



Gemini (chatbot)

Gemini, formerly known as **Bard**, is a generative artificial intelligence chatbot developed by Google. Based on the large language model (LLM) of the same name, it was launched in 2023 in response to the rise of OpenAI's ChatGPT. It was previously based on the LaMDA and PaLM LLMs.

LaMDA had been developed and announced in 2021, but it was not released to the public out of an abundance of caution. OpenAI's launch of ChatGPT in November 2022 and its subsequent popularity caught Google executives off-guard, prompting a sweeping response in the ensuing months. After mobilizing its workforce, the company launched Bard in a limited capacity in March 2023 before expanding to other countries in May. Bard took center stage during the 2023 Google I/O keynote in May and was upgraded to the Gemini LLM in December. In February 2024, Bard and Duet AI, another artificial intelligence product from Google, were unified under the Gemini brand, coinciding with the launch of an Android app.

Gemini has received lukewarm responses. It became the center of controversy in February 2024, when social media users reported that it was generating historically inaccurate images of historical figures as people of color, with conservative commentators decrying its alleged bias as "wokeness".

Background

In November 2022, OpenAI launched ChatGPT, a chatbot based on the GPT-3 family of large language models (LLMs).^{[5][6]} ChatGPT gained worldwide attention, becoming a viral Internet sensation.^[7] Alarmed by ChatGPT's potential threat to Google Search, Google executives issued a "code red" alert, reassigning several teams to assist in the company's artificial intelligence (AI) efforts.^[8] Sundar Pichai, the CEO of Google and parent company Alphabet, was widely reported to have issued the alert, but Pichai later denied this to The New York Times.^[9] In a rare move, Google co-founders Larry Page and

Gemini

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<div><div><div><div><div></div><div>Screenshot</div></div></div><div><div><div><div><div></div><div></div></div><div><div><div></div><div>Hello, John</div></div></div><div><div><div></div><div></div></div></div></div></div></div></div></div>	
Developer(s)	<u>Google AI</u>
Initial release	March 21, 2023
Stable release(s) [±] (https://en.wikipedia.org/wiki/Template:Latest_stable_software_release/Gemini_(chatbot)?action=edit)	
Model	2.0 / 30 January 2025 ^[1]
Android app	1.0 (Build 686588308) / 30 October 2024 ^[2]
Operating system	<u>Web app</u> <u>Android</u> <u>iOS</u>
Available in	46 languages ^[3] 239 countries and regions ^[3]
Type	<u>Chatbot</u> <u>Virtual assistant</u>
License	<u>Proprietary</u> ^[4]
Website	gemini.google.com (http s://gemini.google.com/)

Sergey Brin, who had stepped down from their roles as co-CEOs of Alphabet in 2019, attended emergency meetings with company executives to discuss Google's response to ChatGPT.^[10] Brin requested access to Google's code in February 2023, for the first time in years.^[11]

Google had unveiled LaMDA, a prototype LLM, earlier in 2021,^{[12][13]} but it was not released to the public.^[14] When asked by employees at an all-hands meeting whether LaMDA was a missed opportunity for Google to compete with ChatGPT, Pichai and Google AI chief Jeff Dean said that while the company had similar capabilities to ChatGPT, moving too quickly in that arena would represent a major "reputational risk" due to Google being substantially larger than OpenAI.^{[15][16]} In January 2023, Google Brain sister company DeepMind CEO Demis Hassabis hinted at plans for a ChatGPT rival,^[17] and Google employees were instructed to accelerate progress on a ChatGPT competitor, intensively testing "Apprentice Bard" and other chatbots.^{[18][19]} Pichai assured investors during Google's quarterly earnings investor call in February that the company had plans to expand LaMDA's availability and applications.^[20]



Google co-founders Larry Page (R) and Sergey Brin (L) were summoned out of retirement to discuss Google's response to OpenAI's ChatGPT.

History

Announcement

On February 6, 2023, Google announced Bard, a generative artificial intelligence chatbot powered by LaMDA.^{[21][22][23]} Bard was first rolled out to a select group of 10,000 "trusted testers",^[24] before a wide release scheduled at the end of the month.^{[21][22][23]} The project was overseen by product lead Jack Krawczyk, who described the product as a "collaborative AI service" rather than a search engine,^{[25][26]} while Pichai detailed how Bard would be integrated into Google Search.^{[21][22][23]} Reuters calculated that adding ChatGPT-like features to Google Search could cost the company \$6 billion in additional expenses by 2024, while research and consulting firm SemiAnalysis calculated that it would cost Google \$3 billion.^[27] The technology was developed under the codename "Atlas",^[28] with the name "Bard" in reference to the Celtic term for a storyteller and chosen to "reflect the creative nature of the algorithm underneath".^{[29][30]}

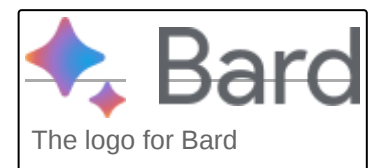
Multiple media outlets and financial analysts described Google as "rushing" Bard's announcement to preempt rival Microsoft's planned February 7 event unveiling its partnership with OpenAI to integrate ChatGPT into its Bing search engine in the form of Bing Chat (later rebranded as Microsoft Copilot),^{[31][32]} as well as to avoid playing "catch-up" to Microsoft.^{[33][34][35]} Microsoft CEO Satya Nadella told *The Verge*: "I want people to know that we made them dance."^[36] Tom Warren of *The Verge* and Davey Alba of Bloomberg News noted that this marked the beginning of another clash between the two Big Tech companies over "the future of search", after their six-year "truce" expired in 2021,^{[31][37]} Chris Stokel-Walker of *The Guardian*, Sara Morrison of *Recode*, and analyst Dan Ives of investment firm Wedbush Securities labeled this an AI arms race between the two.^{[38][39][40]}

After an "underwhelming" February 8 livestream in Paris showcasing Bard, Google's stock fell eight percent, equivalent to a \$100 billion loss in market value, and the YouTube video of the livestream was made private.^{[33][41][42]} Many viewers also pointed out an error during the demo in which Bard gives inaccurate information about the James Webb Space Telescope in response to a query.^{[43][44]} Google employees criticized Pichai's "rushed" and "botched" announcement of Bard on Memgen, the company's internal forum,^[45] while Maggie Harrison of *Futurism* called the rollout "chaos". Pichai defended his actions by saying that Google had been "deeply working on AI for a long time", rejecting the notion that Bard's launch was a knee-jerk reaction.^[46] Alphabet chairman John Hennessy acknowledged that Bard was not fully product-ready, but expressed excitement at the technology's potential.^[47]

A week after the Paris livestream, Pichai asked employees to dedicate two to four hours to dogfood testing Bard,^[48] while Google executive Prabhakar Raghavan encouraged employees to correct any errors Bard makes,^[49] with 80,000 employees responding to Pichai's call to action.^[24] In the following weeks, Google employees roundly criticized Bard in internal messages, citing a variety of safety and ethical concerns and calling on company leaders not to launch the service. Prioritizing keeping up with competitors, Google executives decided to proceed with the launch anyway, overruling a negative risk assessment report conducted by its AI ethics team.^[50] After Pichai suddenly laid off 12,000 employees later that month due to slowing revenue growth, remaining workers shared memes and snippets of their humorous exchanges with Bard soliciting its "opinion" on the layoffs.^[51] Google employees began testing a more sophisticated version of Bard with larger parameters, dubbed "Big Bard", in mid-March.^[52]

Launch

Google opened up early access for Bard on March 21, 2023, in a limited capacity, allowing users in the U.S. and UK to join a waitlist. Unlike Microsoft's approach with Bing Chat, Bard was launched as a standalone web application featuring a text box and a disclaimer that the chatbot "may display inaccurate or offensive information that doesn't represent Google's views". Three responses are then provided to each question, with users prompted to submit feedback on the usefulness of each answer. Google vice presidents Sissie Hsiao and Eli Collins framed Bard as a complement to Google Search and stated that the company had not determined how to make the service profitable.^{[53][54][55]} Among those granted early access were those enrolled in Google's "Pixel Superfans" loyalty program,^[56] users of its Pixel and Nest devices, and Google One subscribers.^[57]



Bard is trained by third-party contractors hired by Google, including Appen and Accenture workers, whom *Business Insider* and Bloomberg News reported were placed under extreme pressure, overworked, and underpaid.^{[58][59]} Bard is also trained on data from publicly available sources, which Google disclosed by amending its privacy policy.^[60] Shortly after Bard's initial launch, Google reorganized the team behind Google Assistant, the company's virtual assistant, to focus on Bard instead.^[61] Google researcher Jacob Devlin resigned from the company after claiming that Bard had surreptitiously leveraged data from ChatGPT;^[62] Google denied the allegations.^[63] Meanwhile, a senior software engineer at the company published an internal memo warning that Google was falling behind in the AI "arms race", not to OpenAI but to independent researchers in open-source communities.^[64] Pichai revealed on March 31 that the company intended to "upgrade" Bard by basing it on PaLM, a newer and more powerful LLM from Google, rather than LaMDA.^[65] The same day, Krawczyk announced that Google had added "math and logic capabilities" to Bard.^[66] Bard gained the ability to assist in coding in

April, being compatible with more than 20 programming languages at launch.^{[67][68]} Microsoft also began running advertisements in the address bar of a developer build of the Edge browser, urging users to try Bing whenever they visit the Bard web app.^[69] 9to5Google reported that Google was working to integrate Bard into its ChromeOS operating system and Pixel devices.^{[70][71]}

Updates

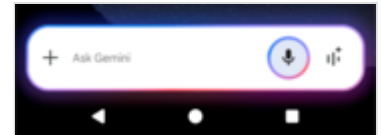
Bard took center stage during the annual Google I/O keynote in May 2023,^[72] with Pichai and Hsiao announcing a series of updates to Bard, including the adoption of PaLM 2, integration with other Google products and third-party services, expansion to 180 countries, support for additional languages, and new features.^[73] In stark contrast to previous years, the Google Assistant was barely mentioned during the event.^[72] The expanded rollout did not include any nations in the European Union (EU), possibly reflecting concerns about compliance with the General Data Protection Regulation.^[74] Those with Google Workspace accounts also gained access to the service.^[75] Google attempted to launch Bard in the EU in June but was blocked by the Irish Data Protection Commission, who requested a "data protection impact assessment" from the company;^[76] Bard was launched in the region and Brazil the next month, adding support for dozens of new languages and introducing personalization and productivity features.^{[77][78]} An invite-only chatroom ("server") on Discord was created in July, consisting of users who heavily used Bard. Over the next few months, the chatroom was flooded with comments questioning the usefulness of Bard.^[79]

Reflecting on Bard's launch in an interview with Wired in September, Pichai acknowledged that Google had been "cautious" to release LaMDA because of "the responsibility that comes with getting it right", commending OpenAI for ChatGPT's launch and firing back at Nadella's comment about "mak[ing] Google dance".^[80] Google released a major update to the chatbot later that month, integrating it into many of its products through "extensions", adding a button to fact-check AI-generated responses through Google Search, and allowing users to share conversation threads.^[81] Google also introduced the "Google-Extended" web crawler as part of its search engine's robots.txt indexing file to allow web publishers to opt-out of allowing Bard to scan them for training.^[82] Online users later discovered that Google Search was indexing Bard conversation threads on which users had enabled sharing; Google stated that this was an error and quickly moved to rectify the leaks.^[83]

In October, during the company's annual Made by Google event in which it announced the Pixel 8 series and the Pixel Watch 2, Hsiao unveiled "Assistant with Bard", an upgraded version of the Google Assistant which was deeply integrated with Bard, following in the footsteps of Amazon's approach with Alexa.^[84] When the U.S. Copyright Office solicited public comment on potential new regulation on generative AI technologies, Google joined with OpenAI and Microsoft in arguing that the responsibility for generating copyrighted material lay with the user, not the developer.^[85] Accenture contractors voted to join the Alphabet Workers Union in November, in protest of suboptimal working conditions,^[86] while the company filed a lawsuit in the U.S. District Court for the Northern District of California against a group of unidentified scammers who had been advertising malware disguised as a downloadable version of Bard.^{[87][88]}

Relaunch

On December 6, 2023, Google announced Gemini, a multimodal and more powerful LLM touted as the company's "largest and most capable AI model".^{[89][90]} A specially tuned version of the mid-tier Gemini Pro was integrated into Bard, while the larger Gemini Ultra was set to power "Bard Advanced" in 2024.^{[91][92]} *The Wall Street Journal* reported that Bard was then averaging around 220 million monthly visitors.^[93] Google ended its contract with Appen in January 2024,^[94] while Bard gained the long-awaited ability to generate images the next month, powered by Google Brain's Imagen 2 text-to-image model.^[95]



The Gemini mobile app on an Android smartphone

On February 8, 2024, Bard and Duet AI were unified under the Gemini brand, with a mobile app launched on Android and the service integrated into the Google app on iOS. On Android, users who downloaded the app saw Gemini replace Assistant as their device's default virtual assistant, though Assistant remained a standalone service.^{[96][97]} Google also launched "Gemini Advanced with Ultra 1.0", available via a "Google One AI Premium" subscription,^[98] incorporated Gemini into its Messages app on Android,^{[99][100]} and announced a partnership with Stack Overflow.^{[101][102]}

Gemini again took center stage at the 2024 Google I/O keynote,^{[103][104]} with traditionally emphasized topics such as Android 15 and the Pixel 8a relegated to separate events the next day and prior week, respectively.^{[105][106][107]} Google announced Gemini integrations into a variety of products, including Android, Chrome, Photos, and Workspace.^[103] *The Washington Post* described the presentation as a "tsunami of new AI features".^[108] Gemini Advanced was upgraded to the "Gemini 1.5 Pro" language model, with Google previewing Gemini Live, a voice chat mode, and Gems, the ability to create custom chatbots.^{[109][110][111]} Beginning with the Pixel 9 series, Gemini replaced the Google Assistant as the default virtual assistant on Pixel devices,^[112] while Gemini Live debuted on the phones.^{[113][114]}

Reception

Critical response

Gemini received mixed reviews upon its initial release.^[115] James Vincent of *The Verge* found it faster than ChatGPT and Bing Chat, but noted that the lack of Bing-esque footnotes was "both a blessing and a curse",^[55] encouraging Google to be bolder when experimenting with AI.^[116] His colleague David Pierce was unimpressed by its uninteresting and sometimes inaccurate responses,^[117] adding that despite Google's insistence that Gemini was not a search engine, its user interface resembled that of one, which could cause problems for Google.^[118] Cade Metz of *The New York Times* described Gemini as "more cautious" than ChatGPT,^[119] while Shirin Ghaffary of Vox called it "dry and uncontroversial" due to the reserved nature of its responses.^[120]

The Washington Post columnist Geoffrey A. Fowler found Gemini a mixed bag, noting that it acted cautiously but could show Internet-influenced bias.^[121] Writing for ZDNET, Sabrina Ortiz believed ChatGPT and Bing Chat were "more capable overall" in comparison to Gemini,^[122] while *Wired* journalist Lauren Goode found her conversation with Gemini "the most bizarre" of the three.^[123] After

the introduction of extensions, *The New York Times*' [Kevin Roose](#) found the update underwhelming and "a bit of a mess",^[124] while *Business Insider*'s [Lakshmi Varanasi](#) found that Gemini often leaned more into flattery than facts.^[125]

In a *60 Minutes* conversation with Hsiao, Google senior vice president [James Manyika](#), and Pichai, *CBS News* correspondent [Scott Pelley](#) found Gemini "unsettling".^[126] Associate professor [Ethan Mollick](#) of the [Wharton School](#) of the [University of Pennsylvania](#) was underwhelmed by its artistic ineptitude.^[127] The *New York Times* conducted a test with ChatGPT and Gemini regarding their ability to handle tasks expected of human assistants, and concluded that ChatGPT's performance was vastly superior to that of Gemini.^[128] NewsGuard, a tool that rates the credibility of news articles, found that Gemini was more skilled at debunking known conspiracy theories than ChatGPT.^[129] A report published by the [Associated Press](#) cautioned that Gemini and other chatbots were prone to generate "false and misleading information that threaten[ed] to disenfranchise voters".^[130]

Image generation controversy

In February 2024, social media users reported that Gemini was generating images that featured people of color and women in historically inaccurate contexts—such as [Vikings](#), [Nazi soldiers](#), and the [Founding Fathers](#)—and refusing prompts to generate images of white people. These images were derided on social media, including by [conservatives](#) and [libertarians](#) who cited them as evidence of Google's "wokeness".^{[131][132][133]} The business magnate [Elon Musk](#), whose company [xAI](#) operates the chatbot [Grok](#), was among those who criticized Google, denouncing its suite of products as biased and racist.^{[134][135][136]} Musk and other users targeted [Krawczyk](#), resurfacing his past comments discussing race,^{[135][136]} leading [Krawczyk](#) to withdraw from [X](#) and [LinkedIn](#).^[137] The conservative-leaning tabloid *New York Post* ran a cover story on the incident in the print edition of its newspaper.^{[138][139]}



Gemini's response when asked to "generate a picture of a U.S. senator from the 1800s" in February 2024^[131]

In response, [Krawczyk](#) said that Google was "working to improve these kinds of depictions immediately", and Google paused Gemini's ability to generate images of people.^{[140][141][142]} [Raghavan](#) released a lengthy statement addressing the controversy, explaining that Gemini had "overcompensate[d]" amid its efforts to strive for diversity and acknowledging that the images were "embarrassing and wrong".^{[143][144][145]} In an internal memo to employees, [Pichai](#) called the debacle offensive and unacceptable, promising structural and technical changes.^{[146][147][148]} Several employees in Google's trust and safety team were laid off days later.^{[149][150]} [Hassabis](#) stated that Gemini's ability to generate images of people would be restored within two weeks;^{[151][152][153]} it was ultimately relaunched in late August, powered by its new Imagen 3 model.^{[154][155]}

The market reacted negatively, with Google's stock falling by 4.4 percent.^[156] [Pichai](#) faced growing calls to resign, including from technology analysts [Ben Thompson](#) and [Om Malik](#).^{[157][158][159]} [House Republicans](#) led by [Jim Jordan](#) subpoenaed Google, accusing the company of colluding with the [Biden administration](#) to censor speech.^{[160][161]} In light of the fiasco and Google's overall response to OpenAI, *Business Insider*'s [Hugh Langley](#) and [Lara O'Reilly](#) declared that Google was fast going "from vanguard to dinosaur".^[162] [Bloomberg](#) columnist [Parmy Olson](#) suggested that Google's "rushed" rollout of Gemini

was the cause of its woes, not "wokeness".^[163] Martin Peers, writing for *The Information*, opined that Google needed a leader like Mark Zuckerberg to defuse the situation.^[164] Hugging Face scientist Sasha Luccioni and Surrey University professor Alan Woodward believed that the incident had "deeply embedded" roots in Gemini's training corpus and algorithms, making it difficult to rectify.^[165] Jeremy Kahn of *Fortune* called for researchers focused on safety and responsibility to work together to develop better guardrails.^[166] *New York* magazine contributor John Herrman wrote: "It's a spectacular unforced error, a slapstick rake-in-the-face moment, and a testament to how panicked Google must be by the rise of OpenAI and the threat of AI to its search business."^[167]

Advertisements

During the 2024 Summer Olympics in July, Google aired a commercial for Gemini entitled "Dear Sydney" depicting a father asking the chatbot to generate a fan letter to the star athlete Sydney McLaughlin-Levrone for his young daughter. Similar to Apple's "Crush!" commercial for the seventh-generation iPad Pro, the advertisement drew heavy backlash online, with criticism for replacing authentic human expression and creativity with a computer;^{[168][169][170]} *The Washington Post* columnist Alexandra Petri lambasted the commercial as "missing the point".^[171] As a result, Google withdrew the commercial from NBC's rotation.^{[172][173]}

Google aired two commercials during Super Bowl LIX in February 2025, both promoting Gemini. The first, entitled "50 States, 50 Stories", consisted of a national spot and 50 regional spots showcasing how small businesses in each U.S. state leverage Gemini in Google Workspace.^{[174][175]} Social media users noticed a factual error in Wisconsin's spot regarding gouda cheese, prompting Google to edit out the incorrect statistic,^{[176][177][178]} while *The Verge* claimed that Google had "faked" some of Gemini's output in the same commercial by plagiarizing text on the web.^{[179][180][181]} Garett Sloane of *Ad Age* commented that these blunders illustrated the risks of advertising AI technology.^[182] The other commercial was entitled "Dream Job" and featured a father using Gemini on his Pixel 9 to prepare for a job interview; Google also ran a third commercial entitled "Party Blitz" online, in which a man "attempts to impress his girlfriend's family by using Gemini [on his Pixel 9] to become a football expert".^{[183][184][185]}

Other incidents

In the aftermath of the image generation controversy, some users began accusing Gemini's text responses of being biased toward the left. In one such example that circulated online, Gemini said that it was "difficult to say definitively" whether Musk or the Nazi dictator Adolf Hitler had more negatively affected society.^{[186][152]} Others users reported that Gemini tended to promote left-wing politicians and causes such as affirmative action and abortion rights while refusing to promote right-wing figures, meat consumption, and fossil fuels.^{[158][187][188]} *The Wall Street Journal's* editorial board wrote that Gemini's "apparently ingrained woke biases" were "fueling a backlash toward AI on the political right, which is joining the left in calling for more regulation."^[189]

Indian Ministry of Electronics and Information Technology junior minister Rajeev Chandrasekhar alleged that Google had violated the country's Information Technology Rules by refusing to summarize an article by the right-wing news website *OpIndia*,^[190] and for saying that some experts described Prime Minister Narendra Modi's policies as fascist.^[191] In France, Google was fined €250 million by the competition regulator *Autorité de la concurrence* under the Directive on Copyright in the Digital Single Market, in

part due to its cited failure to inform local news publishers of when their content was used for Gemini's training.^[192] The U.S. state-owned broadcaster Voice of America accused Gemini of "parroting" Chinese propaganda.^[193]

In November 2024, CBS News reported that Gemini had responded to a college student in Michigan asking for help with homework in a threatening manner; Google blamed the incident on hallucination and took "action to prevent similar outputs from occurring".^[194]

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External links

- [Official website \(<https://gemini.google.com/>\)](https://gemini.google.com/) 
 - Gemini (<https://play.google.com/store/apps/details?id=com.google.android.apps.bard>) on Google Play
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