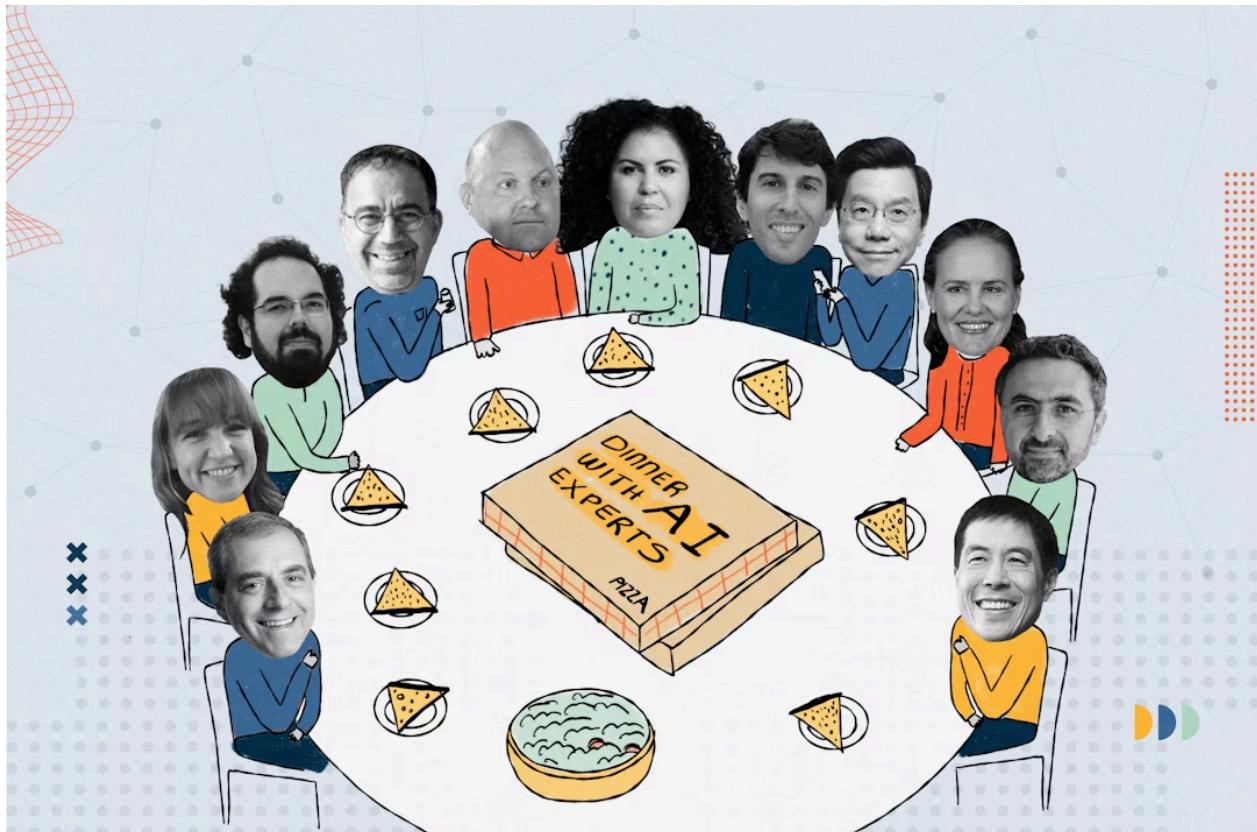


**REPORT** Published December 5, 2023 • 26 minute read

# Table for Twelve: Dinner with the Foremost Experts on AI



*Mike Sexton, Senior Policy Advisor for Artificial Intelligence and Digital Technology, Fredrick Hernandez, Economic Fellow, 2023-2024, Jim Kessler, Executive Vice President for Policy*

We're all trying to get smarter on AI. Well, suppose you could have dinner with some of the smartest experts on AI and get their take? Pull up a chair.

We chose 11 AI thinkers—AI creators, defense experts, economists, academicians, tech capitalists, and sociologists—and condensed their viewpoints into 500 words with a link to go deeper. Some are true AI believers, others are deep skeptics, many fall in between. Why 11? So you could be number 12. Would you like red or white with your bots?

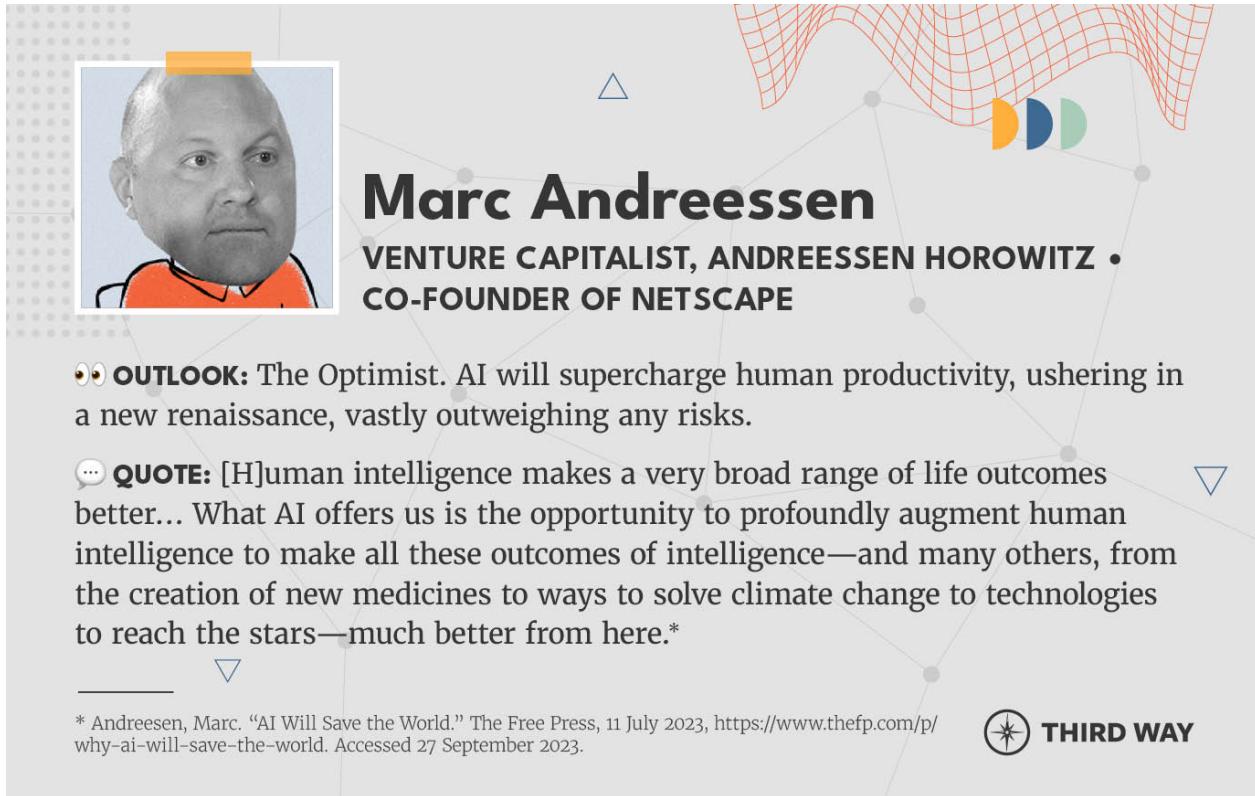
# AI Thinkers at the Table

1. Marc Andreessen: Venture Capitalist, Andreessen Horowitz; Co-Founder of Netscape
2. Eliezer Yudkowsky: Co-Founder of the Machine Intelligence Research Institute
3. Mustafa Suleyman: Co-Founder of DeepMind, Inflection AI, and author of *The Coming Wave*
4. Michèle Flournoy: Former Under Secretary of Defense; CNAS founder; Advisor to the Special Competitive Studies Project
5. Zeynep Tufekci: Professor of Sociology, Princeton; author of *Twitter and Tear Gas: The Power and Fragility of Networked Protest*
6. Kai-Fu Lee: Founder of Sinovation Ventures, former President of Google China
7. Daron Acemoglu: Economist; Institute Professor, MIT
8. David Autor: Ford Professor of Economics, MIT; Co-Chair, MIT Work of the Future
9. Andrew Imbrie: Professor, Georgetown University; co-author of *The New Fire*
10. Safiya Noble: Professor of Gender & African American Studies, UCLA; author of *Algorithms of Oppression*
11. Micheal Chui: Partner, McKinsey Global Institute, Business and Economics Research Arm

*This is the first product in a multi-year series to help educate decision-makers on the policy choices confronting Congress and the Administration on next generation Artificial Intelligence. Each summary represents our interpretation of their outlook based on published interviews and writings and have not been approved or edited by each individual.*

# Marc Andreessen

## Venture Capitalist, Andreessen Horowitz; Co-Founder of Netscape



**OUTLOOK:** The Optimist. AI will supercharge human productivity, ushering in a new renaissance, vastly outweighing any risks.

**QUOTE:** [H]uman intelligence makes a very broad range of life outcomes better... What AI offers us is the opportunity to profoundly augment human intelligence to make all these outcomes of intelligence—and many others, from the creation of new medicines to ways to solve climate change to technologies to reach the stars—much better from here.\*

\* Andreessen, Marc. "AI Will Save the World." The Free Press, 11 July 2023, <https://www.thefp.com/p/why-ai-will-save-the-world>. Accessed 27 September 2023.

**THIRD WAY**

Marc Andreessen, arguably the most prominent venture capitalist in Silicon Valley, has helped develop society-changing internet companies from Netscape to Meta. A self-described “effective accelerationist,”<sup>1</sup> he is ecstatic about AI’s potential to transform society for the better.

Effective accelerationism, or “e/acc,” is a new philosophy that sees “the singularity,” the arrival of artificial general intelligence (AGI), as inevitable and positive and seeks to expedite its occurrence.<sup>2</sup> Imagine a version of ChatGPT that can improve itself better than OpenAI’s staff, whose intelligence then grows independently and exponentially.

The moral bargain of e/acc is analogous to that of a contemporary time-traveler going back to 1823 and telling skeptics: “the growing pains of the Industrial Revolution are harrowing, but in 200 years, these technologies will help house and feed billions of people. Human productivity and ingenuity will surpass your wildest dreams; do not try to stop this train.” Andreessen and e/acc embrace the theory of the singularity and believe AGI will benefit humanity more than we can imagine—so much so that to deny our future selves its fruits by *not* accelerating its development is immoral.

Just as the Industrial and Information Ages have occurred without rendering swaths of productive humans unemployable, Andreessen denies that AI will generate structural unemployment.

Productivity per capita has been increasing for decades, delivering more goods and services cheaper and systematically reducing want. There is not a fixed amount of productivity needed in the global economy: it will continue increasing as technology develops.

But if a sizeable segment of humanity is about to become 30% more productive, won't we cleave into AI-haves and AI-have-nots? If AI's productivity gains post-singularity will be truly exponential, won't inequality increase exponentially as well?

No. Like computers, cell phones, and the internet, AI will become universally accessible. At first, these technologies were too expensive for most people, but they became cheaper and more ubiquitous. Today, they are practically universal. The cell phone is one of the most basic human needs, and it is not a scarce resource: the solid majority of even Somalia, a failed state,<sup>3</sup> had mobile subscriptions in 2016.<sup>4</sup>

Andreessen cedes that "AI will make it easier for bad people to do bad things." However, just as industrialization paved the way for the World Wars and the internet for cyber warfare, the gains of these revolutions outweigh the harms by orders of magnitude. We must take seriously the challenge of managing negative repercussions from AI, but its development cannot and should not be stopped—he believes.

**Read more: [AI Will Save the World](#)**

# Eliezer Yudkowsky

## Co-Founder of the Machine Intelligence Research Institute

**Eliezer Yudkowsky**  
CO-FOUNDER OF THE MACHINE INTELLIGENCE  
RESEARCH INSTITUTE

**OUTLOOK:** Catastrophist. Yudkowsky is deeply alarmed by recent advances in AI and thinks we must halt its development immediately to avert disaster—but will probably fail.

**QUOTE:** If somebody builds a too-powerful AI, under present conditions, I expect that every single member of the human species and all biological life on Earth dies shortly thereafter.\*

\* Yudkowsky, Eliezer. "The Open Letter on AI Doesn't Go Far Enough." Time, 29 Mar. 2023, <https://time.com/6266923/ai-eliezer-yudkowsky-open-letter-not-enough/>. Accessed 18 October 2023.

**THIRD WAY**

Eliezer Yudkowsky's professional background is as distinctive as his philosophy on AI. Raised a Modern Orthodox Jew, he received extensive religious instruction but never attended high school—he is entirely self-taught. Nevertheless, at just 21, he co-founded the Singularity Institute for Artificial Intelligence, known today as the Machine Intelligence Research Institute (MIRI).<sup>5</sup>

Artificial general intelligence (AGI)—the superintelligence that will mark the arrival of “the singularity”—has two distinguishing characteristics that threaten our survival, in Yudkowsky's view. First, it will be exponentially faster and smarter than us, and second, it will have none of the emotional or moral trappings that humans associate with biologically derived intelligence. In his words, “the AI does not love you, nor does it hate you, and you are made of atoms it can use for something else.”<sup>6</sup>

AI evolves differently from human intelligence: quickly, systematically, and exponentially. There are no environmental constraints that will code genes into AI to make it pro-social, the way humans instinctively cultivate goodwill and community because it made our genes likelier to be passed on over tens of thousands of years. Why would we assume AGI, without any capacity for empathy, will remotely share our basic notions of right, wrong, and justice?

Yudkowsky cites synthetic biology as a likely vector for AI to destroy humanity.<sup>7</sup> There are scientific laboratories that manufacture proteins on demand based on DNA sequences, giving a computer-

confined AI the means to build genuine artificial life or viruses. Yudkowsky is not alone in this concern: Inflection AI founder Mustafa Suleyman has also highlighted the perilous intersection of AI and synthetic biology.<sup>8</sup>

Although Yudkowsky regards AGI with Lovecraftian horror, he and MIRI are dedicated to imbuing new AI forms with basic human values that can avert catastrophe. This challenge is known as “the alignment problem,” and the term for a human-aligned AI is “Friendly AI.”<sup>9</sup> While other writers and researchers have explored the field,<sup>10</sup> Yudkowsky and MIRI’s contributions are the leading edge and have been indispensable.

And while his predictions may sound outlandish, Yudkowsky is hardly a fringe figure. MIRI’s Singularity Summits have featured PayPal Founder Peter Thiel, psychologists Daniel Kahneman and Steven Pinker, and iconic futurist Ray Kurzweil.<sup>11</sup> Yudkowsky’s fervent, principled AI alarm convinced Elon Musk,<sup>12</sup> who co-signed a letter urging a six-month AI development pause in March 2023.<sup>13</sup>

OpenAI CEO Sam Altman, the progenitor of ChatGPT, has called himself an “eliezer yudkowsky fan fiction account” on Twitter.<sup>14</sup> Despite their apparently diametric differences, Altman credits Yudkowsky with popularizing AGI long before it was considered a prudent investment, even saying he may one day deserve the Nobel Peace Prize for his unique and invaluable work.<sup>15</sup>

**Watch: Will superintelligent AI end the world?**

# Mustafa Suleyman

**Co-Founder of DeepMind, Inflection AI, and author of The Coming Wave**



A graphic featuring a portrait of Mustafa Suleyman in the top left corner. The background is a light gray with a network of white lines and several blue and orange geometric shapes (triangles, circles, and a wavy line) scattered across it. The text 'Mustafa Suleyman' is in a large, bold, black font, with 'CO-FOUNDER OF DEEPMIND • INFLECTION AI • AUTHOR OF THE COMING WAVE' in a smaller, bold, black font below it. At the bottom, a quote is presented: 'OUTLOOK: Wary but determined. Complacency and “pessimism aversion” could unleash the worst impulses of AI, but for every potential disaster, there is a possible solution.' and 'QUOTE: [AI] is driven by powerful incentives: geopolitical competition, massive financial rewards, and an open, distributed culture of research. Scores of state and non-state actors will race ahead to develop them regardless of efforts to regulate and control what's coming, taking risks that affect everyone, whether we like it or not.\*' A small note at the bottom left says '\* Mustafa Suleyman with Michael Bhaskar, The Coming Wave, Crown Publishing, 2023, page 17.' In the bottom right corner is the 'THIRD WAY' logo, which is a circle with a stylized 'W' inside.

Suleyman is one of the architects of AI, but he is shaken by the creature he has helped to birth. He sees potential greatness from AI but also immense peril—particularly when paired with advances in synthetic biology. He warns that past efforts to contain new technology have generally failed.

The productivity, wealth, and power that advanced AI is unleashing to tech developers, and early adopters are too great to pass up. And that incentive structure combined with an open system, like that in the US, would propel people, companies, and research institutions to invent and innovate at breakneck speed.

Meanwhile, AI's risks can be seen as so existential that people experience “pessimism aversion”—the tendency to dismiss possible negative outcomes too immense to bear. We have already seen pessimism aversion arrest discourse and policy progress on climate change, which, like AI, requires difficult tradeoffs to manage. Pessimism aversion could infect the entire AI eco-system—policymakers, the media, and the tech community—so that there is a dangerous imbalance between innovation and protection.

While he posits that containment has historically failed, Suleyman, like every entrepreneur, is a problem solver. He lays out “Ten Steps Toward Containment,” encouraging strict regulation for frontier AI models like ChatGPT and his own chatbot, Pi. He echoes MIT biotechnologist Kevin Esvelt that swift international action is needed to control biolabs where AI may support the creation of new pathogens.<sup>16</sup> He also opposes allowing AI to act with autonomy or recursively self-improve,<sup>17</sup> which can prevent AI from going rogue or developing exponentially into a superpowered “artificial general intelligence” or AGI. These are bold stances with tangible tradeoffs—few AI developers are calling for limits this robust—but they may prove essential at staving off technologists’ worst fears of a superintelligent AGI backfiring catastrophically on humanity.

But, Suleyman argues, it’ll take a real change in how tech companies and government operate to meet that challenge. Rapid progress and innovation are the nature of the tech industry—not constructing guardrails. “The number of AI safety researchers is still minuscule: up from around a hundred at top labs worldwide in 2021 to three or four hundred in 2022. Given that there are thirty to forty thousand AI researchers today, it’s shockingly small,” he writes.<sup>18</sup> But recognition of this problem among tech leaders, civil society, and policymakers gives Suleyman hope that AI can fulfill its promise and avoid its pitfalls.

**Read more:** [We need an AI equivalent of the Intergovernmental Panel on Climate Change](#) (with former Google CEO Eric Schmidt)

# Michèle Flournoy

**Former Under Secretary of Defense; CNAS founder; Advisor to the Special Competitive Studies Project**



Michèle Flournoy  
FORMER UNDER SECRETARY OF DEFENSE •  
CNAS FOUNDER • ADVISOR TO THE SPECIAL  
COMPETITIVE STUDIES PROJECT

**OUTLOOK:** Determined. Ceding the AI race to China is not an option.

**QUOTE:** I don't think we know exactly how fast [China is] moving... We cannot afford to take our foot off the gas.\*

\* Koppel, Ted. "Can AI Be Trusted in Warfare? – CBS News." CBS News, 1 Oct. 2023, <https://www.cbsnews.com/news/ai-artificial-intelligence-warfare-pentagon/>. Accessed 10 October 2023.

**THIRD WAY**

An experienced and respected authority on US defense policy, Michèle Flournoy has served in senior DoD roles under the Clinton and Obama administrations and cofounded the Center for New American Security think tank. More recently, she joined the founding board of advisors of the Special Competitive Studies Project (SCSP).

Flournoy assesses AI through the lens of the US defense establishment, which considers China a long-term strategic threat to the US and the core principles of democracy and freedom of expression. No one wants a war with China, but deterrence means delivering a credible response. The US can't allow Chinese aggression against democracies in Asia, and AI deployment may prove decisive in that rivalry.

Flournoy believes digital authoritarianism is an insidious and widespread threat,<sup>19</sup> and she argues that the US should collaborate with NATO to ensure we develop AI with principled guidelines that do not lose sight of the values we're fighting for. "We need to reinvent our alliances and our own frameworks for information dominance consistent with our values," she wrote.<sup>20</sup> Making AI a strategic priority for NATO would be an enormous force multiplier.

It's hard to ignore the echoes of the Cold War in Flournoy's career. In 2021, Flournoy joined the board of advisors of the bipartisan SCSP, a research initiative dedicated to harnessing AI in the US to compete against and eclipse the strength of authoritarianism and China. Its work is explicitly modeled after the 1956 Special Studies Project,<sup>21</sup> led by then-professor Henry Kissinger to craft a grand strategy for the US to compete with communism and the Soviet Union.

One of the core products of the SCSP is its Offset-X strategy.<sup>22</sup> The US's major modern military campaigns—Vietnam, Iraq, and Afghanistan—have been counterinsurgency operations. There is a huge difference between fighting guerrillas and fighting foreign armies, and the Offset-X strategy outlines what new capabilities the military must invest in to defeat the People's Liberation Army.

Much more than a dry white paper, Offset-X offers ample fodder for military or sci-fi buffs. It explains how the military will operate as a distributed network, leveraging technology to organize our forces most effectively. Humans and machines will work as teams, automating repetitive tasks so humans can focus on jobs that require careful context and judgment. It's thought-provoking and, admittedly, a little scary to think about.

The bottom line is that the military can't afford not to invest in AI and other emerging technologies. Flournoy and SCSP have impeccably bipartisan credentials, so it's fair to say this is the general consensus of the US defense establishment.

Read more: [NATO Must Tackle Digital Authoritarianism](#)

## Zeynep Tufekci

**Professor of Sociology, Princeton; author of Twitter and Tear Gas: The Power and Fragility of Networked Protest**

**Zeynep Tufekci**  
PROFESSOR OF SOCIOLOGY, PRINCETON •  
AUTHOR OF TWITTER AND TEAR GAS: THE POWER  
AND FRAGILITY OF NETWORKED PROTEST

**OUTLOOK:** Cautious. AI is a transformative technology, but how it plays out depends far more on humans than software.

**QUOTE:** What we need to fear most is not what artificial intelligence will do to us on its own, but how the people in power will use artificial intelligence to control us and to manipulate us in novel, sometimes hidden, subtle and unexpected ways.\*

\* Tufekci, Zeynep. "Zeynep Tufekci: We're Building a Dystopia Just to Make People Click on Ads | TED Talk." TED, Sept. 2017, [https://www.ted.com/talks/zeynep\\_tufekci\\_we\\_re\\_building\\_a\\_dystopia\\_just\\_to\\_make\\_people\\_click\\_on\\_ads](https://www.ted.com/talks/zeynep_tufekci_we_re_building_a_dystopia_just_to_make_people_click_on_ads). Accessed 13 October 2023.

 **THIRD WAY**

Zeynep Tufekci was born in Istanbul, so the impacts of technology in the Middle East hit especially close to home. With the onset of social media and the Arab Spring, it seemed the region would topple all its authoritarians and achieve coexistence and democracy. If you asked protestors today—specially in Yemen, Libya, or Syria—they'd say social media's promise was vastly overstated.

She's similarly suspicious about AI's potential within social media. Many of us dismiss AI-tailored ads for a presidential campaign or a mattress we already bought as mere annoyances. We take for granted that our AI-sorted feeds on YouTube and Twitter cater to our interests and preferences. Tufekci's calls this "persuasion architecture."

To illustrate the potential macro effects of "persuasion architecture," Tufekci highlights a 2010 study Facebook performed on 61 million users,<sup>23</sup> where it showed some users an Election Day banner with an "I voted" button, and others the same banner with thumbnail pictures of their *friends* who had voted. By simply showing some users those pictures, Facebook turned out 340,000 more voters. This experiment encompassed the benign act of voting, though Tufekci points out, the 2016 election was decided by 100,000 votes.

Targeted advertising—the core business model of social media platforms—leverages AI to cater to users' demographics, political views, personal interests, and much more. Based on Facebook's study, there is no doubt that AI-enabled targeted advertising on social media has the potential to swing national elections. (Russia sent us that memo in 2016— did you get it?)

On YouTube and our social feeds, similar AI-enabled content curation is effective at maintaining our attention for hours at a time. AI identifies and validates our political worldviews, often by showing us news that makes us irrepressibly outraged and compels us to post and comment. The power of persuasion architecture narrows our "public sphere" and in the hands of authoritarian states like China is nothing short of dystopian.

However, Tufekci sees profound promise in AI in the form of encyclopedically omniscient and emotionally intelligent chatbots. "The right approach when faced with transformative technologies," she says, "is to figure out how to use them for the betterment of humanity."<sup>24</sup> The revolution of having virtually all human knowledge at our fingertips is a civilizational leap as historic as when Greeks invented the alphabet and no longer had to recite the 12,000-line *Odyssey* epic poem from memory.<sup>25</sup> But with deepfakes and nefarious actors we must be on guard against "not truth but only the semblance of truth," to quote Plato. Or what Tufekci calls "a high-quality intellectual snow job."<sup>26</sup> Still, that shouldn't spoil our overall view of ChatGPT and similar chatbots. After all, does anyone regret the invention of the alphabet?

**Read more: [What Would Plato Say About ChatGPT?](#)**

# Kai-Fu Lee

## Founder of Sinovation Ventures, former President of Google China



**Kai-Fu Lee**  
FOUNDER OF SINOVATION VENTURES •  
FORMER PRESIDENT OF GOOGLE CHINA

**OUTLOOK:** The Future is Bright—and it's in China.

**QUOTE:** The dramatic transformation that deep learning promises to bring to the global economy won't be delivered by isolated researchers producing novel academic results in the elite computer science labs of MIT or Stanford. Instead, it will be delivered by down-to-earth, profit-hungry entrepreneurs teaming with AI experts to bring the transformative power of deep learning to bear on real-world industries.\*

\* Lee, Kai-Fu. *AI Superpowers: China, Silicon Valley, and the New World Order*. 1st ed., Harper Business, 2018. Pages 24–25.

**THIRD WAY**

Kai-Fu Lee has a knockout resume. Born in Taiwan in 1961, he studied at Columbia with a lanky Hawaiian named Barack Obama before getting his PhD at Carnegie Mellon. He went on to work at Apple and Microsoft before becoming President of Google China, which he left in 2009 to start Sinovation Ventures.<sup>27</sup> He currently resides in Beijing.

Like fellow venture capitalist Marc Andreessen, Lee is optimistic about AI's prodigious societal value. He also thinks China is far better equipped to harness AI and dominate the new industrial revolution than America. He points out that PwC projects AI to contribute \$15.7 trillion to the global economy by 2030<sup>28</sup> with China reaping \$7 trillion.<sup>29</sup>

Lee says American observers perceive China's tech economy as dominated by copycats rather than true innovators. This is not without reason: from e-commerce titan Alibaba to ride-hailing service Didi, much of China's tech ecosystem consists of business models ripped wholesale from American industry leaders. What Americans overlook is that this macro-level constraint fosters a culture of ruthless efficiency among Chinese tech giants that will be decisive in the AI era.

America's technology sector is a chaotic beast: from the dot-com bubble of the early 2000s to the collapse of FTX, American investors are chronically susceptible to misguided hype. They gravitate toward visionary companies with airy ideals like WeWork. While some persist like Apple, many flame out like Theranos. Even when idealistic American startups succeed, their lofty aspirations inevitably distract from their primary objectives: winning and profit.

This problem does not exist in China, Lee says. China's copycat economy races to replicate successes—it doesn't reward utopian Birkenstock-wearers with empty promises and half-baked business plans. When Chinese startups compete, the goals are clear, and the winner is determined by grit, relentlessness, and agility. Second place doesn't mean second best: Meituan—China's Groupon—had to race and defeat *thousands* of competitors to corner its market <sup>30</sup> and is now valued at over \$90 billion. <sup>31</sup>

Americans may have the best AI talent, but this will not be decisive. <sup>32</sup> Lee argues the best AI will be AI trained with the most computing power on the most data possible, regardless of how smart its developers are. That AI, he says, will be in China: industry-friendly privacy standards have made China the Saudi Arabia of data, <sup>33</sup> and its tech sector is well prepared to marshal whatever computing power is needed to out-train Western AIs by brute force.

Lee says the AI future is coming, it's bright, and it's in China. Better get used to it.

**Read more:** [How AI Will Completely Change the Way We Live in the Next 20 Years](#)

# Daron Acemoglu

Economist; Institute Professor, MIT

A portrait of Daron Acemoglu, an economist, is set against a background of a network of lines and nodes. The network features a red wavy line, a blue triangle, and a green circle, all connected by a web of grey lines and dots. The portrait is a headshot of a man with glasses and a blue shirt. The text "Daron Acemoglu" and "ECONOMIST • INSTITUTE PROFESSOR, MIT" is overlaid on the graphic.

**OUTLOOK:** Wary. AI could have tremendous benefit for workers and society—but only if government policy and business practices change.

**QUOTE:** The first key ingredient that we argue for technological advances translating into something resembling shared progress is that their direction should not be just automation, or sidelining humans... The future of the labor movement is open. We are convinced you need workers' voices. It is not good when AI regulation is discussed by senators and the CEOs of the chief tech companies and nobody else.\*

\* Acemoglu, Daron. Interviewed by Oshan Jarrow, Future Perfect, Vox Media, 10 Jul 2010, <https://www.vox.com/future-perfect/23787024/power-progress-book-ai-history-future-economy-daron-acemoglu-simon-johnson>. Accessed 19 Oct 2023.

 **THIRD WAY**

Acemoglu is a noted economist and author on technology, labor markets, and macroeconomics. He believes there's an opportunity for AI to build renewed prosperity for workers and greater productivity. But with that belief is a strong skepticism that AI will develop into those outcomes under current conditions. According to Acemoglu, "There is no denying [AI] could significantly increase productivity. But who stands to benefit?"

The key word he uses is *augmentation*. Our current government policies and business decision-making place a strong emphasis on automation rather than augmentation. Put another way, firms are too focused on implementing technologies that are "so-so" but reduce costs and increase profits for the firm.<sup>34</sup>

Instead, the United States must be proactive. That starts with developing incentives and policies that support AI augmentation to empower the workforce. Past technological advancements have often caused tremendous suffering for workers, but innovation has the potential to advance workers and society in general. "The bulk of the increase in inequality and decrease of labor share is intimately linked to digital technology," he notes, adding that "50% to 70% of the changes in the U.S. wage structure are intimately linked to automation, particularly digital automation."<sup>35</sup> This is all pre-AI.

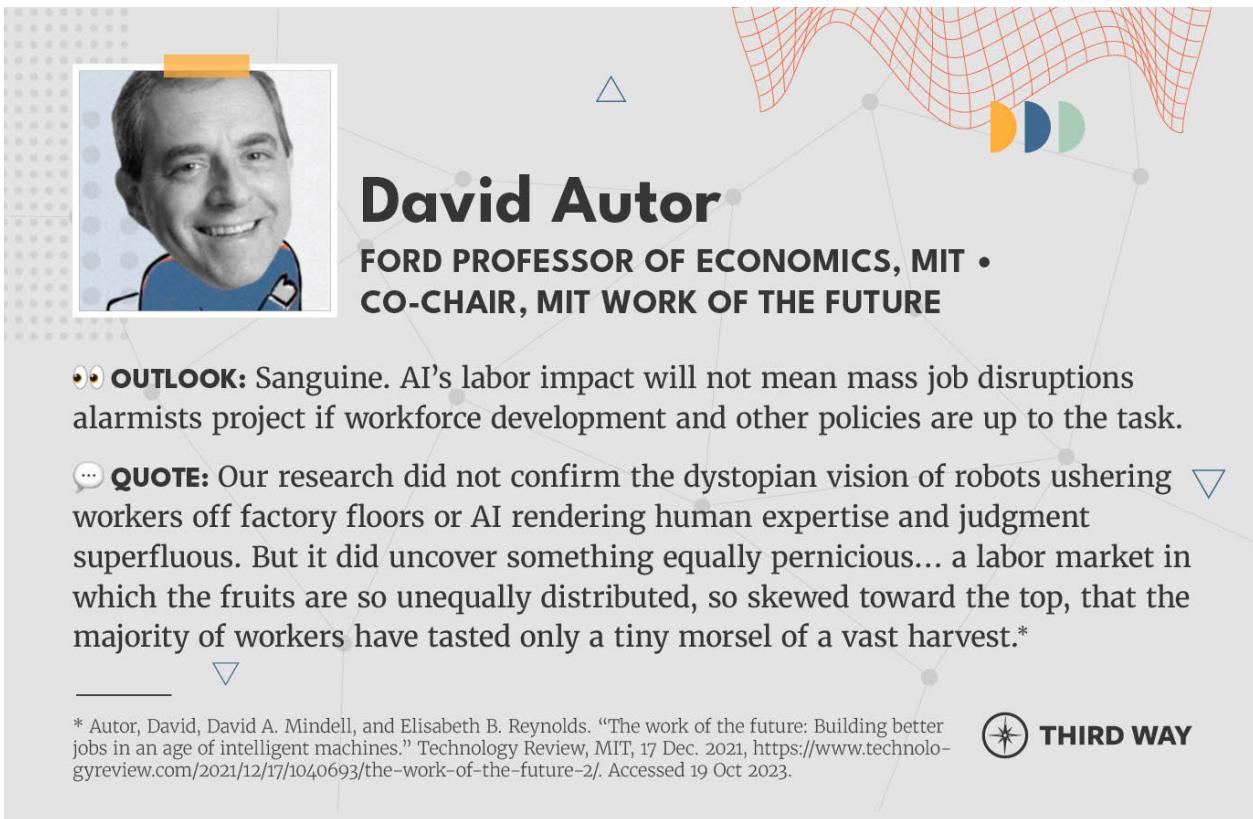
Acemoglu also calls for restructuring our tax system to encourage human investment over AI capital investment.<sup>36</sup>

Acemoglu uses the term “productivity bandwagon” to describe his worldview. If the United States can proactively develop conditions to empower workers around AI, then technologies can be developed and deployed to support workers and usher in new prosperity across the United States.<sup>37</sup>

Watch: [Conversation with Daron Acemoglu on AI, automation and skills](#)

## David Autor

### Ford Professor of Economics, MIT; Co-Chair, MIT Work of the Future



**David Autor**  
FORD PROFESSOR OF ECONOMICS, MIT •  
CO-CHAIR, MIT WORK OF THE FUTURE

**OUTLOOK:** Sanguine. AI's labor impact will not mean mass job disruptions alarmists project if workforce development and other policies are up to the task.

**QUOTE:** Our research did not confirm the dystopian vision of robots ushering workers off factory floors or AI rendering human expertise and judgment superfluous. But it did uncover something equally pernicious... a labor market in which the fruits are so unequally distributed, so skewed toward the top, that the majority of workers have tasted only a tiny morsel of a vast harvest.\*

\* Autor, David, David A. Mindell, and Elisabeth B. Reynolds. "The work of the future: Building better jobs in an age of intelligent machines." *Technology Review*, MIT, 17 Dec. 2021, <https://www.technologyreview.com/2021/12/17/1040693/the-work-of-the-future-2/>. Accessed 19 Oct 2023.

**THIRD WAY**

Autor is a renowned economist and public policy expert in labor economics and the impact of technological innovation on the economy. What he's not is an alarmist. Instead, Autor sees both sides of technology which affects his “yes, but” perspective. He's dubious that automation will have large displacement effects in jobs and manufacturing—but is sounding the alarm on what it will do to income and opportunity inequality. He sees the good AI will have on the United States economy and domestic labor markets—but warns that government policies aren't remotely up to task.

Notably, AI might be evolving quickly, but Autor doesn't think job market disruption will have the same pace. Instead, it will take decades to see widespread impact across businesses and government, and lagged effects won't hit workers for decades to come.<sup>38</sup> Autor feels that AI will continue to lag behind the human mind, ensuring that labor will continue to exist for workers.

But that doesn't mean government has time to sit on its hands. Our current policies surrounding economics, social safety nets, and workforce development are not designed to meet the changes AI will produce. The United States must be far more active in shaping a new set of regulations to make sure AI creates widespread social and economic benefit.<sup>39</sup> Autor's prescription: encouraging wage growth for workers, supporting new skills development tracks, and a more robust safety net would benefit workers and firms alike.<sup>40</sup>

Among those, workforce development is an outsized worry. Workers must be able to better meet the challenges of AI, and our education system needs to encourage workers to develop skills throughout their lives.<sup>41</sup> That means improving the pipeline of workers by increasing quality of community college and vocational schools. Safety nets such as unemployment insurance and reskilling programs must be improved so displaced workers can continue to upskill and participate in the labor force. And the United States must ensure worker prosperity and support programs grow in conjunction with national wealth.

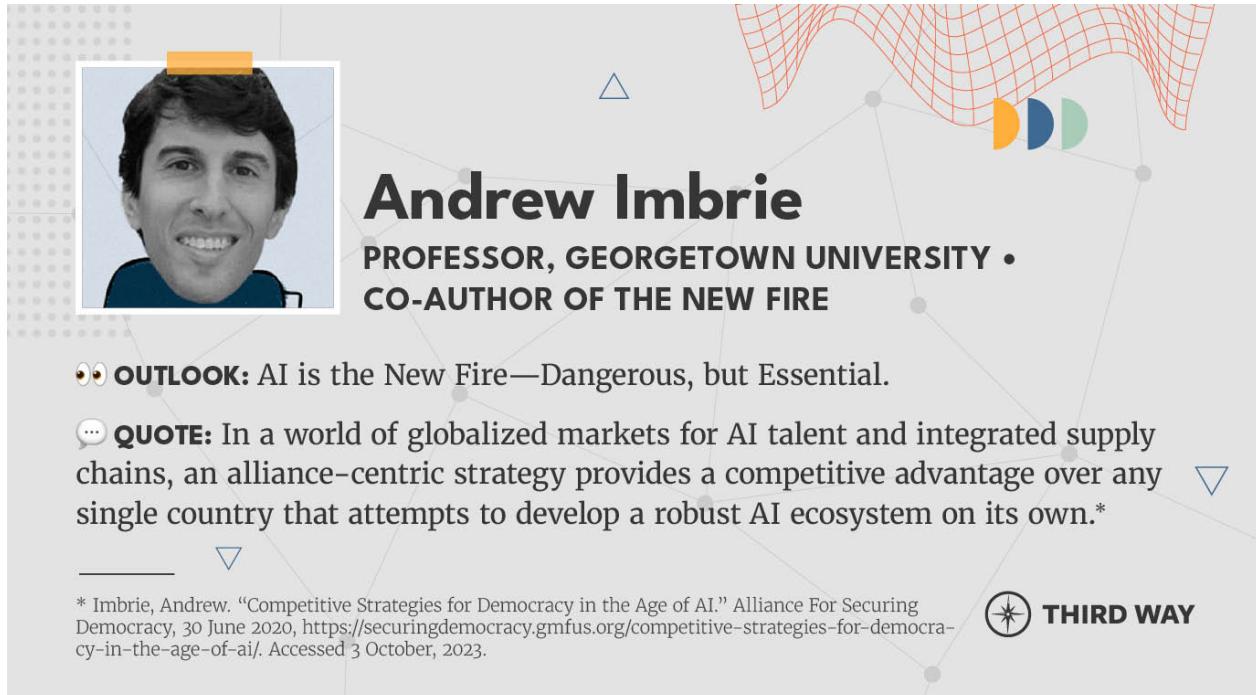
As Autor notes, "The labor market impacts of technologies like AI and robotics are taking years to unfold. But we have no time to spare in preparing for them. If those technologies are deployed in the labor institutions of today, which were designed for the last century, we will see effects similar to those manifested in recent decades: downward pressure on wages and benefits, and an increasingly bifurcated labor market."

Yes, AI will grow the economy, but broad and sustained policy choices are necessary to make that growth felt by everyone.

**Listen:** [How AI could help rebuild the middle class](#)

# Andrew Imbrie

**Professor, Georgetown University; co-author of The New Fire**



**Andrew Imbrie**  
PROFESSOR, GEORGETOWN UNIVERSITY •  
CO-AUTHOR OF THE NEW FIRE

**OUTLOOK:** AI is the New Fire—Dangerous, but Essential.

**QUOTE:** In a world of globalized markets for AI talent and integrated supply chains, an alliance-centric strategy provides a competitive advantage over any single country that attempts to develop a robust AI ecosystem on its own.\*

\* Imbrie, Andrew. "Competitive Strategies for Democracy in the Age of AI." Alliance For Securing Democracy, 30 June 2020, <https://securingdemocracy.gmfus.org/competitive-strategies-for-democracy-in-the-age-of-ai/>. Accessed 3 October, 2023.

**THIRD WAY**

Andrew Imbrie, the son of a US Foreign Service Officer, is a Georgetown professor who epitomizes the university's Jesuit ideal of fusing scholarship and public service. He's worked for the State Department, the UN Ambassador, the National Security Commission on Artificial Intelligence, and Georgetown's own Center for Security and Emerging Technology.

With fellow Georgetown professor Ben Buchanan, Imbrie co-authored a book elegantly arguing that AI is, as the title suggests, *The New Fire*. That metaphor is more enlightening than you may realize.

It was quite the breakthrough when our ancestors mastered fire, but from forest fires to firearms, it has turned out to be quite a dangerous technology. Shouldn't they have thought twice before throwing those sparks at dry tinder—maybe pause for six months to figure out the risks? Yes, fire keeps us from freezing and will eventually power our engines and propel us to the moon, but what if future tribes weaponize enough fire to engulf and destroy the planet?

It is hard to imagine modern life without fire—and it will be hard to imagine life in the future without AI. Fire is not good or bad so much as it is inevitable: someone would have mastered it eventually, and once it was put to good use, it quickly became a necessity. People who still conceptualize AI as a stoppable future technology probably neglect how dependent they already are on it (unless they still travel with windshield-sized paper maps).

But don't throw out your fire extinguisher just yet. Controlling AI requires controlling the three sparks that ignite it: data, algorithms, and computing power.<sup>42</sup> Manage them responsibly, and you, too, can prevent AI risk.

A practical approach to AI will be necessary, because ceding its development to our adversaries is unconscionable. In a 2020 paper, Imbrie highlights five areas the US has an edge on China in the AI race: hardware, data, talent, innovation, and rule-setting.<sup>43</sup> In a nutshell, he wants the US to cooperate with democratic allies on developing AI, standardizing the data it ingests, and shaping global standards around it—while shutting out China and other authoritarians.

There isn't much daylight between Imbrie's 2020 AI policy strategies and the Biden administration's strategic approach to AI in 2023—with good reason: his and Buchanan's views broadly reflect those of the national security community at large. Given the dramatic leaps AI has made in recent years, who can guess what the strongest AI in China will be capable of in a decade? Surrender is not an option: like our cave-dwelling forebearers, we must march carefully but intrepidly into our technological future.

Read more: [Competitive Strategies for Democracy in the Age of AI](#)

## Safiya Noble

**Professor of Gender & African American Studies, UCLA;  
author of Algorithms of Oppression**



**Safiya Noble**  
PROFESSOR OF GENDER & AFRICAN AMERICAN STUDIES, UCLA • AUTHOR OF ALGORITHMS OF OPPRESSION

**OUTLOOK:** Concerned. Big tech has admirable aspirations, but algorithms inherit human biases that can cause real and insidious harm to women and minorities.

**QUOTE:** [A]lgorithmic oppression is not just a glitch in the system but, rather, is fundamental to the operating system on the web. It has direct impact on users and on our lives beyond using internet applications.\*

\* Noble, Safiya. *Algorithms of Oppression: How Search Engines Reinforce Racism*. NYU Press, 2018. P. 47.

 **THIRD WAY**

Safiya Noble has been studying AI since well before ChatGPT. We must remember that AI has been ubiquitous in our digital and online worlds for over a decade and forms the foundation of platforms like Google search. When you search Google, its AI ranks the results based on what other users like you have searched for and clicked on.

In 2009, Noble's friend told her she should see what appears when she googles "Black girls," and the results shocked her.<sup>44</sup> That completely innocuous query served nothing but pornographic results. The results weren't reflective of Black girls at all: they reflected a racist way society perceives Black girls—or at least society as it pertains to the multitudes searching and clicking on the internet. It's unconscionable for search results to subject minorities to racist caricatures—it's stunning, outrageous, and harmful.

It's hard and never-ending work for tech giants like Google to spot and correct problems like this. Of course, no Google employee ever *chose* those results Noble saw; they were chosen by algorithms. The algorithms, the basic building blocks of computation and artificial intelligence, run autonomously with only high-level human oversight, but their human impacts can still be oppressive and dangerous.

Many technologists aspire for algorithms to eliminate human bias. Wouldn't it be much better for an algorithm to issue criminal sentences than a judge who might secretly harbor prejudice against their defendant's race, religion, or gender? This Platonic ideal of impartial algorithms is a valuable cause to strive for, Noble thinks, but it doesn't happen naturally.

Oppressive algorithms—the kind that showed Noble demeaning results for "Black girls"—are the result of a technology sector that does not represent all races, genders, and cultures proportionally. If you were skeptical about the importance of Diversity, Equity, Inclusion, and Justice programs in corporate HR departments, Noble might finally change your mind. It's simply undeniable that a lack of minority representation in tech reverberates far beyond the office break room.

Since bringing her own seat to the table, Noble has made some real changes—not just for Google search, but for women and Black people's struggle for equality. In 2016, when she searched "Black girls" on Google, the first result was the STEM education nonprofit Black Girls Code.<sup>45</sup>

Noble's insights are even *more* relevant in the ChatGPT era than they were in 2018, when she published *Algorithms of Oppression*. "I'm concerned about the way in which machine learning and predictive analytics are both overdetermining certain kinds of outcomes."<sup>46</sup> Noble believes it's never been more essential to fight for an equitable tech sector that hears women and minorities' voices than now, as AI proceeds to revolutionize society.

**Read more: [How AI could perpetuate racism, sexism, and other biases in society](#)**

# Michael Chui

## Partner, McKinsey Global Institute, Business and Economics Research Arm



**Michael Chui**  
PARTNER, MCKINSEY GLOBAL INSTITUTE •  
BUSINESS AND ECONOMICS RESEARCH ARM

**OUTLOOK:** Excited. AI will boost productivity in workers, increase consumer surplus, and give US CEOs new tools to compete in business.

**QUOTE:** We can create more alternatives using generative design. And if you can hold open more potential, then maybe you can end up with better products at the end of the day, create whole new categories, create new drugs, create systems that are more sustainable, and produce less carbon emissions. All the kinds of things we want to do with R&D, we can create a superpower by using these technologies. It can be great not only for companies but for humankind.\*

\* Chui, Michael, Kelsey Robinson, and Alex Singla. "Don't wait—create, with generative AI." Global Institute, McKinsey Consulting, 24 Aug 2023, <https://www.mckinsey.com/mgi/our-research/dont-wait-create-with-generative-ai>. Accessed 19 Oct 2023.

 **THIRD WAY**

Chui comes from a business perspective and is optimistic about AI domestically, globally, and for the general population. A co-author on the wide-sweeping McKinsey report on generative AI, Chui says AI's productive benefits will mean workers will find employment in the future.<sup>47</sup> Chui cautions, however, that workers in AI firms will need reskilling within the next three years or could be replaced.<sup>48</sup> Other non-generative AI that uses machine learning will also greatly impact the economy and benefit workers.

AI technology is currently dominated by firms already heavily invested in the technology. The question is: can other firms invest and compete in the AI domain? It's unclear to Chui if competition will only be limited to companies that already have AI or can expand beyond dominant players. Chui also argues that CEOs should actively consider how AI will allow their firms to support workers' needs better. AI presents an opportunity for firms to reinvent value creation for their firms and increase their overall productivity.<sup>49</sup> "When we look across all the different use cases in corporations and other organizations, we're talking \$2 trillion to \$4 trillion annually of potential value that can be unlocked by using [generative AI]."<sup>50</sup>

According to Chui, worker disruption will follow historical trends. “Between now and 2030 in the US about a third of the activities we’re paying people to do today potentially could be automated, not just using generative AI, but all kinds of technologies. It’s a fast pace but not that dissimilar to what we’ve seen historically.”<sup>51</sup> To be clear, those jobs won’t disappear—they will change. However, Chui predicts that this automation would create a high demand for AI-related skills and programming to support this growth. “Every knowledge worker has the potential to use these technologies to increase their productivity.”<sup>52</sup> We’re staring down a significant amount of jobs shifting. However, these changes will bring increased wealth and productivity. Administrative workers, sales workers, and some production workers will carry the bulk of occupational shifts in the coming 10 years. Professional workers will require about 2.3 million occupational shifts by the end of the decade.

Chui doesn’t delve deeply into the fate of non-college workers, but he is overall optimistic about the future of the economy. “If we’re going to have the next generation do better than our generation, we really need to increase productivity. That’s one of the potentials we have in front of us.”<sup>53</sup>

Read more: [Don’t wait—create, with generative AI](#)

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