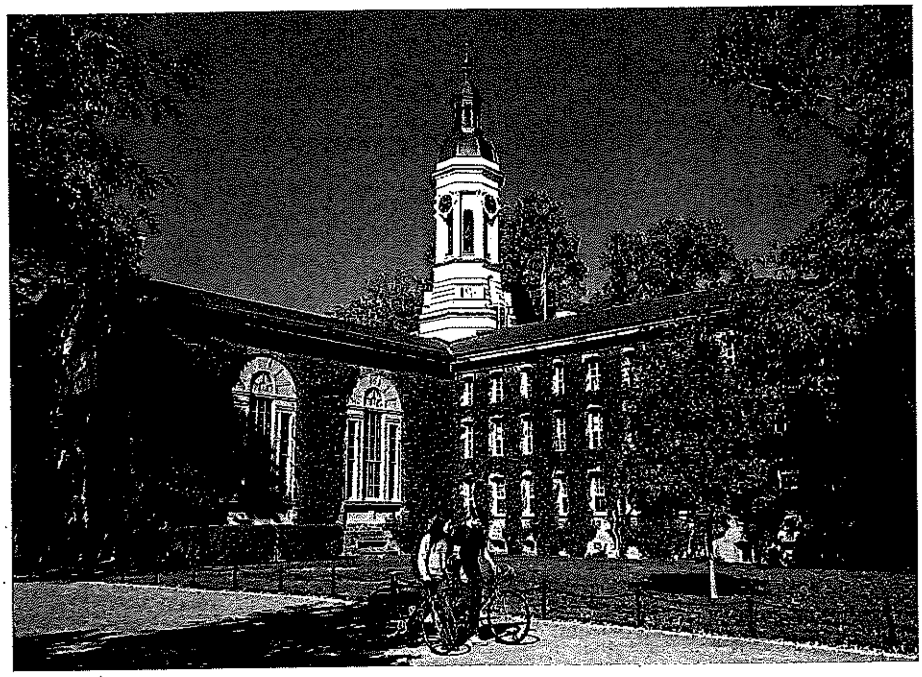


Nassau Hall at Princeton, which ranks ninth among U.S. colleges producing top leaders

EMPLOYMENT

The colleges and companies shaping America's leaders

BY JEREMY GANTZ

BUSINESS IS EVOLVING FASTER THAN EVER BEFORE, and companies are rethinking the path to the C-suite. Whereas in the past aspiring leaders might earn their stripes by rotating through another part of the business for a year or two, today more top firms are "constantly providing people with new opportunities," says Stephan Meier, a professor of business strategy at Columbia Business School. To supercharge the pace of skill-building, workers now have to change jobs more frequently. The ability to not only rapidly learn new terrain but also guide teams in overcoming new challenges is becoming an indispensable leadership skill, Meier says.

This is, in essence, what global consultancies like Accenture and Deloitte are designed to do. No surprise, then, that five of the top 10 best companies for future leaders in TIME and Statista's new ranking are consultancies. The study analyzed the résumés of 4,000 top U.S. leaders in business, government, academia, nonprofits, and other sectors to see where they previously worked and studied. Compared with last year's list, that's twice as many résumés drawn from a wider range of fields and leadership positions. With 175 organizations now included, the new ranking offers a wide-angle look at the places today's top leaders are most likely to have spent at least some of their professional lives.

The list of colleges most commonly attended by American leaders remains heavily tilted toward the Ivy League or similarly prestigious schools (such as Stanford, MIT, University of California, Berkeley, and University of Chicago), underscoring what University of Arkansas associate professor Jonathan Wai calls "a huge education divide in this country."

'They just teem with opportunities.'

—DARTMOUTH'S SCOTT ANTHONY, ON CONSULTING COMPANIES

On the list of companies, McKinsey & Co. remains at No. 1. (Alphabet CEO Sundar Pichai, Citigroup CEO Jane Fraser, and Transportation Secretary Pete Buttigieg all once worked at McKinsey.) At consulting companies, "every client creates the possibility for somebody to have a leadership opportunity," says Scott Anthony, a professor at Dartmouth College's Tuck School of Business, who worked at McKinsey early in his career. "They just teem with opportunities."

So do large blue-chip companies like consumer-goods powerhouses Procter & Gamble and PepsiCo, he says. The top companies for future leaders have three things in common: ample leadership opportunities for younger employees, feedback cultures that help budding leaders improve, and formal investments in leadership development. "That's the connective tissue," Anthony says.

But look below the top 20 slots on TIME's list and a more complex picture of where top U.S. leaders emerge from comes into view. For college, flagship public-university campuses from across the country, liberal-arts colleges, and historically black colleges and universities (HBCUs) are all represented. The University of Pittsburgh, Howard University, and the University of Hawaii system now rank in the top 50; the latter two institutions make their debut on the list this year. Among employers, The Smithsonian Institution, the World Bank Group, and NASA's Jet Propulsion Laboratory—all government-affiliated—also show up for the first time. So does the nonprofit American Cancer Society.

Strikingly, none of the country's Big 5 tech firms—Meta, Alphabet, Amazon, Apple, and Microsoft—are in the

TED SHAFFREY—AP

list's top 10. This probably relates to the relative youth of these companies, Anthony says. "People are still making careers in these companies," he says, vs. purposefully developing for a few years and then heading for the door. An exception is Microsoft, which is the oldest of the cohort, founded in 1975; it clocked in at No. 11, up from 21 last year. Meta, Alphabet, and Apple also rose, signs that more alums of these companies are now spreading their wings in leadership.

There are similarly early signs that recruiters are looking beyond the Ivies for potential leaders. "Recruiters are casting a wider net," says Gena Cox, an author and consultant who helps companies become more inclusive. But the shift is "not yet visible in top-level leadership in American companies," Cox says. That will take years.

Even as some organizations embrace more expansive recruiting approaches, demand for graduates of top-tier universities is not ebbing. Business schools at so-called Ivy Plus universities are still watching scores of freshly minted M.B.A.s head into the finance, tech, and consulting sectors—all top fields for producing high-profile leaders. "In any given year," says Abby Scott of UC Berkeley's Haas School of Business, "25% to 30% of our full-time M.B.A. graduates join management consulting firms" such as Deloitte, McKinsey, and PwC.

Boris Groysberg, a professor at Harvard Business School, says that once graduates are in the workforce, climbing the ladder is now all about acquiring new skills. In the past, a linear path up the org chart to a top leadership post was the norm. Today, zigzagging and lateral movement between organizations is valued by many hirers as new technologies depreciate the value of existing skills. "I've never seen so much focus on skills and skills development," Groysberg says. "Companies are basically saying, 'Where you worked 10 years ago doesn't tell me anything. What are the skills and capabilities you have now?'"

In other words: tomorrow's top leaders will be lifelong learners who take flight by embracing new challenges.

TOP 20 BEST COMPANIES FOR FUTURE LEADERS

RANK	NAME	LEADERSHIP SCORE	LOCATION
1	McKinsey & Co.	100	New York City
2	IBM	93.02	Armonk, N.Y.
3	Goldman Sachs	91.15	New York City
4	Accenture	90.69	New York City
5	Procter & Gamble	90.09	Cincinnati
6	PwC	89.55	New York City
7	PepsiCo	87.69	Purchase, N.Y.
8	Deloitte	87.50	New York City
9	Bank of America	87.47	Charlotte, N.C.
10	Ernst & Young	87.11	New York City
11	Microsoft	86.97	Redmond, Wash.
12	KPMG	86.85	New York City
13	Alphabet	86.62	Mountain View, Calif.
14	JPMorgan Chase	86.27	New York City
15	Johnson & Johnson	86.22	New Brunswick, N.J.
16	Hewlett Packard Enterprise	85.76	San Jose, Calif.
17	NASA	85.45	Washington, D.C.
18	ExxonMobil	85.20	Irving, Texas
19	Mass General Brigham	85.05	Somerville, Mass.
20	Citigroup	84.97	New York City

TOP 20 BEST COLLEGES FOR FUTURE LEADERS

RANK	NAME	LEADERSHIP SCORE	LOCATION
1	Harvard University	100	Cambridge, Mass.
2	Stanford University	89.80	Stanford, Calif.
3	Yale University	85.34	New Haven, Conn.
4	University of Pennsylvania	84.64	Philadelphia
5	Massachusetts Institute of Technology	84.55	Cambridge, Mass.
6	Columbia University	83.74	New York City
7	University of California, Berkeley	83.45	Berkeley, Calif.
8	New York University	82.03	New York City
9	Princeton University	81.95	Princeton, N.J.
10	Georgetown University	81.91	Washington, D.C.
11	Northwestern University	80.93	Evanston, Ill.
12	University of Michigan	80.85	Ann Arbor, Mich.
13	University of Chicago	79.82	Chicago
14	Cornell University	79.38	Ithaca, N.Y.
15	University of Virginia	79.01	Charlottesville, Va.
16	Dartmouth College	78.92	Hanover, N.H.
17	University of Southern California	78.57	Los Angeles
18	Brown University	78.54	Providence, R.I.
19	University of California, Los Angeles	78.42	Los Angeles
20	Duke University	78.28	Durham, N.C.

5 predictions for AI in 2025

New uses and policy questions come into focus

BY THARIN PILLAY AND HARRY BOOTH

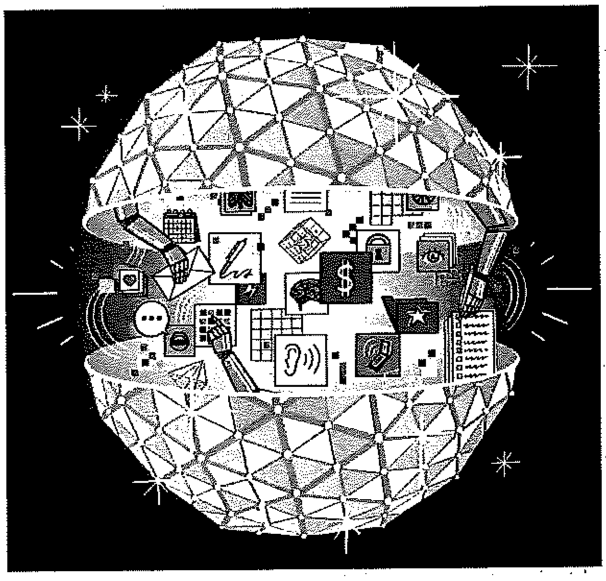
IF 2023 WAS THE YEAR OF AI FERVOR, following the late-2022 release of ChatGPT, 2024 was marked by a steady drumbeat of advances as systems got smarter, faster, and cheaper to run. AI also began to reason more deeply and interact via voice and video—trends that AI experts and leaders say will accelerate. Here's what to expect from AI in 2025.

1. MORE AND BETTER AI AGENTS

In 2025, we'll begin to see a shift from chatbots and image generators toward "agentic" systems that can act autonomously to complete tasks, rather than simply answer questions, says AI futurist Ray Kurzweil. In October, Anthropic gave its AI model Claude the ability to use computers—clicking, scrolling, and typing—but this may be just the start. Agents will be able to handle complex tasks like scheduling appointments and writing software, experts say. "These systems are going to get more and more sophisticated," says Ahmad Al-Dahle, Meta's VP of generative AI. Jaime Sevilla, director of AI forecasting nonprofit Epoch AI, envisions a future where AI agents function as virtual co-workers, but says that in 2025 AI agents will be mostly about their novelty. Melanie Mitchell, a professor at the Santa Fe Institute, warns that agents' mistakes could have "big consequences," particularly if they have access to personal or financial information.

2. A NATIONAL-SECURITY PRIORITY

Governments will increasingly view AI through the lens of national security, says Dan Hendrycks, director of the Center for AI Safety: "It's how many of the big decisions about AI will be made." The U.S. has curbed China's access to critical chips, while Meta and Anthropic have forged closer ties with U.S. intelligence agencies by allowing them to use their AI models. "Political developments around the world are pointing us in the direction of continued competition," says the U.N. Secretary-General's envoy on technology, Amandeep Singh Gill, emphasizing the need to preserve "pockets of collaboration" between the U.S. and China.



3. GOVERNANCE RACES TO CATCH UP

While developers compete to build ever smarter systems, governments around the world are racing to regulate them. The E.U. leads with its AI Act. Its Code of Practice, set to be finalized by April and enforced from August, is one of the first laws targeting frontier AI developers, and many of the E.U. requirements will likely have global impact on how companies operate, unless they opt to take distinct approaches in different markets, says Markus Anderljung at the Centre for the Governance of AI. In the U.S., where more than 100 bills have been brought to Congress, Anderljung predicts "very little will happen" federally this year, though states may act independently.

4. FACING THE INVESTMENT TEST

The year ahead "will be a year of reckoning," Rumman Chowdhury, CEO of Humane Intelligence, tells TIME in an email. "With billions invested, companies now have to show consumer value." In health care, that value seems clear—for example, additional AI diagnostic tools are expected to gain FDA approval, and AI may also prove useful in discovering and monitoring the long-term impact of various drugs. But elsewhere, the pressure to demonstrate returns may create problems. "Because of the pressure to make money back from all these investments, there might be some imposition of flawed models on the Global South," says Jai Vipra, an AI policy researcher, noting these markets face less scrutiny than Western ones. In India, she points to trends in automating already exploitative jobs like call-center work as a source of concern.

5. AI VIDEO GOES MAINSTREAM

In December, Google and OpenAI released impressive video models. OpenAI's Sora launch was plagued by access delay, while Google's Veo 2 was released to select users. Sevilla expects video-generation tools to become more widely accessible as developers find ways to make them cheaper to run. Meta's Al-Dahle predicts video will also become a key input for AI, envisioning a not-too-distant future in which systems analyze video from smart glasses to offer real-time assistance across various tasks, like fixing a bike. □

ILLUSTRATION BY TARA JACOBY FOR TIME

Bitcoiner Peter Todd, seen caving in Money Electric

TECHNOLOGY

A filmmaker's quest to unmask Bitcoin's creator

BY ANDREW R. CHOW

WHO IS BITCOIN'S FOUNDER, SATOSHI NAKAMOTO? THE question has perplexed and excited cryptocurrency fans ever since Bitcoin was created by someone with that username in 2009. Fans have endlessly theorized, debated, and hunted for clues across the web, while investigative journalists have tried to unwind the mystery with no success. The answer matters because Satoshi's ideas are imbued with near religious significance—and because whoever it is owns about $60 billion worth of Bitcoin, which would make them roughly the 25th richest person alive.

In October, the filmmaker Cullen Hoback released the documentary *Money Electric: The Bitcoin Mystery* on Max, a film that claims that Satoshi is Peter Todd, a 39-year-old Canadian Bitcoin developer, whose ideas and hot temper have earned him notoriety in the Bitcoin community.

In an email to TIME, Todd denied that he is Satoshi. And other early Bitcoiners expressed skepticism based on their knowledge of Todd's coding ability and temperament. But Hoback is confident he's come to the right conclusion. "People have a vision of who they want it to be: they want someone perfect, who matches their ideals," Hoback says. "But this is where the evidence lies."

In 2021, Hoback released a similar project: *Q: Into the Storm,* which set out (and claimed) to identify the person behind the QAnon conspiracy. After that show aired on HBO, executive producer Adam McKay *(The Big Short)* suggested Hoback try to find Satoshi next. Hoback spent several years traveling the world with Bitcoin luminaries, and soon narrowed in on Todd, based on small clues. Todd had been interested in creating digital cash from an early age. He was a self-taught coder whose level of programming seemed to match Satoshi's.

'They want someone perfect … but this is where the evidence lies.'

—CULLEN HOBACK, FILMMAKER

THEN, HOBACK FOUND what he considered a "smoking gun": a thread from a Bitcoin forum in 2010, two days before Satoshi stopped posting on the site and largely disappeared from public life. In the thread, Satoshi wrote a few paragraphs proposing a highly technical change to Bitcoin's code. A few hours later, Todd—who was, at this point, a nobody in the Bitcoin community—responded with a slight correction. When Hoback reread this post, he came to believe that Todd wasn't correcting Satoshi, but was Satoshi, and had mistakenly logged into his personal account.

When Hoback confronted Todd about his theory on camera, Todd called it "ludicrous," but also became visibly nervous. "His reaction is extremely telling," Hoback says.

In an email, Todd wrote that the quest to find Satoshi was not only "dumb," but "dangerous." He later told *Wired* he'd been forced into hiding because of "harassment by crazy people." The Bitcoin community as a whole is incentivized to keep Satoshi anonymous: In 2021, Coinbase included Satoshi's identification in a list of business risk factors. Many Bitcoiners have responded with anger to the HBO project's very existence, arguing that Satoshi's privacy should be respected and that he could be charged by governments with violating securities laws or threatening national security if identified.

Over Bitcoin's 15-year history, similar attempts to unmask Satoshi have been met with fierce backlash. "The fact that Bitcoin was kind of put out there and then Satoshi vanished is integral to its success," says Austin Campbell, the founder of a crypto consultant company.

Hoback hopes the documentary will spur deeper investigations. "This conclusion is unexpected and it's not who many people in the Bitcoin community want it to be," he says. "But maybe once they see the film and absorb the evidence, then they'll look into this as well." □

GOOD QUESTION

What is the mental toll of spending months in space?

BY JEFFREY KLUGER

THE LONGEST EIGHT DAYS BUTCH WILMORE AND SUNI Williams ever spent lasted more than nine months. On June 5, 2024, the two NASA astronauts boarded the maiden mission of Boeing's new Starliner spacecraft for what was supposed to be a short shakedown cruise to the International Space Station (ISS), before turning around and heading home after just over a week.

But that was not to be. Mechanical problems aboard Starliner led NASA to conclude that the spacecraft was not fit to carry the astronauts home. Instead the ship left the station and splashed down uncrewed, leaving Wilmore and Williams to join the station rotation, living and working aboard the ISS until a fresh SpaceX Crew Dragon spacecraft arrived and they could come home. They splashed down on March 18, a full 278 days after they were originally scheduled to depart the ISS.

So what kind of emotional adjustment did Williams and Wilmore have to make as they went from overnight guests to long-term ISS residents? And what will the reacclimation to life on Earth be like after so much time away from home and family—and for that matter gravity?

From left, Williams, Wilmore, and Nick Hague look at ease during their ISS stay

BEFORE WILMORE AND WILLIAMS make the adjustment of returning to Earth, of course, they had to prepare themselves for leaving it in the first place, and that was a process they were at least partly denied. Training for a long-duration space mission is equal parts physical and mental, and it's that mental piece—saying goodbye to all earthly people and things for half a year or more—that they missed out on, instead training for just an eight-day mission. That comes at a price.

In 2015, TIME visited Russia's Baikonur Cosmodrome in Kazakhstan to film the documentary series *A Year in Space,* about astronaut Scott Kelly's near 12-month stay aboard the ISS. Just two days before Kelly launched from Baikonur, TIME spoke to astronaut Jeffrey Williams, part of the backup crew, who would have flown in Kelly's place if he were unable for some reason to go. He confessed that if that day, 48 hours before liftoff, Kelly were suddenly scratched from the flight, it would be a challenge for him to get up to speed mentally, since there is simply no substitute for having fully and wholly prepared for the actual fact that he would be leaving Earth for a year.

Still, to all appearances at least, Wilmore and Williams quickly fit into the ISS life cycle—at least if NASA livestreams of the pair at work both inside the station and during spacewalks were any indication.

"Suni has just oozed such joy for the past eight months," says retired astronaut Marsha Ivins, a veteran of five space-shuttle missions and a friend of both Wilmore and Williams. "A large part of our training is to learn to deal with the unexpected, the off-nominal, the contingency scenarios."

Coming home will present different challenges. "The toughest thing about returning to Earth after many months in space is adapting to gravity," says retired astronaut Terri Virts, a veteran of two space flights, including one long-duration stay as ISS commander. "The grueling rehab program NASA put me through was key to my quick adaptation back to my planet. The first few days weren't fun, but I was religious about doing my daily workouts and I was back to driving and normal daily life more quickly than I expected."

The mental part is critical too. "It's important to get back in 'Earth mode' from a psychological perspective," says Virts. "For me, it was like a light switch: one day I was living in space, and as soon as I got back to Houston, I was just back to my normal life. It's really important to have goals and things to look forward to down here, as you may or may not get another chance to fly in space."

'Suni has just oozed such joy for the past eight months.'

—MARSHA IVINS, RETIRED ASTRONAUT

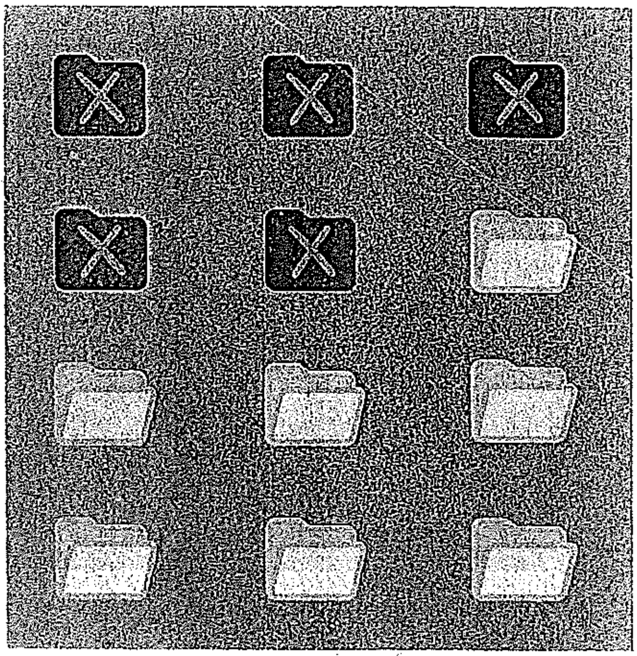
It's way too early to say if Wilmore or Williams will fly again or whether their extended stay aboard the ISS will be their last trip off Earth. If Wilmore and Williams indeed step away from space, they will do so having distinguished themselves in, as Ivins puts it, the most *off-nominal* of missions.

"Suni and Butch accepted the unexpected extension to their mission with such grace and humor," she says. "It makes me even more proud to call them my friends." □

TECHNOLOGY

Everyone on the web will die. What about their data?

BY CARL OHMAN



THE INTERNET IS AGING. AS SOON AS THE 2060S, THERE may be more dead than alive users on Facebook. Many of the platforms that are now part of society's basic infrastructure face a similar prospect. What happens when they—and their users—die will be a critical battleground for the internet's future. We have done virtually zero preparation for it.

Back in 1997, when John Perry Barlow published his now legendary "A Declaration of the Independence of Cyberspace," he boldly stated that the governments of the world—the "giants of flesh and steel," as he called them—had no dominion over cyberspace. The internet was a "new home of Mind" beyond the flesh, where its young and tech-savvy citizens would never age or decay. We still tend to see the internet that way. We also tend to think of it as something that has largely to do with youth. In short, we see cyberspace as a space without time.

All of that is far from the truth. We know that everyone using the internet will die, and that hundreds of millions, if not billions, will do so in the next three decades. We know this poses a serious threat to an economy based on targeted ads (the dead don't click on them). We also know that whoever seizes control over dead-user data will wield enormous power over our future access to the past. Just consider that one person—Elon Musk, no less—now owns the entirety of the tweets that constitute(d) the Arab Spring, #MeToo, and Black Lives Matter. When future historians seek to understand their past, it is the Musks and Mark Zuckerbergs of the world who will set the terms.

Experience (and sheer logic) tells us that the dominant tech platforms today will sooner or later fail and die. What will happen to the user data? Can it be auctioned to the highest bidder? Will it be used to train new algorithms to trace the users, or their descendants? A hypothetical failure of a DNA-testing firm that stores our most personal information is a chilling example. These questions show how the fate of digital remains is inextricably entangled with the privacy of the living.

WITH STAKES SO HIGH, it is important that we make some kind of plan. There is no technological fix. For it is a fundamentally political and even philosophical task. The questions we must ask ourselves include how we want to live with the past and its inhabitants (the dead), which principles should guide our stewardship of the digital past, how long (if at all) should our digital remains be accessible, and for what purpose?

Today, these questions are almost completely outsourced to the market. The answer to each of them is whatever Big Tech thinks is going to be lucrative. That is profoundly irresponsible. We must begin to think about the internet, and our stewardship over it, as a long-term intergenerational project. Just as globalization forced us all to become *cosmopolitans* (citizens of the universe) by breaking spatial boundaries, the aging of the internet compels us to become *archeopolitans*—citizens of an archive—by breaking temporal boundaries.

The archives have always belonged to the dead

Ever since Barlow's declaration, we have thought of cyberspace as something fundamentally new and independent of the past. But by thinking of ourselves, the first digital generation, as archeopolitans, it becomes clear that it is we, the living, who are the newcomers. For the archives have always belonged to the dead. What is new about the online world is just that the living have moved in with them.

Being a good archeopolitan is to recognize this, and to take the intergenerational stewardship of the web seriously. The first step is to make sure there is some basic framework to govern how the internet, including its platforms and users, can age and die with dignity and without threatening the privacy of their descendants. I call upon the governments of the world, these giants of flesh and steel, to begin this task—before it's too late.

Ohman, author of The Afterlife of Data, *teaches at Uppsala University in Sweden*

ILLUSTRATION BY TIME; GETTY IMAGES

TIME, AUGUST 26, 2024

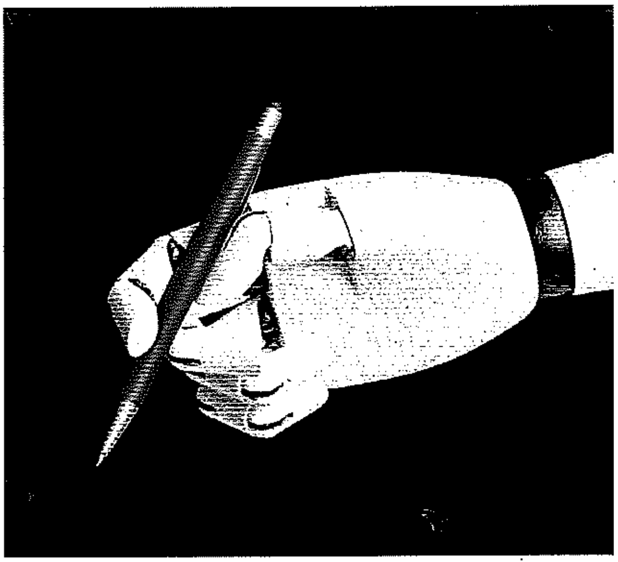
SOCIETY

I quit teaching because of ChatGPT

BY VICTORIA LIVINGSTONE

THIS FALL IS THE FIRST IN NEARLY 20 YEARS THAT I AM not returning to the classroom. For most of my career, I taught writing, literature, and language, primarily to university students. I quit, in large part, because of large language models (LLMs) like ChatGPT.

Virtually all experienced scholars know that writing, as historian Lynn Hunt has argued, is "not the transcription of thoughts already consciously present in [the writer's] mind." Rather, writing is a process closely tied to thinking. In graduate school, I spent months trying to fit pieces of my dissertation together in my mind and eventually found I could solve the puzzle only through writing. Writing is hard work. It is sometimes frightening. With the temptation of AI, many—possibly most—of my students were no longer inclined to face this challenge.



In my most recent job, I taught academic writing to doctoral students at a technical college. My graduate students, many of whom were computer scientists, understood the mechanisms of generative AI better than I do. They recognized LLMs as unreliable research tools that hallucinate and invent citations. They acknowledged the environmental impact and ethical problems of the technology. They knew that models are trained on existing data and therefore cannot produce novel research. However, that knowledge did not stop them from relying heavily on generative AI. Several students admitted to drafting their research in note form and asking ChatGPT to write their articles.

As an experienced teacher, I'm familiar with pedagogical best practices. I researched ways to incorporate generative AI in my lesson plans and designed activities to draw attention to its limitations. I reminded students that ChatGPT may alter the meaning of a text when prompted to revise, that it can yield biased and inaccurate information, that it does not generate stylistically strong writing, and that it does not result in A-level work. It did not matter. The students still used it.

I found myself spending more time giving feedback to AI than to my students

GENERATIVE AI IS, in some ways, a democratizing tool. Many of my students were nonnative speakers of English. Their writing frequently contained grammatical errors. Generative AI is effective at correcting grammar. However, the technology often changes vocabulary even when the only prompt is "fix the grammar." My students lacked the skills to identify and correct subtle shifts in meaning. I couldn't convince them of the need for stylistic consistency or the need to develop voices as research writers.

The problem was not recognizing AI-generated or -revised text. At the start of every semester, I had students write in class. With that baseline sample as a point of comparison, it was easy for me to distinguish between their writing and text generated by ChatGPT. But AI-assisted writing is easy to identify and hard to prove. As a result, I found myself spending many hours grading writing that I knew was generated by AI. I noted where arguments were unsound. I pointed to stylistic quirks that I knew to be common to ChatGPT. (I noticed a sudden surge of phrases like *delves into.*) That is, I found myself spending more time giving feedback to AI than to my students. So I quit.

The best educators will adapt to AI. In some ways, the changes will be positive. Teachers will move away from mechanical activities and find ways to encourage students to think critically and learn that writing is a way of generating ideas, revealing contradictions, and clarifying methodologies.

But students must learn to sit with the temporary discomfort of not knowing and move forward with faith in their own cognitive abilities as they write and revise their way into clarity. With few exceptions, my students were not willing to enter those uncomfortable spaces or remain there long enough to discover the revelatory power of writing.

Livingstone is the managing editor of MLN, *a journal of literary scholarship published by Johns Hopkins University Press*

CLIMATE

The companies innovating the climate fight

BY JARED LINDZON

AI, MEALWORMS, AEROSPACE, CARBON CAPTURE: THEY'RE all innovative approaches companies are taking to try to stop the effects of climate change. A new analysis of the world's top greentech companies demonstrates the diversity of organizations fighting climate change, and the positive reactions they've received from investors and customers.

The analysis by TIME, in partnership with data firm Statista, considered the positive impact, financial strength, and innovation of more than 8,000 companies developing products, services, or technologies to reverse the impact of human activities on the planet. The 250 top companies hail from over 30 countries on six continents; American firms accounted for 11 of the top 20.

Switzerland's Climeworks ranks second, behind Vermont-based battery-powered-aircraft maker Beta Technologies. Climeworks has deployed its carbon-capture technology at unprecedented scale; its new Mammoth facility in Hellisheidi, Iceland, captures 36,000 tons annually at peak capacity, and sells carbon credits to 160 customers, including JPMorgan Chase, Microsoft, Stripe, Shopify, and Lego.

"To limit global warming to 1.5°C, we need both rapid emissions reductions and carbon removal," co-CEO Jan Wurzbacher told TIME in 2024. "Carbon removal went from a niche 'could be' topic when Climeworks was founded in 2009 to a globally recognized solution required to achieve net zero," added co-CEO Christoph Gebald.

Other niche approaches are breaking through in a crowded space. Top 10 honoree Innovafeed is trying to solve the world's biggest challenges with some of its smallest inhabitants. The French biotechnology company, which has raised over $450 million to date, breeds insects in an automated vertical farm to harvest protein for plant and animal feed, reducing the need for more resource-intensive feeds and toxic fertilizers.

And of course, AI has found a place in greentech. Raquel Urtasun, CEO of Toronto-based Waabi, ranked ninth, creates AI driving systems with partners like Volvo Autonomous Solutions to automate the long-haul-trucking industry, making it more efficient and sustainable along the way.

The analysis illustrates the breadth of business leaders of the young greentech industry, sprung from a global effort to better sustain the planet.

BETA
Beta has logged the most piloted flight hours of any electric-aircraft company

IMPOSSIBLE
The plant-based-meat company has partnerships with Burger King and Disney

FERVO ENERGY
Fervo's geothermal energy powers Google data centers and more in Nevada

TIME

WORLD'S TOP GREENTECH COMPANIES OF 2025

RANK	COMPANY NAME	HEADQUARTERS	INDUSTRY	SCORE
1	Beta	U.S.	Mobility	99.8
2	Climeworks	Switzerland	Carbon Capture & Offset Solutions	99.3
3	Apeel	U.S.	Circular Economy	99.2
4	Sunfire	Germany	Resources	99.0
5	Planted Foods AG	Switzerland	FoodTech	98.7
6	Meati	U.S.	FoodTech	98.4
7	Carbon Clean	U.K.	Carbon Capture & Offset Solutions	98.4
8	Innovafeed	France	AgTech	98.4
9	Waabi	Canada	Mobility	98.1
10	Mosa Meat	The Netherlands	FoodTech	98.1
11	IGS	U.K.	AgTech	97.8
12	TAE Technologies	U.S.	Energy Storage & Distribution	97.7
13	Impossible Foods	U.S.	FoodTech	97.6
14	Fervo Energy	U.S.	Renewable Energy	97.5
15	Ormat Technologies	U.S.	Renewable Energy	97.4
16	ChargePoint	U.S.	Energy Storage & Distribution	97.3
17	Geno	U.S.	Circular Economy	97.3
18	EnerVenue	U.S.	Energy Storage & Distribution	97.3
19	Avantium	The Netherlands	Circular Economy	97.2
20	24M	U.S.	Energy Storage & Distribution	97.2

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John Legend The 13-time Grammy winner on revisiting his debut album 20 years later, his roots in the Black church, and being sung to in airports

***Get Lifted* blends gospel, R&B, and hip-hop. How did you land on that sound?** We knew that neo soul had had its time. I wanted it to hit harder, sound bigger, have melodies that were less smooth and more sharp—more of an edge. A lot of neo soul at the time sounded more like ad-libs and open mics, like a poetry session and people were scatting their way through the song. I looked at *The Miseducation of Lauryn Hill* as a big inspiration that mixed soul, hip-hop, reggae, and gospel.

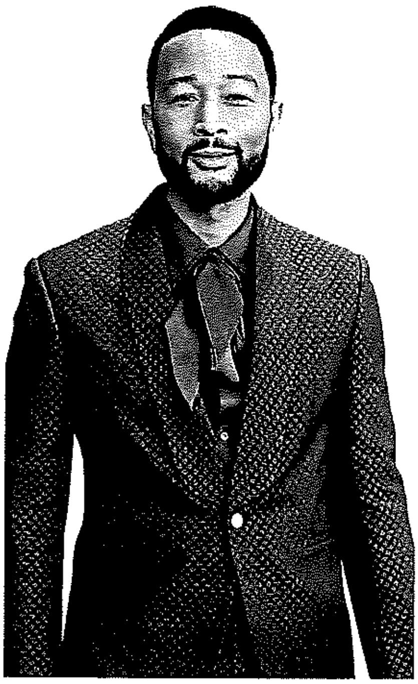
The album hits me differently now as an adult in my 40s going through a lot of transition and loss. It was just where we were as we were writing it, and some of it wasn't about my own experience. With "Ordinary People," it was my experience with my parents, who had gotten divorced when I was young. Then they got back together right after I graduated college, around 2000. They got remarried then divorced again as *Get Lifted* was about to come out.

It seems like the album was about the ups and downs of a personal relationship. What led to that? Some of it was my parents, some was my own life. I wasn't in a serious relationship, but I had experience with infidelity and some of the things I wrote about. But whenever I write a song, it's always some mix of autobiography and allowing the creative process to take me where it takes me. I never feel bound by complete truth, but I want everything to feel true.

Was there pushback against your using gospel to talk about infidelity? I think the Black church is quite used to having R&B singers that blend gospel into secular music. I went to a Pentecostal church, and so many of our best R&B artists came from church. A lot of the leadership would be like, "We don't want you out there making secular music, singing for the world." But by that point I was far from home. I felt a sense of independence from my roots, where I could be myself.

The title of the album says a lot: *Get Lifted.* What does that reference?

I have a natural sense of optimism. It's just the way my brain works. So part of it was having that sense of spirituality and connection to gospel music. And I had already written the songs, "Let's Get Lifted" and "So High." So it just felt like it was on theme.



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How would you say you've evolved over the years? I just keep listening to my own muse and following what I was excited about. I made a children's album last year. I was like, I want to work with Sufjan Stevens. I didn't know if he was going to be like, "Why am I making a John Legend album?" But he was down, and we made this special, beautiful thing. It was like, "If I'm going to do it, I'm going to make it interesting and artful and beautiful and whimsical."

When "Ordinary People" came out, it felt unconventional because it was just your voice and piano, whereas everything on the radio had big drums, big everything. Everybody would tell me the song made them stop in their tracks because it was such a departure. I always thought that it wasn't my job to sound like everybody else, but to find a way to just be myself.

At what point did you know you had a thing with that record when it came out? I always say one thing is the airport test: When you're going through the airport, do people recognize you? And then, are they singing a song to you? And people were singing, "We're just ordinary people, we're just ordinary people!" everywhere I went. And then I always say, when I really knew I had made it was on the day I got a call in '05 from Magic Johnson and Oprah Winfrey. They both called me on the same day separately for different reasons, but each of them wanted me to sing in an event that they were throwing at their house. —MARCUS J. MOORE