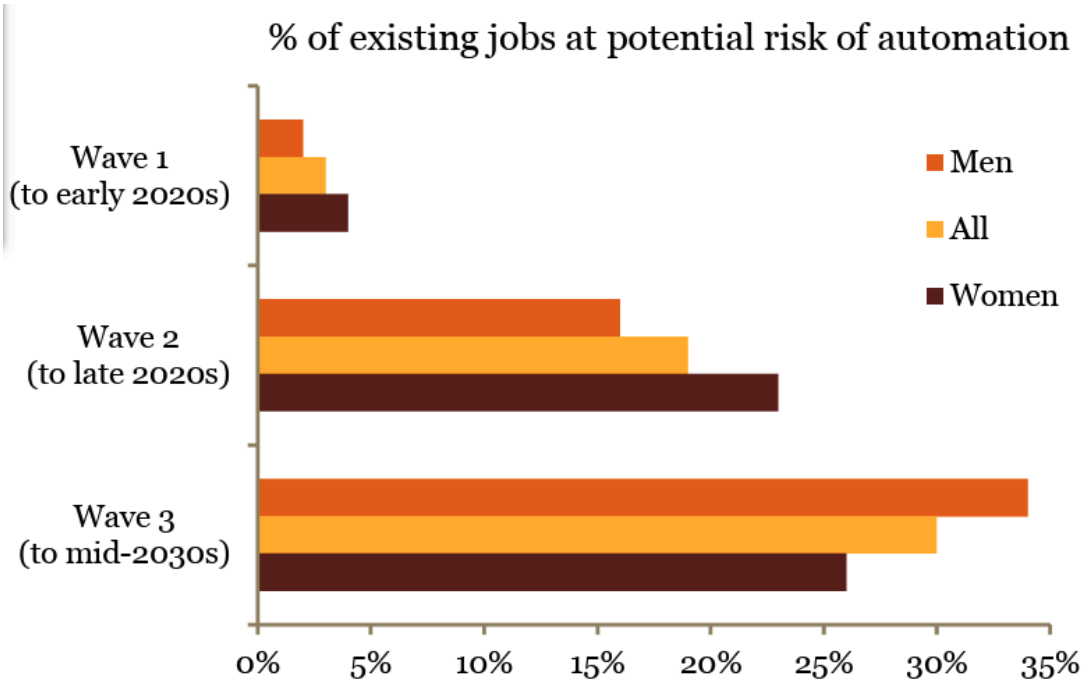
AI use among workers with a college degree

> *“about 50% of Americans who have a college degree currently use ai. Mm-hmm. The stats are significantly lower for Americans without a college degree.”*

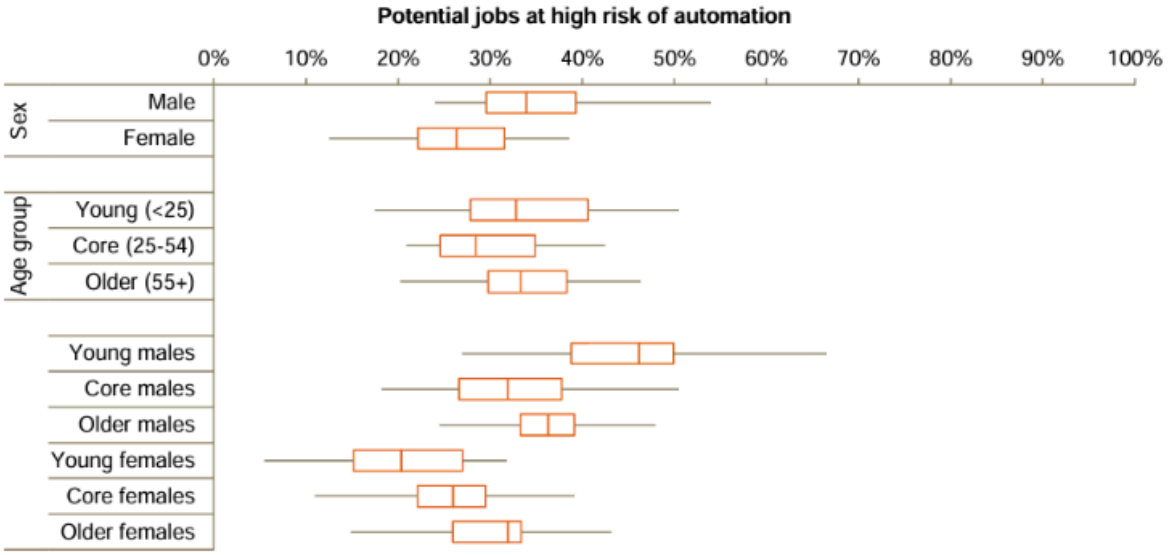
Reference 13.

What gender will be most at risk of job automation?

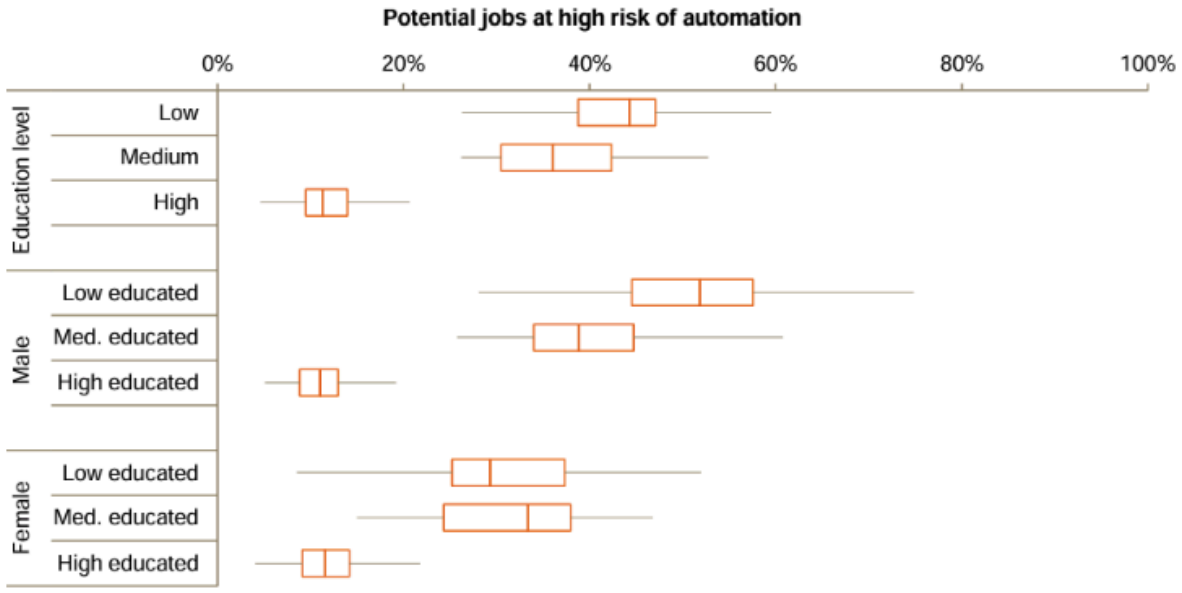
> *“Women are disproportionately affected by auto automation, which is what you were talking about there with about 80% working women with about 80% of working women in an at risk job compared to just over 50% of men, according to the Harvard Business Review.”*



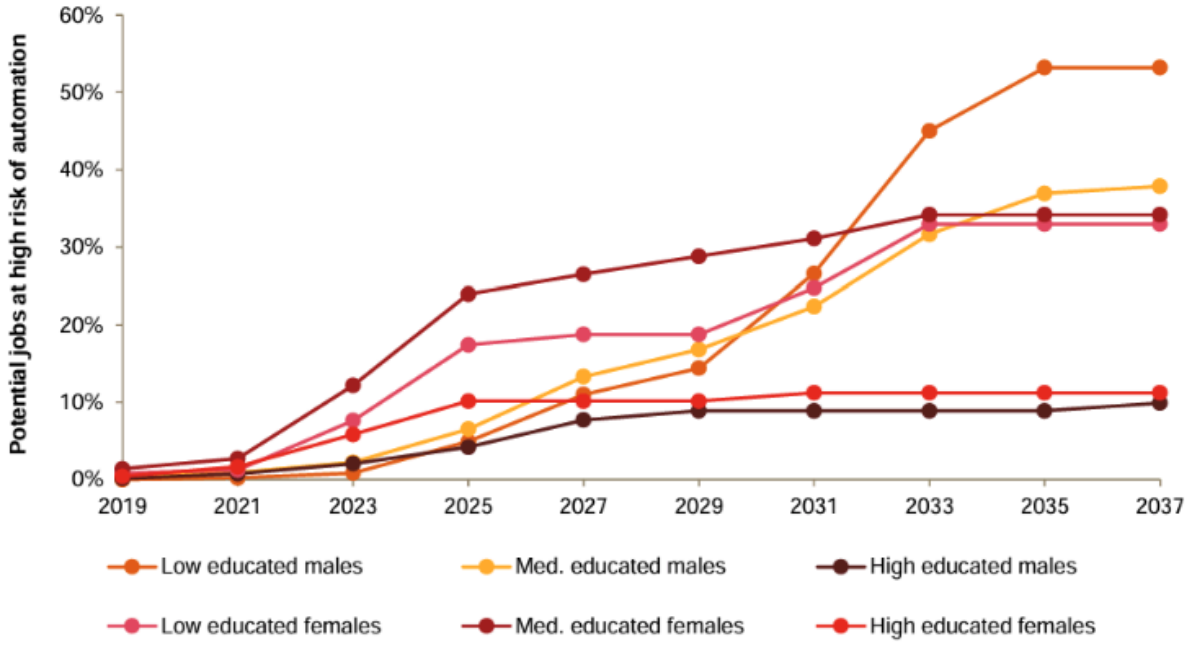
"Potential job automation rates by gender across waves" Source: (PwC)



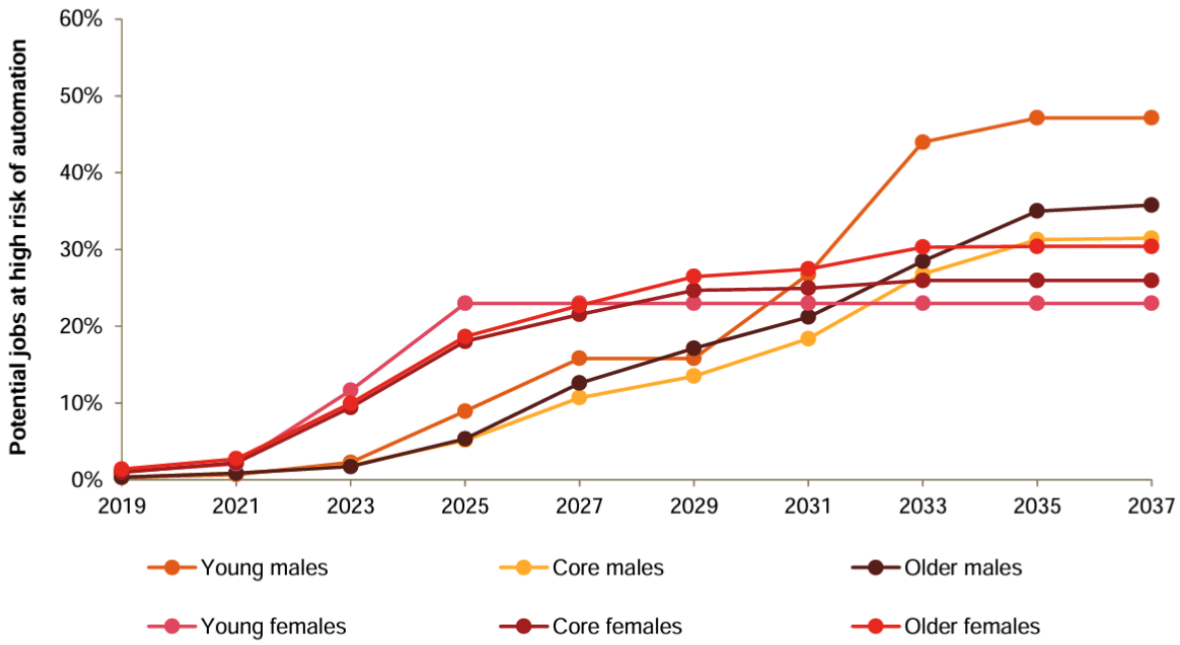
"Share of jobs with potential high rates of automation by gender and age group" Source: (PwC)



"Share of jobs with potential high rates of automation by gender and education level" Source: (PwC)



"Potential impact of job automation over time across workers by education level" Source: (PwC)

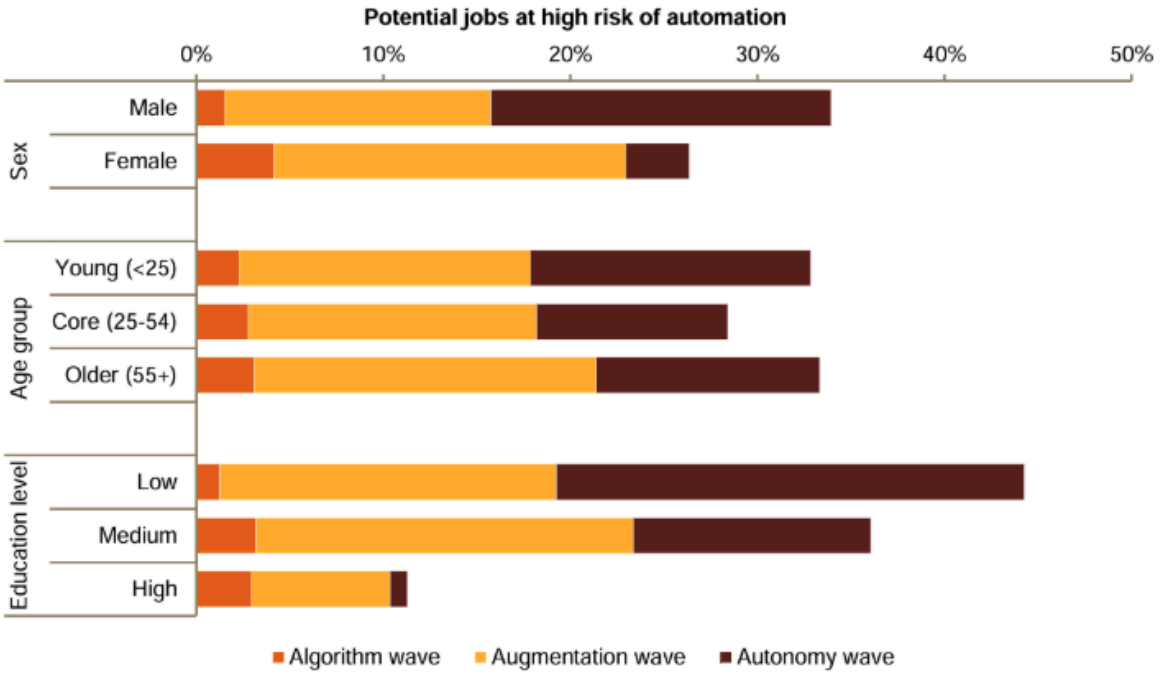


"Potential impact of job automation over time across workers by age groups" Source: (PwC)

References 14, 15.

Education level and risk of job automation

> *"jobs requiring only a high school diploma have an automation risk of 80%, while those requiring a bachelor's degree have an automation risk of just 20%."*



"Potential job automation rates by type of worker across waves" Source: (PwC)

Reference 15.

ChatGPT weekly users

> *"800 million people a week are now using, uh, chat GBT."*

In February 2025, it was reported that ChatGPT had 400 million weekly users. However, it appears this number is increasing rapidly, with more recent estimates suggesting numbers as high as 1 billion weekly users.

References 16, 17.

Poverty of stimulus (POS)

> *“actually Noam Chomsky, uh, it talks about the, uh, the, the poverty of data. It was like something paradoxical. And, you know, the reason Nom Chomsky makes this argument is because Nom Chomsky is a, is a famous linguist. And, and, um, and so he makes this argument that we have an embedded language faculty in the, in the brain and doesn't require a lot of data in order to, uh, learn and acquire that, that skill.”*

Noam Chomsky coined the term poverty of the stimulus to describe the linguistic phenomenon in which children acquire complex knowledge of language despite receiving limited and imperfect input from their environment. The argument suggests that the language children are exposed to—known as primary linguistic data—is too sparse and ambiguous to account for their detailed understanding of grammar, unless we assume the existence of innate, language-specific cognitive structures, which is referred to as universal grammar.

References 18-21.

Removing Barriers to American Leadership in Artificial Intelligence

> *“on the regulation points. It's worth saying that when Trump came into power, he signed in a new law, which is called removing barriers to American leadership in ai, which revokes previous AI policies that were deemed to be restrictive”*

Donald Trump issued an executive order titled “Removing Barriers to American Leadership in Artificial Intelligence”. This executive order was issued in early 2025 and is intended to reshape U.S. AI policy by removing regulatory obstacles and fostering innovation. The order mandates the creation of an AI Action Plan, directs federal agencies to review and amend existing policies that may hinder AI development, and emphasises the development of AI systems free from ideological bias.

Reference 22.

AI bans in Europe

> *"It's going to America and it's basically going to China. That's the, the, the vast majority of investment. So with those two in competition, any regulation that restricts air in any way is actually self-sabotage. Mm-hmm. And this is, you know, I, I live in Europe mm-hmm. Some of the time, and it's already annoying to me that when Sam Altman and OpenAI released the oh three model, this new incredible model, it's not in Europe because Europe has a regulation which prevents it from coming to Europe. So we're now at a competitive disadvantage"*

The EU AI Act has indeed introduced strict regulations for AI systems in Europe, categorising them by risk and imposing bans on "unacceptable-risk" (see below). It's possible that OpenAI or other providers may adjust their rollout in Europe to ensure compliance, but as of now, there is no official statement confirming that the o3 model is unavailable in the EU due to regulation. The Act bans certain AI applications outright, such as cognitive behavioural manipulation, social scoring, and indiscriminate biometric identification.

"**Unacceptable risk**

Banned AI applications in the EU include:

- Cognitive behavioural manipulation of people or specific vulnerable groups: for example voice-activated toys that encourage dangerous behaviour in children
- Social scoring AI: classifying people based on behaviour, socio-economic status or personal characteristics
- Biometric identification and categorisation of people
- Real-time and remote biometric identification systems, such as facial recognition in public spaces

Some exceptions may be allowed for law enforcement purposes. "Real-time" remote biometric identification systems will be allowed in a limited number of serious cases, while "post" remote biometric identification systems, where identification occurs after a significant delay, will be allowed to prosecute serious crimes and only after court approval."

Source: “EU AI Act: first regulation on artificial intelligence” *(European Parliament)*

Reference 23.

World Coin

> *“I was quite unnerved when I heard that Sam Altman's other startup was called World Coin. And World Coin was conceived with the goal of facilitating universal basic income.”*

Sam Altman is a co-founder of Worldcoin (now rebranded as World), a blockchain-based digital identity project that uses biometric eyeball-scanning "orbs" to verify a user’s unique personhood and issue a cryptocurrency called WLD. The project aims to address the challenge of distinguishing between what is AI-generated and what isn’t. Additionally, and as stated in an article on *The Verge,* “In Altman’s vision of the future, Worldcoin could also serve as a form of universal basic income for individuals whose jobs have been replaced by AI.”

Reference 24.

Anaesthesiologists

> *“Um, if you take, let's take the highest paid job in America, um, which is an anesthesiologist. Uh, this is the highest paid. Job and mo salary job. Salary job.”*

Anaesthesiologists are among the best-paid occupations in the United States.

Reference 25.

Klarna’s AI assistant

> *“This is already happening. Klarna, CEO, who has been on this podcast before, a great guy, um, said to on a blog post that they published on Klan's website saying that they now have AI customer servants agents handling 2.3 million chats per month, which is equal to having to hire 700 full-time people to do that.”*

Reference 26.

Number of large and small companies in the UK

> *“Proportionately, there are 7,000 large companies that have more than 250 employees, and there's five and a half million small businesses that have one to 10 employees.”*

In the UK, as of the start of 2024, there were about 8,250 large businesses (defined as those with 250 or more employees) in the private sector. Additionally, there are about 5.45 million small businesses total (0–49 employees).

Reference 26.

Feeling of worthlessness and suicide

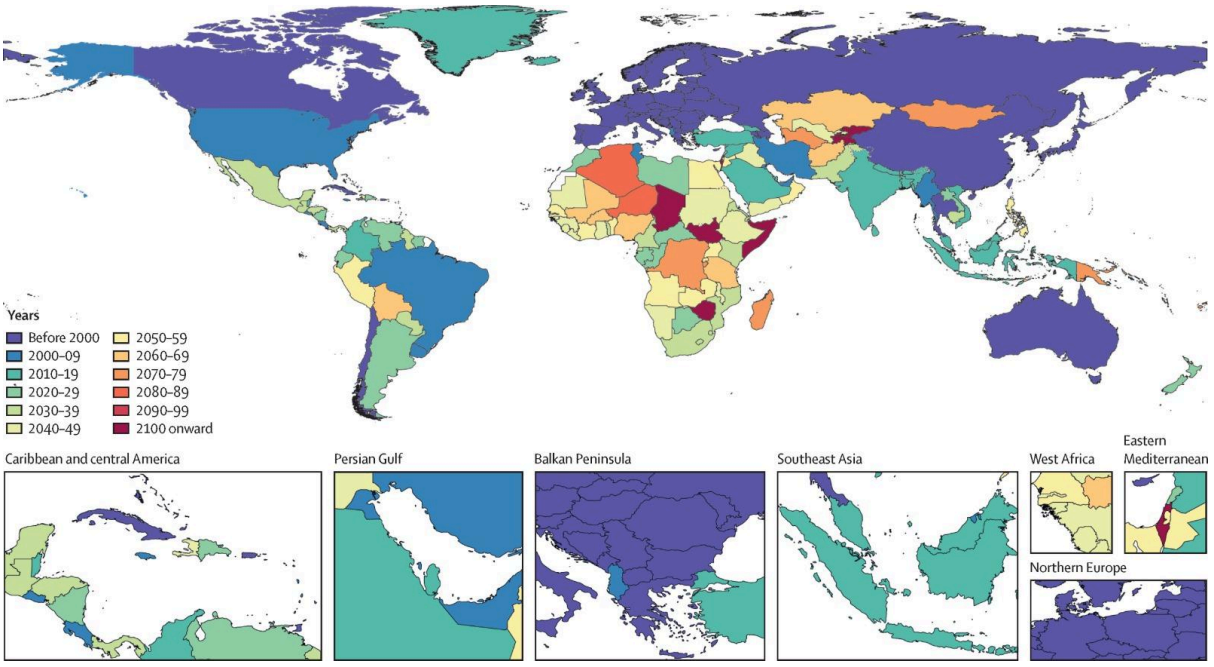
> *“there was a study done, I think it was in Australia, where they looked at suicide letters and in the suicide letters, the sentiment of men in those suicide letters was they didn't feel worthy. They didn't feel like they were worth it. They didn't feel like they were needed by their families. And this is much of what caused their psychological state.”*

Reference 28

Fertility rates in high-income countries

> *"And we're already seeing this sort of population decline in the western world, which is, was kind of scary. And I think it's often associated with affluence. Either the more money someone makes, the less likely they are to want to wanna have children, the more they try and protect their freedoms."*

Higher-income, more affluent countries typically have much lower fertility rates—often well below the replacement level needed to maintain a stable population. By 2050, projections indicate that 151 countries will have a total fertility rate below the replacement level, with this number rising to 183 by 2100. In this scenario, 23 nations—including Japan, Thailand, and Spain—are expected to experience population declines exceeding 50% between 2017 and 2100.



"Map of the year that the net reproduction rate falls below the replacement level" from [Vollset et al. (2020)].

References 29-36.

Fertility rates declining

> *"We're already in a situation where we used to be having five children per woman, per woman, in the 1950s to about two in 2021. And we're seeing a decline. If you look at South Korea, their fertility rate has fallen to 0.72, the lowest recorded globally. And if this trend continues, the country's population could half by 2,100."*

In the 1950s and 1960s, many countries had total fertility rates (TFR) of 5–6 children per woman. By the end of the 20th century, the two-child family became the norm across Europe and other regions.

South Korea's fertility rate has reached unprecedented lows, with a reported rate of 0.72 in 2023—the lowest globally. This ultra-low fertility has persisted for over two decades, with the total fertility rate (TFR) remaining below 1.3 since 2001, marking the longest duration among OECD countries. While projections extend to 2060 in some studies, detailed estimates for 2100 are less common. However, the persistent trends of low fertility and ageing suggest a continued and possibly accelerating decline, with some models and scenarios indicating the risk of the population halving by 2100 if current patterns persist.

References 37-41.

Republic of Estonia: e-Residency programme

> *"I think Estonia created this, this, uh, this idea. It's like if you're an entrepreneur, um, and if you're someone that, um, you know, is, uh, generating a lot of wealth and is desirable to have in our country, we're gonna give you rights similar to a citizen and Estonia, uh, and you can do business here. You get like tax benefits and all of that stuff."*

Estonia's e-Residency programme allows anyone in the world to start and manage an EU-based company entirely online. It offers a digital ID that provides access to Estonia's secure e-services without requiring physical residency. E-residents are considered non-residents for tax purposes and are taxed in Estonia only on income earned within the country. If an e-resident establishes an Estonian company, that company is considered an Estonian tax resident. However, if

the company's management or operations occur outside Estonia, it may also be subject to taxation in other jurisdictions, depending on local laws and international tax treaties.

To live in Estonia, non-EU citizens need a residence permit, which can be granted for work, business, study, or family reasons. Even if you are an e-resident and own a business there, you still need to apply separately for a visa or residence permit, and approval is not guaranteed.

References 42, 43.

Bloom's Two Sigma Problem

> *"I, I, I spend a lot of time in, in techno, in, in education technology, uh, and, um, you, one, one thing that is, uh, you know, as, as we say on the internet, a, a black pill about education, uh, about education in general, education intervention is there's a lot of data that shows that there are very little, uh, interventions you can make an education to generate better outcomes. Um, and so, you know, uh, there's been a lot of experiment around pedagogy, around, you know, how to configure the, the, the classroom, um, that, that have resulted in very marginal improvements. Um, and so, uh, this problem's called the Bloom's two Sigma problem, uh, bloom is in, uh, you know, uh, education, um, the theorist and, and scholar. And he, he did this study that showed that there's only one intervention and this, this has been, uh, reproduced many times. There's only one intervention that creates two sigma, two standard deviation, uh, positive outcomes in education. Meaning you're better than 99% of, uh, of, of everyone else. And that is one-on-one tutoring."*

Bloom's Two Sigma Problem highlights that one-on-one tutoring can improve student performance by two standard deviations compared to conventional teaching methods. The main issue is the impracticality and high cost of providing one-on-one tutoring to all students, making it difficult to implement at scale.

Reference 44.

Synthesis Tutor

“My kids use it and it's incredible. Yeah. As in like, um, they're interacting and, and it's adapting to their speed. Yes. And, um, it's giving them different analogies to work with. So like, you know, my son was learning about division and it's asking him to smash glass and how many pieces he smashes it into with this hammer and, you know, and, and it's saying things like, no Xa, go for it. Really smash it. And, um, and he's loving it, right? Because is that synthesis? Yeah. Yeah. I, I'm an investor in this company. Oh, well it was, it was great. It's great to watch that simulated one-on-one tutoring. 'cause it's talking to him, it's asking him questions. Um, and I can see that it's gonna get a lot better.”

Reference 45.

Seymour Papert’s Turtle Graphics

“So one of the earliest, uh, pioneers of, uh, of education technology, his name is Seymour Papper. Uh, he worked at, uh, MIT Media Lab, um, and he created, uh, this, uh, um, thing, it is called logo a turtle, a program programmable turtle. And he wanted to teach math and teach, uh, programming. And he thought computers is the best way to teach, you know, mathematical ability. And he had initially trouble teaching programming. It was such a hard, abstract concept for children to understand. His, uh, idea is physical embodiment. Let's create a physical turtle that is, that you situated on the, on the, on the floor with kids, and you tell the kids to program it, and you tell, okay, make it make a triangle. And the kid, instead of like going to the computer and trying to imagine that will stand, was like, okay, if I wanna make a triangle, I would move, you know, 45 angles this way. I'll like take three or four steps. And, you know, and so the embodiment help them kind of think with their, their body and the space. And then you go to the computer and you program it, and then they actually put the software into the computer such that you can see the turtle on your screen and you don't have to have the physical turtle. And it performed not exactly as well, but it performed really well in teaching kids math and programming and, and those, those sort of things. So absolutely like the, you know, physical world, physical embodiment. By the way, this is how the new frontier of AI is reinforcement learning. And this is how AI is, is learning as well.”

References 46, 47.

Amish populations

> *“We, we, how would we change? How would we slow the rate of change? Well, I, I mean, you can, you can, you can be the Amish, right? You can be the Amish in living in your own communities. And I would assume some people would, would want that. Well, I'm, you know, when Heather and I wrote our book, I wanted the first chapter to be Are the Amish right? And the answer is they can't be exactly right because they picked an arbitrary moment to step off the escalator. But are they right that there's something dangerous about this continuing pattern of technological change? Clearly they are. What do the Amish do for anyone that doesn't know the Amish live as if it was, what, 18, 18 50 or something? So they live in a, they don't use cars. They, I think they do have phones, but they do not have electricity. Basically, they, they voluntarily accept a techno, they're basically a Luddite community.”*

The Amish are a distinct Christian ethnoreligious group known for their intentional separation from mainstream society, traditional lifestyles, and strong community values. Spread across North America, the Amish maintain unique cultural, religious, and social practices that influence their approach to modernity, health care, technology, and family life.

References 48-50.

Former CEO of Youtube

> *“The CEO who apparently made that decision is now dead, quite possibly due to a vaccine injury that she might have learnt about in advance by watching my channel.”*

Susan Wojcicki, the former CEO of YouTube, passed away on August 9, 2024, at the age of 56, after a two-year battle with non-small cell lung cancer. There is no evidence that vaccines cause cancer. Additionally, the available research does not support the idea that vaccination causes cancer to worsen. Research continues to expand the role of vaccines in both cancer prevention and therapy.

References 51-57.

Chess: computer *versus* human

> *"playing computer on its own. So if you put a chess playing computer on another, um, if you add a human to one, they would like more, much more likely to win. (...) but that's not true about chess anymore, right? Yeah, it's not true. I, I, it was a period of, that was a brief period. It was a period of time. Um, but, but I think, uh, uh, chess is a closed system. It is very unlike anything in the world. But I think there's an analogy there. Yeah. Um, but you know, it's, uh, if, if I'm wrong and there's nothing special about humans, then what is the point of even pondering that?"*

Reference 58.

AlphaZero

> *""in the example of chess, the alpha chess model. Went from no knowledge of chess to being the best player in the world in 48 hours and can now play a million games of chess at once with anyone in the world, all at ti at all times, and beat everyone simultaneously. And it kind of went from not knowing how to do that to 48 hours being the best in the world"*

AlphaZero is an artificial intelligence (AI) program developed by DeepMind. Introduced in December 2017, after just four hours of training, AlphaZero defeated Stockfish 8, one of the strongest traditional chess engines, in a 100-game match with 28 wins, 72 draws, and no losses.

References 59, 60.

Iran’s modesty laws: facial recognition technology

“I've heard in, um, Iran that, uh, they have facial recognition cameras that detect whether women are wearing hijabs in their own cars and it automatically detains the car if you are driving and you're not wearing a hijab. And if you are, uh, certainly if you're walking down the street, it just picks that up and immediately you are, you are in trouble. Uh, you can, like, it acts as a police officer and a judge. And, you know, a law ma, a lawmaker, it's the judge, jury, and executioner essentially. And it's just happens instantaneously. (...) Iran has implemented a comprehensive surveillance system to enforce its mandatory ha hijab laws utilizing various technologies, one of which is cameras and facial recognition. So they've put cameras in public spaces to identify women who are not adhering to their hijab dress code.”

(...)

And like all you would need is a change of government that wanted to implement something similar and all the base layer technologies already in there, it gets a little bit worse in around because they have this new app called the Nazar app, where the government has introduced the Nazar mobile application, which allows you as a citizen to report another citizen who is not wearing their hijab. And it, it logs their location a time, um, when they weren't wearing it, and the vehicle license plate with the crowdsource data, it can then go after that individual.”

Since 2023, Iranian authorities have installed cameras in public spaces and on major roadways to identify women not wearing the hijab, including inside their own vehicles. These cameras are equipped with facial recognition technology, which cross-references images against biometric data collected for National ID cards, enabling authorities to identify and penalise women who violate modesty laws.

References 61-65.

Canada convoy protest

“what happened in Canada with the, uh, truckers, uh, uh, sort of, uh, protests where they froze their bank account by virtue of just being there just by, just by being in that location”

In February 2022, during the "Freedom Convoy" protests in Canada–where truckers and supporters demonstrated against COVID-19 vaccine mandates by blocking streets and border crossings–the Canadian government took the unprecedented step of freezing the bank accounts of individuals linked to the protests. Deputy Prime Minister and Finance Minister Chrystia Freeland explained that these actions were intended to "follow the money" and disrupt the financial networks sustaining the protests, including funds raised through crowdfunding platforms and cryptocurrencies. Law enforcement agencies, including the RCMP, shared intelligence with banks to identify individuals directly or indirectly associated with the blockades.

References 66-68.

Face recognition technology

> *“London has just put those face cam facial recognition systems into London and also all throughout Wales. Um, and they're being rolled out at speed. “*

London has recently begun installing its first permanent live facial recognition (LFR) cameras, starting with a pilot in Croydon, south London. These cameras are mounted on street furniture such as lampposts and buildings and are designed to scan the faces of people passing through busy public areas, comparing them against a police database of wanted individuals. The Metropolitan Police state that if a scanned face does not match anyone on the watchlist, the data is immediately deleted. Previously, the Met Police used mobile facial recognition units–vans equipped with the technology that could be deployed to various locations–but the new permanent installations represent a significant escalation in the use of this technology. Additionally, South Wales Police has also been a leading adopter of facial recognition technology.

References 69-71.

AI arms race: China and United States

> *“at the moment, in terms of autonomous weapons, both the US and China are investing heavily in AI powered weapons, autonomous drones on cyber warfare, um, because they're scared of the other one getting it first.”*

Both China and the United States are exploring AI for a range of military uses, from logistics and supply chain optimisation to more advanced applications like autonomous drones, battlefield robotics, and AI-driven surveillance. There are concerns about the potential for AI to control swarms of drones or other autonomous weapons, fundamentally changing the nature of warfare.

References 72-74.

Nick Bostrom: The Vulnerable World Hypothesis

> *“His name's Nick Bostrom, and he, he, uh, he's, he was trying to think of ways in which we can contain AI. And the thing that he came up with is perhaps more oppressive than something that AI would come up with is like, total surveillance state.”*

Nick Bostrom, a prominent philosopher at Oxford University, has argued that the increasing power and accessibility of technology could eventually enable individuals or small groups to cause catastrophic harm to humanity. In his "Vulnerable World Hypothesis", Bostrom suggests that, to prevent civilisation-ending events–especially those arising from new, dangerous technologies–society may need to consider forms of extremely effective preventive policing, which would likely require mass surveillance and robust global governance.

References 75, 76.

Fermi paradox

> *“professor, his name is, uh, Fermi, um, uh, he asked the question, uh, if the universe is, is that vast, then where are the aliens?”*

The Fermi paradox highlights the contradiction between the high probability that intelligent extraterrestrial life exists in the universe and the complete lack of evidence for such life. With hundreds of billions of stars in the Milky Way and billions of potentially habitable planets, statistical reasoning suggests intelligent civilisations should be common. Yet, we have no confirmed signs of their existence or contact with Earth. Some argue that the paradox is not a true paradox but rather a reflection of our limited search capabilities and understanding of life’s criteria.

References 77-79.

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2. Kwa, T., West, B., Becker, J., Deng, A., Garcia, K., Hasin, M., Jawhar, S., Kinniment, M., Rush, N., Arx, S. V., Bloom, R., Broadley, T., Du, H., Goodrich, B., Jurkovic, N., Miles, L. H., Nix, S., Lin, T., Parikh, N., … Chan, L. (2025). Measuring AI Ability to Complete Long Tasks (No. arXiv:2503.14499). arXiv.
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