

GREAT DECISIONS

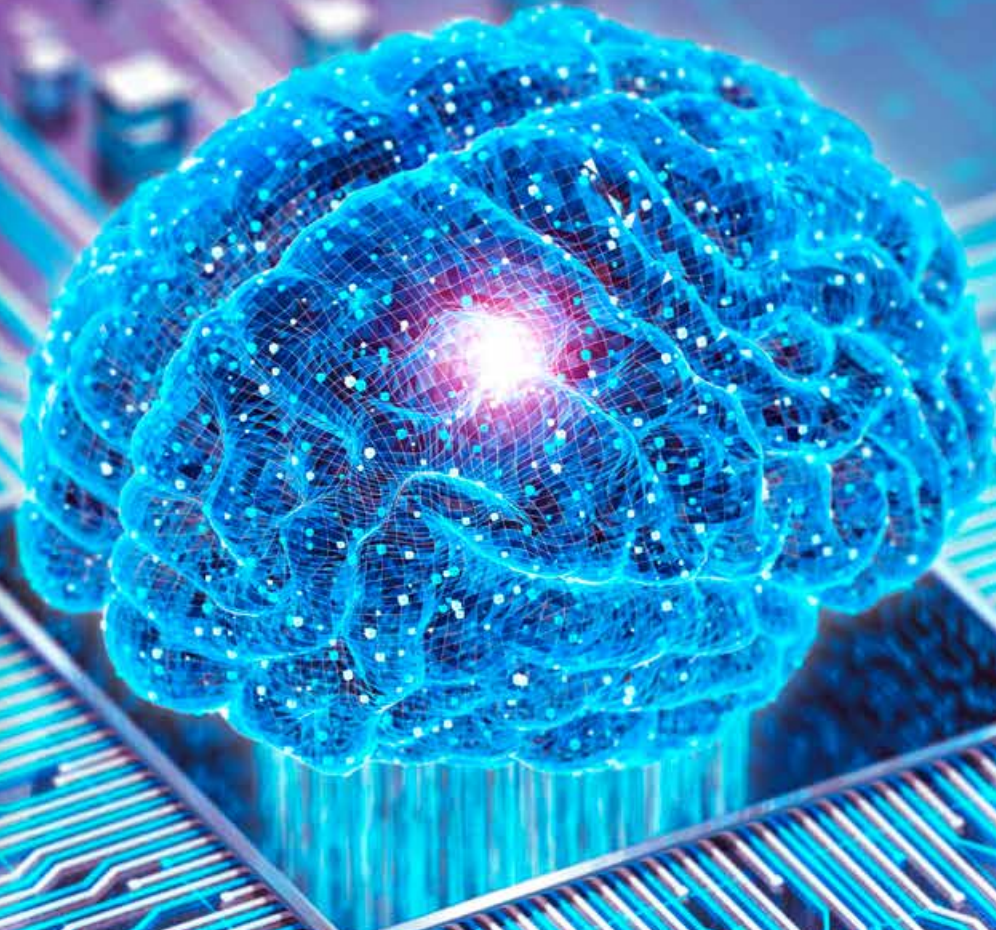
1918 • FOREIGN POLICY ASSOCIATION

HIGH SCHOOL

FEBRUARY 2024

TEACHERS:
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THE BACK PAGE

GENERATIVE AI



**NEW WAYS
TO CREATE**

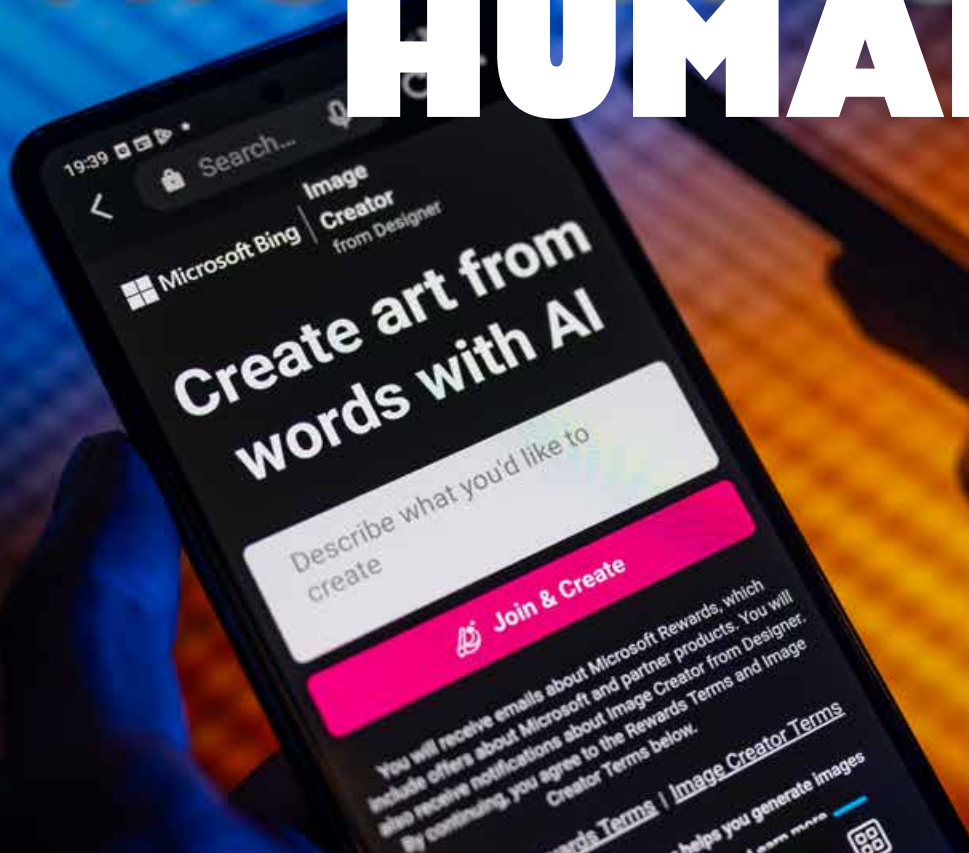
**HOW AI
LEARNS**

**SHOULD
SCHOOLS
BAN AI?**

**THE FUTURE
OF AI**

BY SANDY ONG

MACHINE OR HUMAN?



Jonathan Raa/NurPhoto/Getty Images

Generative AI apps make it extremely easy to create everything from images to songs, videos, or writing.

These days, [artificial intelligence](#) (AI) is so seemingly run-of-the-mill and entrenched in our daily lives that we don't bat an eyelid when we encounter it in our phones, cars, web browsers, and even our [washing machines](#). Most of these **algorithms** make predictions, speculating what sneakers we'd like or which spin cycle would work best for our dirty clothes. But of late, a new kid on the block has emerged—one that is getting people to sit up and take notice: **generative AI**.

Unlike other types of artificial intelligence, generative AI can create new and potentially unique content in the form of text,

images, music, art, animation, 3D models, and other types of [data](#). Users key in **prompts**—sentences, queries, instructions describing their desired outcome—and the model churns out new material in a matter of mere seconds. The possibilities are seemingly endless. Dall-E 2, Midjourney, and other image-generation tools offer up hyper-realistic landscape paintings, and portraits; while Amper, MuseNet, and other AI audio applications generate new music tracks, voiceovers, and sound effects.

But what's really captured popular imagination are text generation tools like OpenAI's **ChatGPT**, Microsoft's Copilot,

Google's Bard, and Anthropic's Claude—chatbots that are capable of holding humanlike conversations, writing code, and composing poetry and essays, among other things. ChatGPT is so popular that it amassed 100 million users just two months after launching in November 2022.

Despite its relative infancy, generative AI is already changing the way we live, work, learn, and play. Its use has generated excitement, but also concern. Sam Altman, OpenAI's chief executive, hailed AI as “the greatest technology humanity has yet developed” with the potential to drastically improve our lives. But he simultaneously warned that it can “cause

significant harm to the world” if left to develop without any guardrails.

PINPOINTING PATTERNS

At its core, generative AI relies on mathematical systems that “learn” rules by analyzing vast amounts of data. Such **neural networks** mimic the way neurons in the brain signal to one another, searching for patterns within existing datasets.

The technique was explored as early as the 1940s. But it was only in the past decade, when computing power advanced and massive datasets called **big data** became widely available, that neural networks became capable of **deep learning** and generating new content.

A key turning point came about when researchers figured out how to run neural networks in parallel with graphic processing units—computer chips that render graphics in video games—thus allowing for AI models to generate more realistic-looking and -sounding content.

In 2018, another breakthrough occurred when Google, OpenAI, and other firms began building **Large Language Models (LLMs)**, neural networks that could learn from large amounts of digital text, “understand” language, and generate text of their own.

A HELPFUL AID

Today, generative AI is teeming with possibilities. It helps families plan vacations, workers draft emails, computer scientists to code, artists come up with initial sketches, and much more.

Students stand to benefit



Patrick Semansky/AP Images

OpenAI CEO Sam Altman speaks before the Senate at a hearing dealing with AI and privacy in 2023. Altman is one of the leading figures in the generative AI movement.

from generative AI too. When you’re feeling stuck on an assignment, text-to-text generators like ChatGPT and Copilot can help you brainstorm for ideas, kick-start your research, and steer you towards relevant sources. They’re also capable of summarizing material you amass on a topic and creating an outline for you to use. When prompted, the tools will

even help proofread, revise, and edit your drafts. And if you need to supplement your article with images, infographics, or other visual elements, generative AI can assist as well.

Writing aside, such content generators are also useful learning aids. Ask the model to “explain, in an easy-to-understand way, why quantum theory and Einstein’s

THE DEBATE

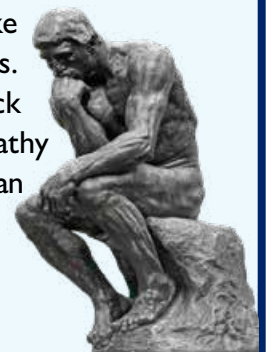
SHOULD WE MAKE AI THAT CAN THINK AND ACT LIKE HUMANS?

YES

- ✓ It makes our lives more convenient and allows us to be more productive.
- ✓ AI-powered models can help solve some of humanity’s most difficult problems, like finding cures for diseases.
- ✓ AI-generated content can be a great learning and teaching tool.

NO

- ✗ If we lose control, AI might one day outsmart humans.
- ✗ AI might take people’s jobs.
- ✗ Machines lack human empathy and the human touch.



Popova Valeriya/Shutterstock



Robert Leber/AP/Getty Images

AI expert Paul Scharre demonstrates how AI technology could be used to create a fake video of former president Barack Obama delivering a speech using words that were actually spoken by actor Jordan Peele.

theory of general relativity are mathematically incompatible” and you might receive some enlightenment. Because such platforms are structured as chatbots, learning in this manner can feel very interactive.

Such help is especially useful outside school hours, when it might be difficult to get in touch with your teachers for help on homework assignments. It’s also handy for students who live in remote areas where access to traditional classroom-based education is limited.

Generative AI tools can also act as a personal tutor. Similar to how Amazon uses **machine learning** to analyze your past purchases and offers customized recommendations for your next buy, ChatGPT and other apps can look at what you’ve previously learned, your past test results, and so on to

generate study plans specifically tailored to your needs.

The new technology is starting to make waves in the classroom, too. Some educators now use it to generate novel activities, quizzes, engaging simulations, interactive models, and other teaching aids. You may even find your test scores coming back to you quicker, with generative AI tools offering a way to automatically grade assignments and provide feedback.

USER BEWARE

Like any technology, generative AI is a double-edged sword. Our enthusiasm for it, therefore, must be tempered with caution. Geoffrey Hinton, nicknamed “the godfather of AI” for his pioneering work on neural networks, warned that future versions of AI may give rise to **autonomous weapons** or killer robots, when AIs learn unexpected

behavior or how to generate and run their own code.

The latter ability “could be used for offensive cyber-attacks,” says OpenAI’s Altman. Part of this involves using generative AI to spread **disinformation**, for instance in the form of deepfakes, fake news reports, and manipulated videos. For example, there was recently a widely circulated video of a major US politician drunkenly stumbling over her words. The video was completely fake—generated by AI.

The creation of **inaccurate information** isn’t always intentional. When LLMs have insufficient or biased training data, they sometimes spew false or nonsensical, but entirely plausible-sounding, outputs—a phenomenon called **AI hallucination**. One of the most famous examples of this occurred in February 2023, when Google’s chatbot Bard wrongly stated that it was the James Webb Space Telescope, a device that captured the very first pictures of a planet outside our solar system.

As AI-generated content becomes increasingly convincing, we have to exert greater caution when using such tools. Other concerns around generative AI use center on copyright infringements. Because of the way the tools create content by learning from existing material, they can promote a new kind of plagiarism that ignores the rights of original artists. This has already landed some companies in hot water—AI art generator StableDiffusion, for instance, is currently being sued by Getty Images for copying more than twelve million images from

its database without permission or compensation.

Such plagiarism fears have led some schools—including those in New York City, Los Angeles, and Seattle; as well as a handful of universities in the UK, India, and France—to ban ChatGPT. Seattle Public Schools explained its decision by stating that it “does not allow cheating and requires original thought and work from students.” Other schools echo these sentiments; they believe that ChatGPT is more of a tool for cheating than for learning.

BIGGER AND BETTER

Still, generative AI marches forth at a lightning-fast pace. Tools like Bard and Copilot are now multimodal in nature, which means they are able to understand and generate data across several data formats. They can, for instance, explain why a meme is so funny or produce a song based on a picture of a musical instrument.

Future models promise even greater capabilities. OpenAI is rumored to be developing a new algorithm called Q*, which will be able to perform school-grade math—something today’s tools still struggle with. Meanwhile, Google says its next-generation model, Gemini, will not only generate images and text, but also excel at planning, strategizing, and problem-solving. At a press conference last December, Gemini demonstrated it could understand and solve mathematical equations scribbled on paper, keep track of a ball shuffled under three cups, and other feats.

THE DEBATE

SHOULD SCHOOLS BAN CHATGPT?

YES

- ✓ Students may be tempted to cheat and plagiarize material.
- ✓ It might hinder the development of critical thinking and problem-solving skills.
- ✓ Generated content might be inaccurate and misleading.



NO

- ✗ Generative AI will be a part of our future, and students should learn how to use it wisely.
- ✗ It’s useful as a learning aid and personal tutor.
- ✗ Teachers can use AI for more mundane tasks such as grading, freeing up their time to focus on teaching.

LEARNING TO LIVE WITH AI

As we inch closer to an AI-powered future, many experts believe we’re now at a crucial point to shape and nudge AI’s development into one that will be overall beneficial to society at large. Already, tech companies are introducing guardrails to the outputs their programs generate. Copilot, for instance, helpfully provides hyperlinked footnotes listing the

sources it uses.

On a broader scale, governments are [beginning to get involved](#). In July 2023, the Biden administration strongly encouraged seven leading software companies, including Microsoft, Meta, and Google, to voluntarily allow external security experts to inspect their new AI products before their release. The UK government took a similar tack with British-based firms in November.



A visitor views AI-generated images of cats in a 2024 art exhibition examining the effect that cute things have on people.



88 Air Base Wing Public Affairs

Some people fear that AI-powered drones could be a major danger to society.

Additionally, there is now legislation governing the development and use of AI. In June 2023, the European Union (EU) passed the world's first comprehensive AI law. Among other things, the EU AI Act requires tech firms to

disclose how content is generated and to regularly submit lists of their data sources, which will allow artists, authors, and other content creators to determine if their work has been plagiarized.

Although it may take a while

for more countries to follow suit, the act paves a way forward for us to safely live in a world that's becoming increasingly populated with AI.

WHAT YOU CAN DO

Generative AI has the potential to both help and harm people. Because it's here to stay, we have to learn how to use AI in such a way that it will enhance our everyday lives. Here are some steps you can take in that direction:

- **Compose** your own essays. While it's okay to use generative AI tools to help you with the brainstorming and editing process, it's important that your work contains your own voice and your own thoughts.
- **Respect** copyrighted material. Don't copy AI-generated essays, pictures, and other content wholesale without first checking sources and copyright licenses.
- **Fact-check** to fight disinformation. Always verify AI-generated content with online searches of your own and cross-check information against authoritative sources.
- **Stay informed** Knowledge is power. Keeping abreast of the latest developments in the field will help guide your usage of generative AI.
- **Write or call** elected officials to let them know what you think about AI should be governed.
- **Vote** when you are old enough. In most cases, you can't vote until you're 18, but in many state you can register at 16 or 17, and you'll be all set when 18 rolls around.

THE DEBATE

SHOULD GOVERNMENTS REGULATE AI DEVELOPMENT?

YES

- ✓ Profit-driven tech companies should not be allowed to self-regulate as they may not have the public's interest at heart.
- ✓ AI can potentially fuel global-level threats and thus should be subject to strict testing.
- ✓ If AI is to operate autonomously, the world needs to agree on what basic human values it should have.

NO

- ✗ Regulations hold back innovation and progress.
- ✗ AI operates across borders, and countries might find it hard to agree on an international law.
- ✗ AI's threat is overrated—machines are still no match for how responsive, adaptive, and energy-efficient the human brain is.

TRAILBLAZERS



Courtesy Christine Zhao

The iEmote Team

When teens Christine Zhao, Ria Sudhir, Sabrina Soh, and Talinn Hatti first learned about alexithymia, a condition in which someone finds it difficult to understand and express emotions, they were moved to help those affected. In 2022, the teens created [iEmote](#), an app that facilitates social-emotional learning for people with alexithymia and other emotion-processing disorder like autism.

iEmote contains three core features: an adaptive game to train users' ability to recognize emotions from facial expressions, a journal that suggests possible emotion labels to users' entries, and a short story collection to prompt users to identify characters' emotions in context. These functions are powered by AI: Zhao and her fellow co-founders use ChatGPT to curate the guiding questions that accompany the stories. "I know it's not perfect, but it is significantly less time-consuming than doing

it manually," Zhao says. "It frees up time and energy from the 'heavy-lifting' work, and allows us to exercise more creativity and imagination."

Anupam Chettimada

During the pandemic lockdown, Anupam Chettimada realized how isolation and loneliness were problematic for many people. That sparked the idea for [TalkHAPPi](#), a virtual therapist that anyone could access from the comfort of their home. The free app offers users counseling services, as well as a means to improve their verbal positivity skills through a game-like approach that provides a score and personalized feedback.

Generative AI is an integral part to how TalkHAPPi works, says seventeen-year-old Chettimada, who co-founded the app with three friends in April 2021. It "allows us to offer this service autonomously and quickly, helping us bring a novel approach to mental health care," he says.



Courtesy Anupam Chettimada

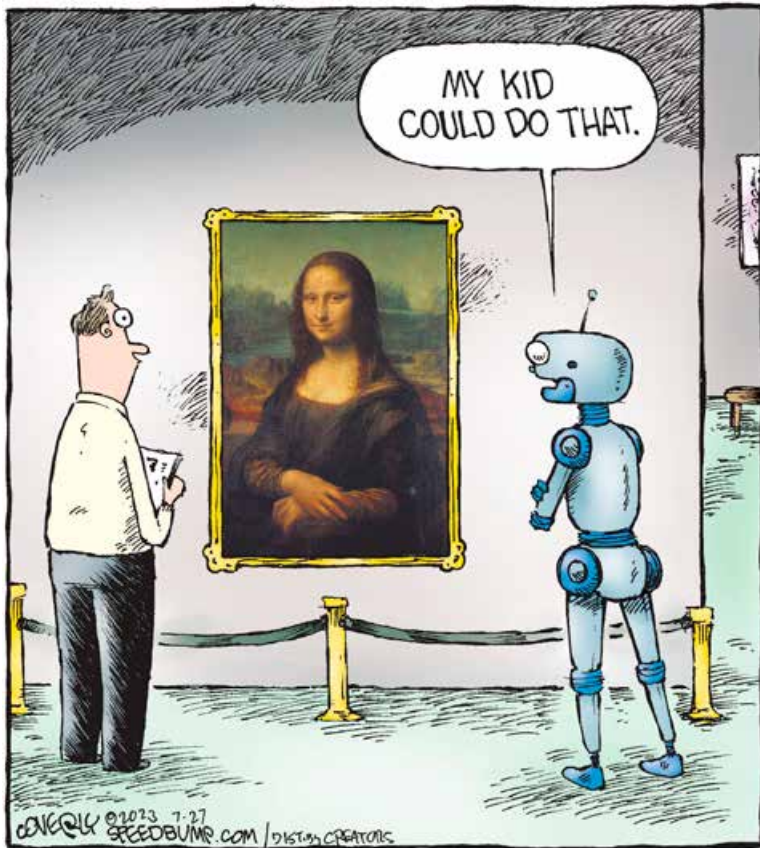


Courtesy Sejal Verma

Sejal Verma

Eighteen-year-old Sejal Verma and her friend Shreya Rathi co-founded [Maytik](#) in 2021 to promote inclusivity in the beauty industry. Described as "a tech-integrated makeup startup," Maytik uses haptic feedback, such as vibrations, to allow blind and low-vision users "to independently differentiate and apply eyeshadow." The pair designed a special electronic eyeshadow palette, which resembles a keyboard. When users press a shade on the palette, its name is announced via a speaker; and as the color of the shade intensifies down the palette, so do the intensity of the vibrations.

Verma, now a freshman at Purdue University, says ChatGPT has changed the way she runs her business. She uses generative AI to create content, generate captions for social media posts, draft pitches, and detect errors in computer code. "ChatGPT can help businesses improve customer service by providing instant, personalized responses to customer queries and can also assist with sales by providing product recommendations," Verma says.



EVERYONE'S A CRITIC

1. What do you think this cartoon is trying to say about AI? Why do you agree or disagree?
2. Why could or couldn't an image created by AI measure up to a famous work of art such as the *Mona Lisa*?
3. What do you think makes a work of art great? What sets one painting apart from another, in your opinion?

NOW IT'S YOUR TURN TO MAKE GREAT DECISIONS

1. What do you think are the biggest pros and cons of generative AI technology?
2. How do you think the government should or shouldn't address the rising use of generative AI?
3. **YOUR STORY:** How are you using generative AI in your life? What, if any, are the ways you find it most helpful?

KEY WORDS & TERMS

AI hallucination
algorithms
autonomous weapons
big data

ChatGPT
deep learning
disinformation
generative AI

Large Language Models
machine learning
neural networks
prompts



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Korea

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