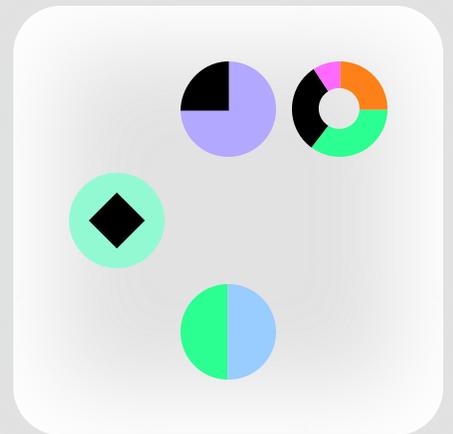
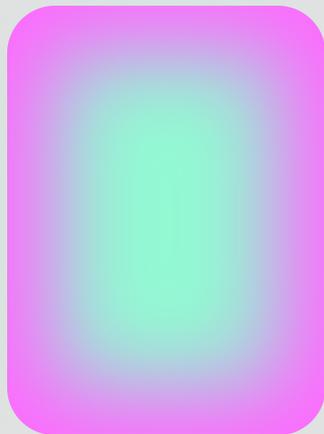
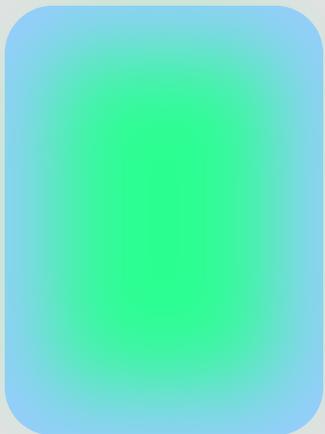


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ARTIFICIAL INTELLIGENCE: 2023's Most Celebrated Influencer



AI MOMENTS SHAPING OUR LIVES

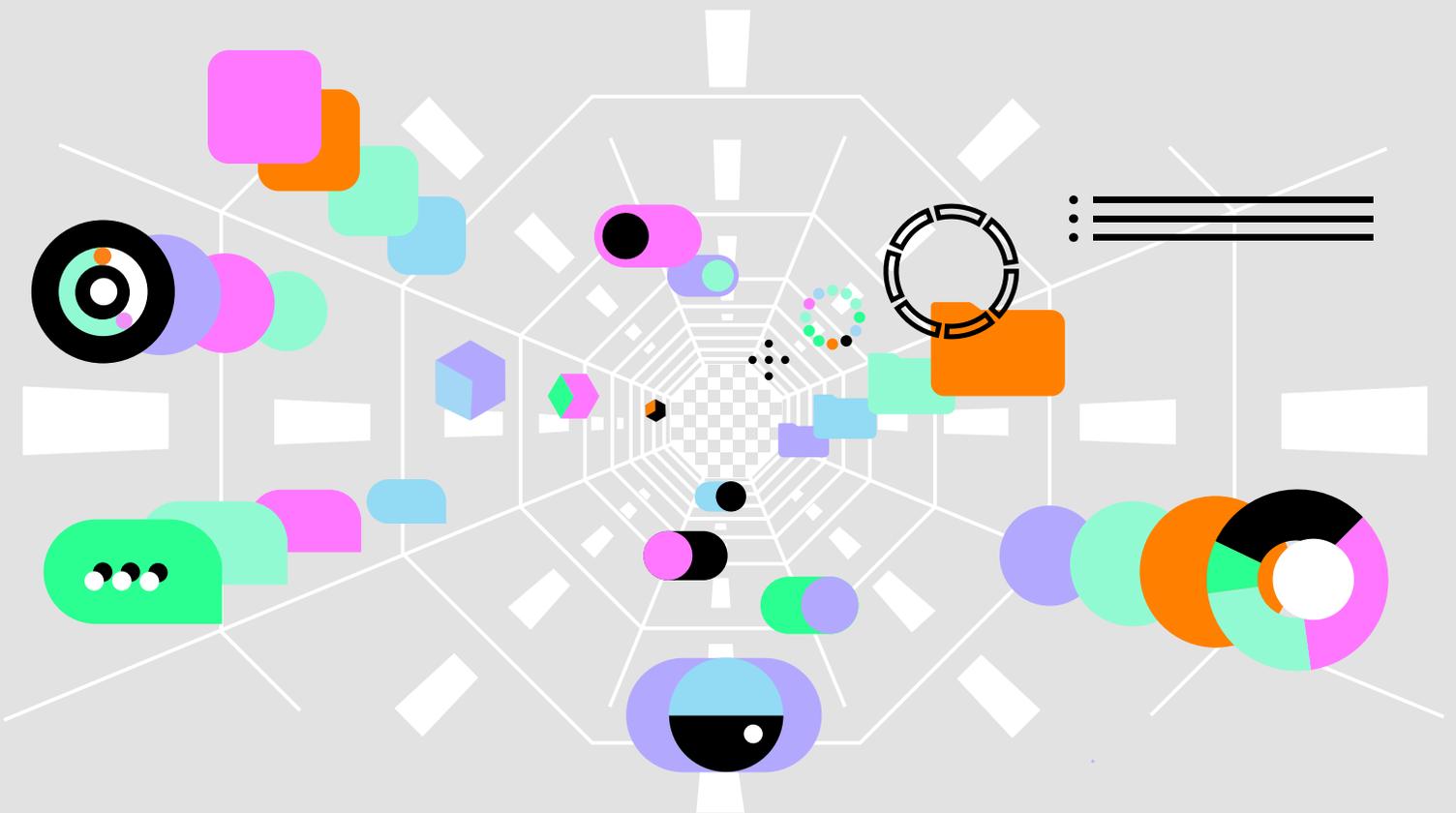
As we all reflect on the past year and the moments that had the biggest impact on our lives and culture, we at Mozilla can't help but call out Artificial Intelligence (AI) and the way it has permeated our society this year.

And while Time magazine may have named Taylor Swift its “person of the year” (for reasons we know all too well), we think that AI was the real topic that was top of mind for everyone in 2023 — honestly, whomst amongst us didn't post ethereal AI portraits to our feeds? In the past year, searches for “artificial intelligence” increased 900 percent, and OpenAI's ChatGPT may have been the biggest needle mover. Since its launch late last year, ChatGPT has reached a wider audience beyond business and tech because — let's face it — who couldn't use a Cyrano in their pocket? From cover letters and professional emails, to romantic poetry (with varying success), this year AI became relevant to the general population. It spread through workplaces, generated debate in the halls of government and is set to become one of the most transformational technologies of our lifetime.

AI has vast potential for good — enabling breakthroughs in healthcare and other fields — but it also poses serious concerns. The race to release AI technology without adequate guardrails ensuring safety and transparency is surfacing problems. It’s captured the imagination of the public, but is getting a mixed reception; a recent [Monmouth University poll](#) reveals that 46% of respondents believe AI will do equal amounts of harm and good, BUT only 9% of respondents in the U.S. believe it will do more good than harm.

At Mozilla, we've found [practical ways to build AI into products](#) that add value to our lives, and are working with others to push AI development toward more transparency and accountability. We look forward to AI evolving in ways that enable a safe, more trustworthy and inclusive digital experience for everyone.

With that, we wanted to celebrate 2023 as the year that AI went mainstream and became a household conversation.



YOU & ME + ChatGPT

Following its launch in November 2022, ChatGPT became seen as arguably the fastest-growing consumer internet app of all time (eat your heart out, Candy Crush), notching an estimated 100 million monthly users in just two months and boosting artificial intelligence, a \$207 billion industry.



FUN FACT: It took Facebook 4.5 years to hit 100 million users after its launch in 2004; Twitter took more than 5 years, and Instagram took just over 2 years.

Since the launch of ChatGPT, we've seen Big Tech get into the act with releases of Google Bard (powered by the recently-announced Gemini), Microsoft's Copilot, Meta's Llama 2 and Amazon Q, fueling a heated AI tech race.



But! ChatGPT's unprecedented adoption rate within the tech industry and early adopters has come with its controversies, as we've seen in not-always-glowing headlines ...

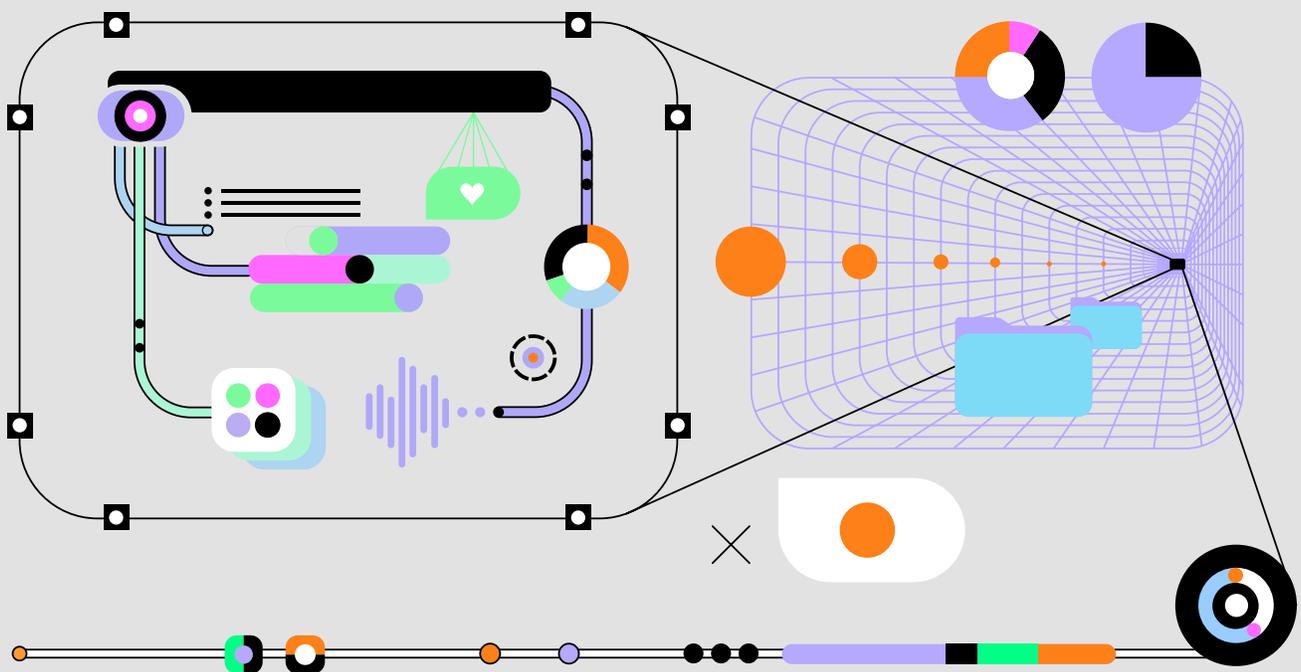
Here are some of the more noteworthy challenges it has prompted:

- Concerns that generative AI can enable disinformation, deep fakes, harassment, discrimination and other harms at scale prompted some U.S. companies to sign a voluntary list of AI safety assurances.
- Big name authors have sued OpenAI, claiming that OpenAI infringes on the copyright of their works because the ChatGPT model was trained on the authors' works.
- Bing, powered by ChatGPT, told a New York Times reporter that, among other things, it would like to be human, and that it harbored destructive desires and was in love with him.
- In a conversation with a reporter at The Associated Press, the new chatbot complained of past news coverage of its mistakes, adamantly denied those errors and threatened to expose the reporter for spreading alleged falsehoods about Bing's abilities.

Not to mention plenty of snarky hot takes on social media!

AI GOES MAINSTREAM

When AI is used for entertainment, anything the mind can dream up can be made into reality. Its impact stands to be positive, as it eliminates rote work, speeds project timelines and allows productions to pursue previously impossible creative paths prohibited by constraints on cost, time and even physical reality.





But, as we saw in 2023, its use could reduce the need for certain processes and as many workers to achieve the same level of output. The potential for generative AI to undercut, replace or simulate artists, screenwriters and actors, was one of the key pain points of the Screen Actors Guild (SAG-AFTRA) and Writers Guild of America (WGA) strikes. With their livelihoods already threatened, the ongoing deliberations between studios/publishers and the unions brought nearly everyone in the Hollywood industry to a halt, postponing the development of our beloved TV shows and movie releases (we certainly can't wait until our favorite teacher sitcom gets back on the air!)

In 2023, AI tools have been used to:

- create the opening credits for Disney+'s Marvel series, Secret Invasion;
- produce hits like those inspired by "Drake" and "The Weeknd," prompting Universal Music Group to issue a public statement that using generative AI infringes its copyrights, which ultimately got the song removed from streaming services;
- manipulate an image of Pope Francis to show him wearing a puffer jacket. The Pope was none-too-pleased and urged scientists to consider the human impact of the technology.



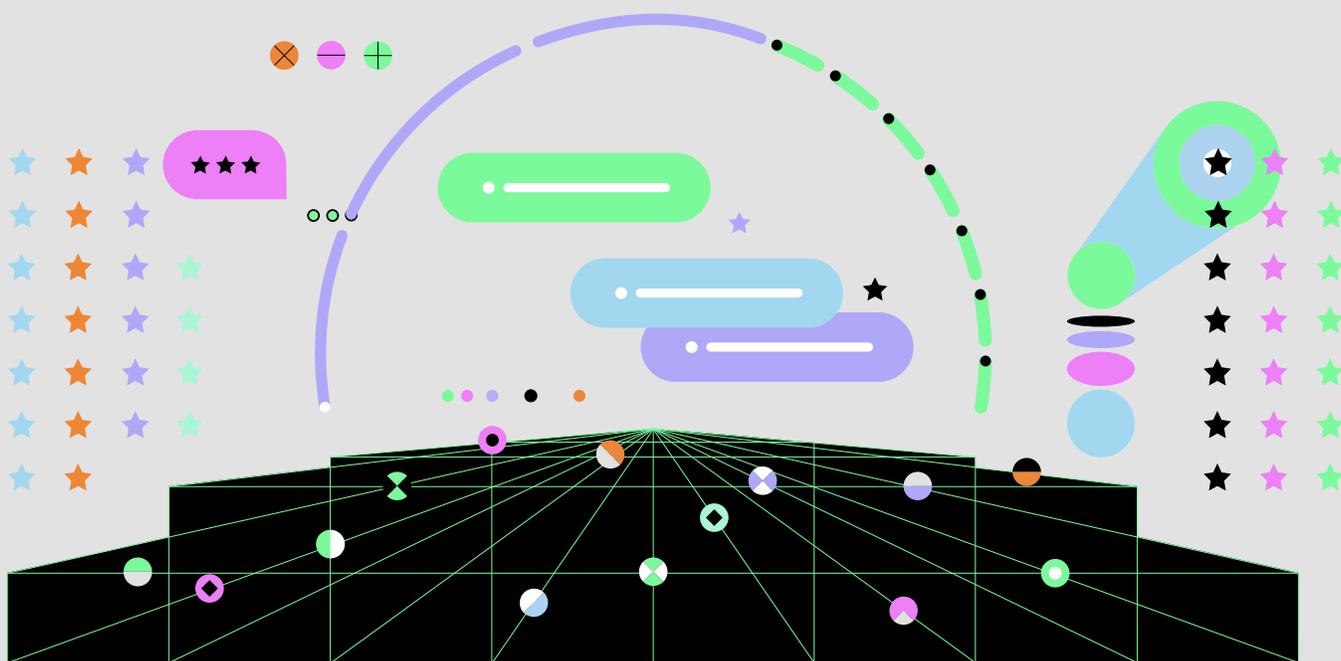
From Hollywood to hip hop, artists are negotiating new boundaries of consent for the use of AI in creative industries. In this season's final episode of [Mozilla's award winning IRL podcast](#), Bridget Todd speaks to a member of the AI working group of the Writers' Guild of America, a singer who licenses use of her voice to others and an emcee and professor of Black music.

When it comes to pop culture, creative mashups have long been an internet meme staple, but AI takes it to the next level.

- The long-running popular animated series “South Park” dove head first into the AI debate, making its way to the fictional Colorado town. The episode reportedly used [ChatGPT as a co-writer](#) and Play.ht's AI-powered text-to-voice generator was used for the voice of ChatGPT's character itself.
- A fan-created “Harry Potter by Balenciaga” [showed](#) characters in a typical Balenciaga fashion runway, with every step of the creation using artificial intelligence, demonstrating a newfound ability of AI to create filmlike moments.
- Horror movie *M3GAN*, [with the sentient robot doll](#) at its center, quickly grew to become an iconic addition to the meme genre.
- Earlier this year, AI had a tech-rockstar moment when open source startup Hugging Face hosted an IRL event in San Francisco, which was dubbed the “Woodstock AI.”

These AI-fueled moments provide a glimpse of a digital future in which each of us lives in our very own entertainment bubble. Using AI, we can create our own customized videos and songs and art in SECONDS — dream come true or dystopian nightmare?

GOVERNMENTS RESPOND TO THE AI BOOM





While the EU is set to adopt a recently released comprehensive regulation for artificial intelligence, the AI Act, that will likely influence how generative AI products develop in the coming years, in October 2023, President Biden and his administration announced a Safe, Secure, and Trustworthy Artificial Intelligence Executive Order. This will direct the most sweeping actions ever taken to protect Americans from the potential risks of AI systems and calls on Congress to pass bipartisan data privacy legislation to protect all Americans. Without safeguards, AI can put Americans' privacy further at risk.

The Administration has also shown a clear understanding of the risks of bias and discrimination in AI systems – actual, ongoing harm that Mozilla has been concerned with for years.



Mark Surman, President of Mozilla Foundation, said in response:

"Mozilla welcomes today's move by the Biden Administration to ensure AI development comes with regulatory guardrails that will help ensure a more positive and broadly beneficial development of this critical new technology. Mozilla strongly supports the commitment to promote a fair, open and competitive AI ecosystem that will help ensure AI advancement is not concentrated in the hands of a small number of companies.

Taking steps to codify AI ecosystems through the use of open source and open science is the best means to ensure the benefits of these new technologies reach the majority of humanity, rather than seeing them applied only to use cases where profit is the primary motivator. In addition, the focus on protecting privacy and strengthening privacy-preserving research and technologies is a welcome advancement."



In November, Mozilla helped put together a [letter](#) signed by thousands of co-signers – academia, technology, government and concerned citizens – urging world governments to protect open source AI. We also joined the [Senate’s AI Insight Forum on Privacy and Liability](#) and held [two impactful events](#) in Washington, D.C. following, showcasing our commitment to advancing the discourse around AI policy.

Together with U.S. [Vice President Harris](#) and nine other foundations, [Mozilla Foundation announced an initiative](#) to invest \$200 million in the trustworthy AI ecosystem.

Additionally, at least 25 U.S. states, Puerto Rico and the District of Columbia introduced artificial intelligence bills, and 15 states and Puerto Rico adopted resolutions or enacted legislation this year. Examples include:

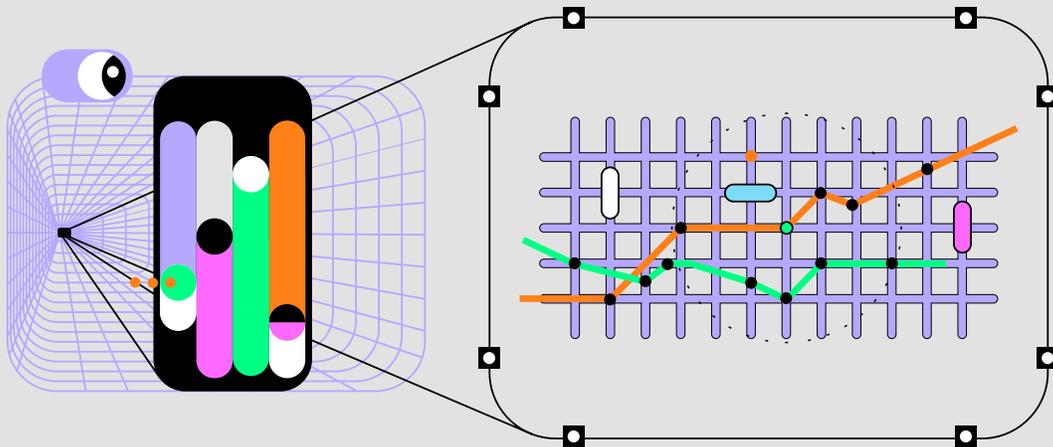


- Beginning Feb. 1, 2024, **Connecticut** will be performing ongoing assessments of systems that employ AI and are in use by state agencies to ensure that no such system results in unlawful discrimination or disparate impact.
- **Louisiana** adopted a resolution requesting the Joint Committee on Technology and Cybersecurity to study the impact of artificial intelligence in operations, procurement and policy.
- **Maryland** established the Industry 4.0 Technology Grant Program to assist certain small and medium-sized manufacturing enterprises with implementing new “industry 4.0” technology (industry 4.0 includes AI).
- **North Dakota** enacted legislation defining a person as an individual, organization, government, political subdivision, or government agency or instrumentality, and specifying that the term does not include environmental elements, artificial intelligence, an animal or an inanimate object.
- **Texas** created an AI advisory council to study and monitor artificial intelligence systems developed, employed or procured by state agencies, with North Dakota, Puerto Rico and West Virginia also creating similar councils.



TRANSFORMING BUSINESS WITH AI

AI's transformative impact on business is undeniable, with companies exploring its potential across diverse sectors. From marketing and healthcare, to education and fashion, generative AI is seen as a catalyst for growth.





Let's break down the good and the bad of AI tools that have gotten wide attention in 2023:

The Potential

General Motors' Super Cruise feature monitors the system status and detects head and eye positioning, reminding you to pay attention to the road and steer manually.

The Context

In the automotive industry, AI has been used to improve safety and monitor individuals while they are in their cars.

The Downside

Mozilla's *Privacy Not Included guide exposed cars as the worst of all tested products when it comes to privacy and security, with 84% of them selling or sharing your data to data broker companies.

The Potential

In September 2023, Swiss researchers announced that they used AI as part of a medical treatment plan to help a paralyzed man walk for the first time in 12 years.

The Context

AI algorithms can analyze large volumes of medical data, including patient records, lab results and medical images, to assist healthcare professionals in making accurate and timely diagnosis.

The Downside

AI systems can rely heavily on sensitive patient data gathered by dubious means of seeking consent, raising concerns over privacy, as well as bias in diagnostic systems.

The Potential

AI-powered educational tools can analyze data on student performance, and automate processes like grading quizzes, giving teachers time and data to help their students.

The Context

In education, AI presents opportunities for personalized learning and task automation.

The Downside

A-grade or AI-grade? Automated grading scandals have led to numerous student uprisings over lack of fairness and transparency. How about more teachers, not more data surveillance?



The Potential

AI can be used to fight fakesters and scammers on online shopping platforms, allowing reviews by real humans to bring real value to people.

The Context

If dressing is an important form of self-expression, then in the case of the Pope's puffer jacket, an AI-generated outfit might not only diminish the power and messaging inherent in clothes — but a person's autonomy.

The Downside

Levi's is testing AI-generated fashion models later this year in a bid to diversify their online catalog. However, critics say AI technology that generates “fake non-white people” is taking away opportunities for real models of color.

The Potential

Eva AI, an AI girlfriend app, enables you to create a digital partner, while Blush helps users practice their communication skills and flirting.

The Context

AI-powered chatbots can increase accessibility, be a source of entertainment, comfort or fun.

The Downside

While the 2013 movie, *Her*, features the main character falling in love with an AI assistant, some experts warn that the technology only mimics what real human interaction is like.

The Potential

AI can design more energy-efficient buildings, monitor deforestation and optimize renewable energy deployment. IBM teamed up with NASA to combat climate change via geospatial AI.

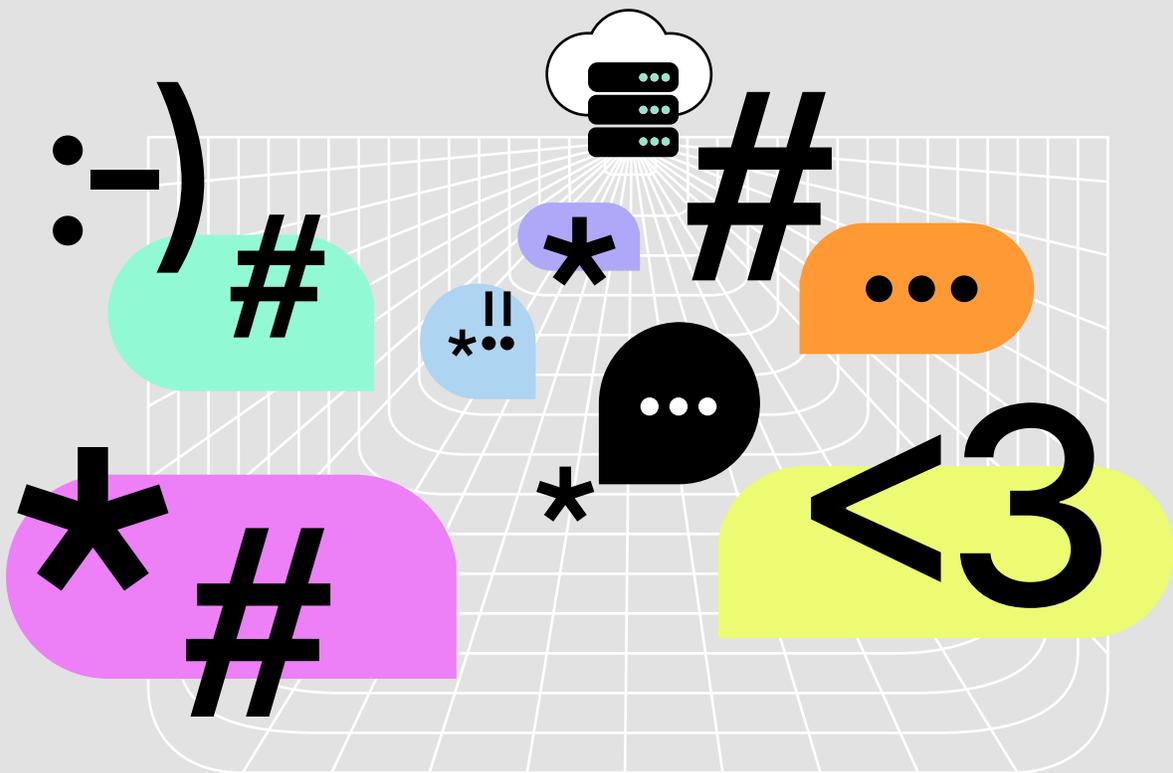
The Context

Recent discussions around the prolific use of AI have shined a light on its environmental impact.

The Downside

AI requires powerful servers and data centers, which increase energy consumption and grow our carbon footprint.

LOOKING AHEAD TO 2024





As we look ahead to 2024, Mozilla's community weighs in on what they think will become of AI next year:

“The biggest dramatic change I predict is when Multimodal LLMs (the ones that can see, hear and speak) capabilities will move to the mainstream users and not just for early adopters. This will be true not only for digital work, but analog products like RayBan Meta AR glasses driving voice input adoption further. Only after mastering the issue of optimizing power consumption and launching useful features that were not very feasible before.”

“Authentic social graphs will become the primary source for live LLM-driven answers as the synthetic web will increasingly become polluted with spammy articles.”

“Alexa-like home devices will all be LLM enabled.”

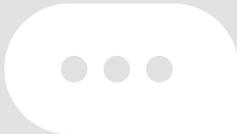
“As AI transforms industries and the world becomes more diverse, consumers can expect to see marketing messages become more personalized, nuanced, and tailored specifically to a person's actual preferences and needs. This evolution in advertising will be driven by a close collaboration between marketing, machine learning, and analytics. This will enhance the experiences coming from brands and lead to more meaningful interactions for consumers.”



“Open source LLMs will dramatically improve in quality, becoming more and more competitive with commercial offerings like ChatGPT. At the same time, they will increasingly run on average consumer hardware, and will require less technical expertise to use them. As a result of all this, in 2024 we will see millions of people start to open source AI on their own devices, in full privacy and safety.”



“I predict that we will see more widespread use of AI as an information wrangler in the websites we frequent the most, particularly for video content and social media. YouTube is already experimenting with AI content topic sorting and a chatbot that acts as a help desk that viewers can interact with while watching videos. Imagine getting faster answers from the most relevant short-form videos without needing to disrupt our current browsing experience to consult traditional search engines.”

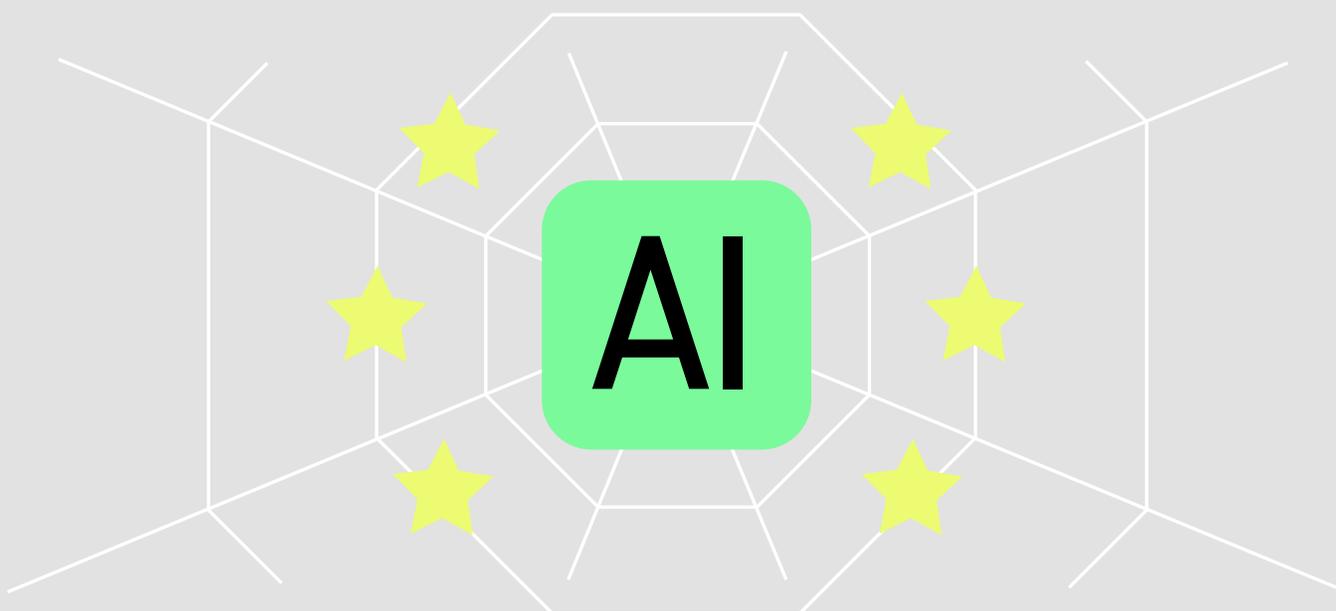


“Generative AI will become more culturally aware, catering to a wider range of languages, norms, spiritual beliefs, laws, etc. There’s good reason to expect AI to broaden its relevance to a wider audience, including languages other than English.”



GET STARTED WITH AI

Mozilla's mission to harness AI's potential is driven by a community-first approach. Earlier this year, we committed to investing \$30 million in mozilla.ai, aiming to build a trustworthy AI ecosystem.



GET STARTED

Mozilla's mission to harness AI's potential is driven by a community-first approach. Earlier this year, we committed to investing \$30 million in [Mozilla.ai](#), aiming to build a trustworthy AI ecosystem. Through initiatives like the [Responsible AI Challenge](#) and the acquisition of [Fakespot](#) — an AI tool to help shoppers sort through fake online reviews — we're shaping a space where AI is accessible, ethical and transformative.

In this same spirit, Mozilla's recently released [AI Guide](#) serves as a gateway for developers diving into AI, with interactive modules and community contributions shaping it into a dynamic learning hub. It's a direct reflection of our ethos: empowering exploration while nurturing an open web.

In addition, Mozilla held its annual [MozFest](#) earlier this year, which was a gathering place for human intelligence to harness our collective intelligence to better our digital landscape, build transformative systems, and sustain momentum within our community towards Trustworthy AI, and positive human and digital rights progress.

And in early December, Mozilla also held its [Innovation Week](#), showcasing different facets of our AI journey. We highlighted groundbreaking innovation projects like [llamafile](#), an open-source initiative that collapses all the complexity of a full-stack LLM chatbot down to a single file that runs on six operating systems.

As we continue this journey, we invite you to join our [AI Discord community](#) and connect with a growing community of AI enthusiasts and builders. Here, your ideas and enthusiasm fuel the next wave of AI innovation.

We all benefit from more people pushing for safe, open and trustworthy AI. This isn't just a moment — it's a movement. We're glad to have you.

