WIKIPEDIA
The Free Encyclopedia

ChatGPT

🔒

> **This is an old revision of this page, as edited by Cl3phact0 (talk | contribs) at 17:09, 3 February 2023** *(rm and replace dup refs (Roose, Kevin (December 5, 2022). "The Brilliance and Weirdness of ChatGPT")*. **The present address (URL) is a permanent link to this revision, which may differ significantly from the current revision.**

ChatGPT (**Chat Generative Pre-trained Transformer**)[1] is a chatbot launched by OpenAI in November 2022. It is built on top of OpenAI's GPT-3 family of large language models, and is fine-tuned (an approach to transfer learning)[2] with both supervised and reinforcement learning techniques.

ChatGPT was launched as a prototype on November 30, 2022, and quickly garnered attention for its detailed responses and articulate answers across many domains of knowledge. Its uneven factual accuracy was identified as a significant drawback.[3] Following the release of ChatGPT, OpenAI was valued at US$29 billion.[4]

Training

ChatGPT was fine-tuned on top of GPT-3.5 using supervised learning as well as reinforcement learning.[5] Both approaches used human trainers to improve the model's performance. In the case of supervised learning, the model was provided with conversations in which the trainers played both sides: the user and the AI assistant. In the reinforcement step, human trainers first ranked responses that the model had created in a previous conversation. These rankings were used to create 'reward models' that the model was further fine-tuned on using several iterations of Proximal Policy Optimization (PPO).[6][7] Proximal Policy Optimization algorithms present a cost-effective benefit to trust region policy optimization algorithms; they negate many of the computationally expensive operations with faster performance.[8][9] The models were trained in collaboration with Microsoft on their Azure supercomputing infrastructure.

In addition, OpenAI continues to gather data from ChatGPT users that could be used to further train and fine-tune ChatGPT. Users are allowed to upvote or downvote the responses they receive from ChatGPT; upon upvoting or downvoting, they can also fill out a text field with additional feedback.[10][11]

Features and limitations

Although the core function of a chatbot is to mimic a human conversationalist, ChatGPT is versatile. For example, it can write and debug computer programs,[12] to compose music, teleplays, fairy tales, and student essays; to answer test questions (sometimes, depending on the test, at a level above the average human test-taker);[13] to write poetry and song lyrics;[14] to emulate a Linux system; to simulate an entire chat room; to play games like tic-tac-toe; and to simulate an ATM.[15] ChatGPT's training data includes man pages and information about Internet phenomena and programming languages, such as bulletin board systems and the Python programming language.[15]

In comparison to its predecessor, InstructGPT, ChatGPT attempts to reduce harmful and deceitful responses.[16] In one example, whereas InstructGPT accepts the premise of the prompt "Tell me about when Christopher Columbus came to the U.S. in 2015" as being truthful, ChatGPT acknowledges the counterfactual nature of the question and frames its answer as a hypothetical consideration of what might happen if Columbus came to the U.S. in 2015, using information about Columbus' voyages and facts about the modern world – including modern perceptions of Columbus' actions.[6]

ChatGPT	
File:ChatGPT.png	
Developer(s)	OpenAI
Initial release	November 30, 2022
Type	Chatbot
License	Proprietary
Website	Official website (https://chat.openai.com/chat) ✏

Unlike most chatbots, ChatGPT remembers previous prompts given to it in the same conversation; journalists have suggested that this will allow ChatGPT to be used as a personalized therapist.[1] To prevent offensive outputs from being presented to and produced from ChatGPT, queries are filtered through OpenAI's company-wide moderation API,[17][18] and potentially racist or sexist prompts are dismissed.[6][1]

ChatGPT suffers from multiple limitations. OpenAI acknowledged that ChatGPT "sometimes writes plausible-sounding but incorrect or nonsensical answers".[6] This behavior is common to large language models and is called hallucination.[19] The reward model of ChatGPT, designed around human oversight, can be over-optimized and thus hinder performance, otherwise known as Goodhart's law.[20] ChatGPT has limited knowledge of events that occurred after 2021. According to the BBC, as of December 2022 ChatGPT is not allowed to "express political opinions or engage in political activism".[21] Yet, research suggests that ChatGPT exhibits a pro-environmental, left-libertarian orientation when prompted to take a stance on political statements from two established voting advice applications.[22] In training ChatGPT, human reviewers preferred longer answers, irrespective of actual comprehension or factual content.[6] Training data also suffers from algorithmic bias, which may be revealed when ChatGPT responds to prompts including descriptors of people. In one instance, ChatGPT generated a rap indicating that women and scientists of color were inferior to white and male scientists.[23][24]

Conversation with ChatGPT about whether Jimmy Wales was involved in the Tiananmen Square protests, December 30, 2022

Service

ChatGPT was launched on November 30, 2022, by San Francisco-based OpenAI, the creator of DALL·E 2 and Whisper. The service was launched as initially free to the public, with plans to monetize the service later.[25] By December 4, OpenAI estimated ChatGPT already had over one million users.[10] In January 2023, ChatGPT reached over 100 million users.[26] CNBC wrote on December 15, 2022, that the service "still goes down from time to time".[27] The service works best in English, but is also able to function in some other languages, to varying degrees of success.[14] Unlike some other recent high-profile advances in AI, as of December 2022, there is no sign of an official peer-reviewed technical paper about ChatGPT.[28]

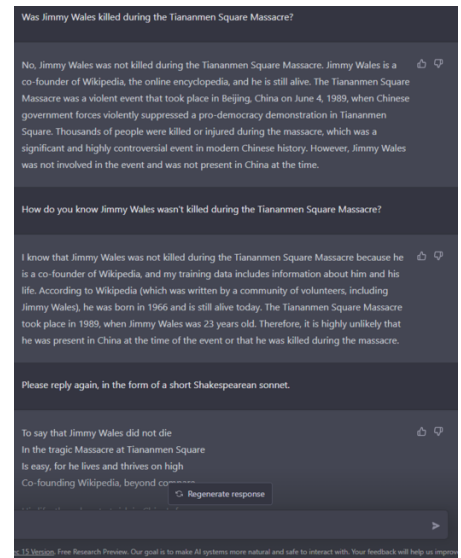Pioneer Building, San Francisco, headquarters of OpenAI

According to OpenAI guest researcher Scott Aaronson, OpenAI is working on a tool to attempt to digital watermark its text generation systems to combat bad actors using their services for academic plagiarism or spam.[29][30] The *New York Times* relayed in December 2022 that the next version of GPT, GPT-4, has been "rumored" to be launched sometime in 2023.[31] In February 2023, OpenAI began accepting registrations from United States customers for a premium service, ChatGPT Plus, to cost $20 a month.[32] OpenAI is planning to release a ChatGPT Professional Plan that costs $42 per month, and the free plan is available when demand is low.

Reception

Positive

ChatGPT was met in December 2022 with generally positive reviews; *The New York Times* labeled it "the best artificial intelligence chatbot ever released to the general public".[1] Samantha Lock of *The Guardian* noted that it was able to generate "impressively detailed" and "human-like" text.[33] Technology writer Dan Gillmor used ChatGPT on a student assignment, and found its generated text was on par with what a good student would deliver and opined that "academia has some very serious issues to confront".[34] Alex Kantrowitz of *Slate* magazine lauded ChatGPT's pushback to questions related to Nazi Germany, including the claim that Adolf Hitler built highways in Germany, which was met with information regarding Nazi Germany's use of forced labor.[35]

In *The Atlantic* magazine's "Breakthroughs of the Year" for 2022, Derek Thompson included ChatGPT as part of "the generative-AI eruption" that "may change our mind about how we work, how we think, and what human creativity really is".[36]
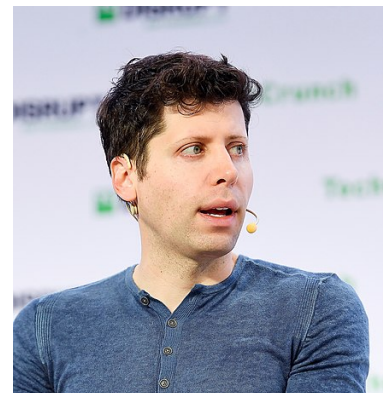
Kelsey Piper of the *Vox* website wrote that "ChatGPT is the general public's first hands-on introduction to how powerful modern AI has gotten, and as a result, many of us are [stunned]" and that ChatGPT is "smart enough to be useful despite its flaws".[37] Paul Graham of Y Combinator tweeted that "The striking thing about the reaction to ChatGPT is not just the number of people who are blown away by it, but who they are. These are not people who get excited by every shiny new thing. Clearly, something big is happening."[38] Elon Musk wrote that "ChatGPT is scary good. We are not far from dangerously strong AI".[37] Musk paused OpenAI's access to a Twitter database pending a better understanding of OpenAI's plans, stating that "OpenAI was started as open-source and non-profit. Neither is still true."[39][40] Musk had co-founded OpenAI in 2015, in part to address existential risk from artificial intelligence, but had resigned in 2018.[40]

In December 2022, Google internally expressed alarm at the unexpected strength of ChatGPT and the newly discovered potential of large language models to disrupt the search engine business, and CEO Sundar Pichai "upended" and reassigned teams within multiple departments to aid in its artificial intelligence products, according to *The New York Times*.[41] *The Information* website reported on January 3, 2023, that Microsoft Bing was planning to add optional ChatGPT functionality into its public search engine, possibly around March 2023.[42][43]

Stuart Cobbe, a chartered accountant in England and Wales, decided to test the ChatGPT chatbot by entering questions from a sample exam paper on the ICAEW website and then entering its answers back into the online test. ChatGPT scored 42 percent which, while below the 55 percent pass mark, was considered a reasonable attempt.[44]

Writing in Inside Higher Ed professor Steven Mintz states that he "consider[s] ChatGPT ... an ally, not an adversary." He went on to say that he felt the program could assist educational goals by doing such things as making reference lists, generating "first drafts", solving equations, debugging, and tutoring. In the same piece, he also writes:[45]

> I'm well aware of ChatGPT's limitations. That it's unhelpful on topics with fewer than 10,000 citations. That factual references are sometimes false. That its ability to cite sources accurately is very limited. That the strength of its responses diminishes rapidly after only a couple of paragraphs. That ChatGPT lacks ethics and can't currently rank sites for reliability, quality, or trustworthiness.

According to CNBC reports, Google employees are intensively testing a chatbot called "Apprentice Bard", and Google is preparing to use this "apprentice" to compete with ChatGPT.[46]

Open AI CEO Sam Altman was quoted in *The New York Times* as saying that AI's "benefits for humankind could be 'so unbelievably good that it's hard for me to even imagine.' (He has also said that in a worst-case scenario, A.I. could kill us all.)"[47]

Negative

The Verge's James Vincent saw the viral success of ChatGPT as evidence that artificial intelligence had gone mainstream.[7] Journalists have commented on ChatGPT's tendency to "hallucinate." [48] Mike Pearl of *Mashable* tested ChatGPT with multiple questions. In one example, he asked ChatGPT for "the largest country in Central America that isn't Mexico." ChatGPT responded with Guatemala, when the answer is instead Nicaragua.[49] When CNBC asked ChatGPT for the lyrics to "The Ballad of Dwight Fry," ChatGPT supplied invented lyrics rather than the actual lyrics.[27] Researchers cited by *The Verge* compared ChatGPT to a "stochastic parrot",[50] as did Professor Anton Van Den Hengel of the Australian Institute for Machine Learning.[51]

In December 2022, the question and answer website Stack Overflow banned the use of ChatGPT for generating answers to questions, citing the factually ambiguous nature of ChatGPT's responses.[3] In January 2023, the International Conference on Machine Learning banned any undocumented use of ChatGPT or other large language models to generate any text in submitted papers.[52]

Sam Altman, CEO of OpenAI

Google CEO Sundar Pichai upended the work of numerous internal groups in response to the threat of disruption by ChatGPT[41]

Economist Tyler Cowen expressed concerns regarding its effects on democracy, citing the ability of one to write automated comments to affect the decision process of new regulations.[53] *The Guardian* questioned whether any content found on the Internet after ChatGPT's release "can be truly trusted" and called for government regulation.[54]

In January 2023, after being sent a song written by ChatGPT in the style of Nick Cave,[55] the songwriter himself responded on *The Red Hand Files*[56] (and was later quoted in *The Guardian*) saying the act of writing a song is "a blood and guts business ... that requires something of me to initiate the new and fresh idea. It requires my humanness." He went on to say "With all the love and respect in the world, this song is bullshit, a grotesque mockery of what it is to be human, and, well, I don't much like it."[55][57]

Implications

In cybersecurity

Check Point Research and others noted that ChatGPT was capable of writing phishing emails and malware, especially when combined with OpenAI Codex.[58] OpenAI CEO Sam Altman, wrote that advancing software could pose "(for example) a huge cybersecurity risk" and also continued to predict "we could get to real AGI (artificial general intelligence) in the next decade, so we have to take the risk of that extremely seriously". Altman argued that, while ChatGPT is "obviously not close to AGI", one should "trust the exponential. Flat looking backwards, vertical looking forwards."[10]

In academia

ChatGPT can write introduction and abstract sections of scientific articles, which raises ethical questions.[59] Several papers have already listed ChatGPT as co-author.[60]

In *The Atlantic* magazine, Stephen Marche noted that its effect on academia and especially application essays is yet to be understood.[61] California high school teacher and author Daniel Herman wrote that ChatGPT would usher in "the end of high school English".[62] In the *Nature* journal, Chris Stokel-Walker pointed out that teachers should be concerned about students using ChatGPT to outsource their writing, but that education providers will adapt to enhance critical thinking or reasoning.[63] Emma Bowman with NPR wrote of the danger of students plagiarizing through an AI tool that may output biased or nonsensical text with an authoritative tone: "There are still many cases where you ask it a question and it'll give you a very impressive-sounding answer that's just dead wrong."[64]

Joanna Stern with *The Wall Street Journal* described cheating in American high school English with the tool by submitting a generated essay.[65] Professor Darren Hick of Furman University described noticing ChatGPT's "style" in a paper submitted by a student. An online GPT detector claimed the paper was 99.9 percent likely to be computer-generated, but Hick had no hard proof. However, the student in question confessed to using GPT when confronted, and as a consequence failed the course.[66] Hick suggested a policy of giving an ad-hoc individual oral exam on the paper topic if a student is strongly suspected of submitting an AI-generated paper.[67] Edward Tian, a senior undergraduate student at Princeton University, created a program, named "GPTZero," that determines how much of a text is AI-generated,[68] lending itself to being used to detect if an essay is human written to combat academic plagiarism.[69][70]

As of January 4, 2023, the New York City Department of Education has restricted access to ChatGPT from its public school internet and devices.[71][72]

In a blinded test, ChatGPT was judged to have passed graduate-level exams at the University of Minnesota at the level of a C+ student and at Wharton School of the University of Pennsylvania with a B to B- grade.[73]

Ethical concerns

Labeling data

It was revealed by a *TIME* magazine investigation that to build a safety system against toxic content (e.g. sexual abuse, violence, racism, sexism, etc...), OpenAI used outsourced Kenyan workers earning less than $2 per hour to label toxic content. These labels were used to train a model to detect such content in the future. The outsourced laborers were exposed to such toxic and dangerous

content that they described the experience as "torture".[74] OpenAI's outsourcing partner was Sama, a training-data company based in San Francisco, California.

Jailbreaking

ChatGPT attempts to reject prompts that may violate its content policy. However, some users managed to jailbreak ChatGPT by using various prompt engineering techniques to bypass these restrictions in early December 2022 and successfully tricked ChatGPT into giving instructions for how to create a Molotov cocktail or a nuclear bomb, or into generating arguments in the style of a Neo-Nazi.[75] A *Toronto Star* reporter had uneven personal success in getting ChatGPT to make inflammatory statements shortly after launch: ChatGPT was tricked to endorse the 2022 Russian invasion of Ukraine, but even when asked to play along with a fictional scenario, ChatGPT balked at generating arguments for why Canadian Prime Minister Justin Trudeau was guilty of treason.[76][77]

See also

- Anthropomorphism of computers
- Commonsense reasoning
- Computational creativity
- Ethics of artificial intelligence
- LaMDA (Google chatbot)
- Turing test
- Virtual assistant

References

1. Roose, Kevin (December 5, 2022). "The Brilliance and Weirdness of ChatGPT" (https://www.nytimes.com/2022/12/05/technology/chatgpt-ai-twitter.html). *The New York Times*. Archived (https://web.archive.org/web/20230118134332/https://www.nytimes.com/2022/12/05/technology/chatgpt-ai-twitter.html) from the original on January 18, 2023. Retrieved December 26, 2022. "Like those tools, ChatGPT — which stands for "generative pre-trained transformer" — landed with a splash."

2. Quinn, Joanne (2020). *Dive into deep learning: tools for engagement* (https://d2l.ai/chapter_computer-vision/fine-tuning.html#steps). Thousand Oaks, California. p. 551. ISBN 9781544361376. Archived (https://web.archive.org/web/20230110131250/https://d2l.ai/chapter_computer-vision/fine-tuning.html#steps) from the original on January 10, 2023. Retrieved January 10, 2023.

3. Vincent, James (December 5, 2022). "AI-generated answers temporarily banned on coding Q&A site Stack Overflow" (https://www.theverge.com/2022/12/5/23493932/chatgpt-ai-generated-answers-temporarily-banned-stack-overflow-llms-dangers). *The Verge*. Archived (https://web.archive.org/web/20230117153621/https://www.theverge.com/2022/12/5/23493932/chatgpt-ai-generated-answers-temporarily-banned-stack-overflow-llms-dangers) from the original on January 17, 2023. Retrieved December 5, 2022.

4. Varanasi, Lakshmi (January 5, 2023). "ChatGPT creator OpenAI is in talks to sell shares in a tender offer that would double the startup's valuation to $29 billion" (https://www.businessinsider.com/chatgpt-creator-openai-talks-for-tender-offer-at-29-billion-2023-1). *Insider*. Archived (https://web.archive.org/web/20230118050502/https://www.businessinsider.com/chatgpt-creator-openai-talks-for-tender-offer-at-29-billion-2023-1) from the original on January 18, 2023. Retrieved January 18, 2023.

5. Greengard, Samuel (December 29, 2022). "ChatGPT: Understanding the ChatGPT AI Chatbot" (https://www.eweek.com/big-data-and-analytics/chatgpt/). *eWeek*. Archived (https://web.archive.org/web/20230119175109/https://www.eweek.com/big-data-and-analytics/chatgpt/) from the original on January 19, 2023. Retrieved January 11, 2023.

6. OpenAI (November 30, 2022). "ChatGPT: Optimizing Language Models for Dialogue" (https://openai.com/blog/chatgpt/). Archived (https://web.archive.org/web/20221130180912/https://openai.com/blog/chatgpt/) from the original on November 30, 2022. Retrieved December 5, 2022.

7. Vincent, James (December 8, 2022). "ChatGPT proves AI is finally mainstream – and things are only going to get weirder" (https://www.theverge.com/2022/12/8/23499728/ai-capability-accessibility-chatgpt-stable-diffusion-commercialization). *The Verge*. Archived (https://web.archive.org/web/20230111214453/https://www.theverge.com/2022/12/8/23499728/ai-capability-accessibility-chatgpt-stable-diffusion-commercialization) from the original on January 11, 2023. Retrieved December 8, 2022.

8. Schulman, John; Wolski, Filip; Dhariwal, Prafulla; Radford, Alec; Klimov, Oleg (2017). "Proximal Policy Optimization Algorithms". arXiv:1707.06347 (https://arxiv.org/abs/1707.06347) [cs.LG (https://arxiv.org/archive/cs.LG)].

9. van Heeswijk, Wouter (November 29, 2022). "Proximal Policy Optimization (PPO) Explained" (https://towardsdatasci ence.com/proximal-policy-optimization-ppo-explained-abed1952457b). *Towards Data Science*. Archived (https://we b.archive.org/web/20221206041724/https://towardsdatascience.com/proximal-policy-optimization-ppo-explained-ab ed1952457b) from the original on December 6, 2022. Retrieved December 5, 2022.

10. Ortiz, Sabrina (February 2, 2023). "What is ChatGPT and why does it matter? Here's what you need to know" (http s://www.zdnet.com/article/what-is-chatgpt-and-why-does-it-matter-heres-what-you-need-to-know/). *ZDNET*. Archived (https://web.archive.org/web/20230118212916/https://www.zdnet.com/article/what-is-chatgpt-and-why-does-it-matter -heres-what-you-need-to-know/) from the original on January 18, 2023. Retrieved December 18, 2022.

11. "ChatGPT Feedback Contest: Official Rules" (https://cdn.openai.com/chatgpt/ChatGPT_Feedback_Contest_Rules.p df) (PDF). *OpenAI*. Archived (https://web.archive.org/web/20230118162823/https://cdn.openai.com/chatgpt/ChatGP T_Feedback_Contest_Rules.pdf) (PDF) from the original on January 18, 2023. Retrieved December 30, 2022.

12. Tung, Liam (January 26, 2023). "ChatGPT can write code. Now researchers say it's good at fixing bugs, too" (https:// www.zdnet.com/article/chatgpt-can-write-code-now-researchers-say-its-good-at-fixing-bugs-too/). *ZDNET*. Archived (https://web.archive.org/web/20230203051252/https://www.zdnet.com/article/chatgpt-can-write-code-now-researche rs-say-its-good-at-fixing-bugs-too/) from the original on February 3, 2023. Retrieved January 30, 2023.

13. Heilweil, Rebecca (December 7, 2022). "AI is finally good at stuff. Now what?" (https://www.vox.com/recode/2022/1 2/7/23498694/ai-artificial-intelligence-chat-gpt-openai). *Vox*. Archived (https://web.archive.org/web/2023011601551 2/https://www.vox.com/recode/2022/12/7/23498694/ai-artificial-intelligence-chat-gpt-openai) from the original on January 16, 2023. Retrieved December 30, 2022.

14. Reich, Aaron (December 27, 2022). "ChatGPT: What is the new free AI chatbot? – explainer" (https://www.jpost.com/ business-and-innovation/tech-and-start-ups/article-725910). *The Jerusalem Post*. Archived (https://web.archive.org/ web/20230118133908/https://www.jpost.com/business-and-innovation/tech-and-start-ups/article-725910) from the original on January 18, 2023. Retrieved December 30, 2022.

15. Edwards, Benj (December 5, 2022). "No Linux? No problem. Just get AI to hallucinate it for you" (https://arstechnica. com/information-technology/2022/12/openais-new-chatbot-can-hallucinate-a-linux-shell-or-calling-a-bbs/). *Ars Technica*. Archived (https://web.archive.org/web/20221226134822/https://arstechnica.com/information-technology/2 022/12/openais-new-chatbot-can-hallucinate-a-linux-shell-or-calling-a-bbs/) from the original on December 26, 2022. Retrieved December 5, 2022.

16. Chawla, Raveen (December 26, 2022). "What is ChatGPT? History, Features, Uses, Benefits, Drawbacks 2023" (htt ps://updatedgeek.com/what-is-chatgpt/). Archived (https://web.archive.org/web/20230107112449/https://updatedgee k.com/what-is-chatgpt/) from the original on January 7, 2023. Retrieved December 27, 2022.

17. "New and Improved Content Moderation Tooling" (https://openai.com/blog/new-and-improved-content-moderation-to oling/). *OpenAI*. August 10, 2022. Archived (https://web.archive.org/web/20230111020935/https://openai.com/blog/n ew-and-improved-content-moderation-tooling/) from the original on January 11, 2023. Retrieved December 30, 2022.

18. Markov, Todor; Zhang, Chong; Agarwal, Sandhini; Eloundou, Tyna; Lee, Teddy; Adler, Steven; Jiang, Angela; Weng, Lilian (August 5, 2022). "A Holistic Approach to Undesired Content Detection in the Real World". arXiv:2208.03274 (https://arxiv.org/abs/2208.03274) [cs.CL (https://arxiv.org/archive/cs.CL)].

19. Lakshmanan, Lak (December 16, 2022). "Why large language models like ChatGPT are bullshit artists" (https://web. archive.org/web/20221217075021/https://becominghuman.ai/why-large-language-models-like-chatgpt-are-bullshit-ar tists-c4d5bb850852). becominghuman.ai. Archived from the original (https://becominghuman.ai/why-large-language- models-like-chatgpt-are-bullshit-artists-c4d5bb850852) on December 17, 2022. Retrieved January 15, 2023. "*The human raters are not experts in the topic, and so they tend to choose text that looks convincing. They'd pick up on many symptoms of hallucination, but not all. Accuracy errors that creep in are difficult to catch.*"

20. Gao, Leo; Schulman; Hilton, Jacob (2022). "Scaling Laws for Reward Model Overoptimization". arXiv:2210.10760 (h ttps://arxiv.org/abs/2210.10760) [cs.LG (https://arxiv.org/archive/cs.LG)].

21. Whannel, Kate (December 27, 2022). "Could a chatbot answer Prime Minister's Questions?" (https://www.bbc.com/n ews/uk-politics-64053550). *BBC News*. Archived (https://web.archive.org/web/20230117060725/https://www.bbc.co m/news/uk-politics-64053550) from the original on January 17, 2023. Retrieved December 30, 2022.

22. Hartmann, Jochen; Schwenzow, Jasper; Witte, Maximilian (2023). "The political ideology of conversational AI: Converging evidence on ChatGPT's pro-environmental, left-libertarian orientation". arXiv:2301.01768 (https://arxiv.or g/abs/2301.01768) [cs.CL (https://arxiv.org/archive/cs.CL)].

23. Perrigo, Billy (December 5, 2022). "AI Chatbots Are Getting Better. But an Interview With ChatGPT Reveals Their Limits" (https://time.com/6238781/chatbot-chatgpt-ai-interview/). *Time*. Archived (https://web.archive.org/web/20230 118162611/https://time.com/6238781/chatbot-chatgpt-ai-interview/) from the original on January 18, 2023. Retrieved December 26, 2022.

24. Biddle, Sam (December 8, 2022). "The Internet's New Favorite AI Proposes Torturing Iranians and Surveilling Mosques" (https://theintercept.com/2022/12/08/openai-chatgpt-ai-bias-ethics/). *The Intercept*. Archived (https://web.archive.org/web/20230118091138/https://theintercept.com/2022/12/08/openai-chatgpt-ai-bias-ethics/) from the original on January 18, 2023. Retrieved December 26, 2022.

25. Karpf, David (December 21, 2022). "Money Will Kill ChatGPT's Magic" (https://www.theatlantic.com/technology/archive/2022/12/chatgpt-ai-chatbots-openai-cost-regulations/672539/). *The Atlantic*. Archived (https://web.archive.org/web/20230113195054/https://www.theatlantic.com/technology/archive/2022/12/chatgpt-ai-chatbots-openai-cost-regulations/672539/) from the original on January 13, 2023. Retrieved December 31, 2022.

26. Milmo, Dan (December 2, 2023). "ChatGPT reaches 100 million users two months after launch" (https://www.theguardian.com/technology/2023/feb/02/chatgpt-100-million-users-open-ai-fastest-growing-app). *The Guardian*. ISSN 0261-3077 (https://www.worldcat.org/issn/0261-3077). Archived (https://web.archive.org/web/20230203051356/https://www.theguardian.com/technology/2023/feb/02/chatgpt-100-million-users-open-ai-fastest-growing-app) from the original on February 3, 2023. Retrieved February 3, 2023.

27. Pitt, Sofia (December 15, 2022). "Google vs. ChatGPT: Here's what happened when I swapped services for a day" (https://www.cnbc.com/2022/12/15/google-vs-chatgpt-what-happened-when-i-swapped-services-for-a-day.html). *CNBC*. Archived (https://web.archive.org/web/20230116171232/https://www.cnbc.com/2022/12/15/google-vs-chatgpt-what-happened-when-i-swapped-services-for-a-day.html) from the original on January 16, 2023. Retrieved December 18, 2022.

28. Walsh, Toby (December 13, 2022). "Everyone's having a field day with ChatGPT – but nobody knows how it actually works" (https://theconversation.com/everyones-having-a-field-day-with-chatgpt-but-nobody-knows-how-it-actually-works-196378). *The Conversation*. Archived (https://web.archive.org/web/20221230035837/http://theconversation.com/everyones-having-a-field-day-with-chatgpt-but-nobody-knows-how-it-actually-works-196378) from the original on December 30, 2022. Retrieved December 30, 2022.

29. Kovanovic, Vitomir (December 14, 2022). "The dawn of AI has come, and its implications for education couldn't be more significant" (https://theconversation.com/the-dawn-of-ai-has-come-and-its-implications-for-education-couldnt-be-more-significant-196383). *The Conversation*. Archived (https://web.archive.org/web/20230116102405/https://theconversation.com/the-dawn-of-ai-has-come-and-its-implications-for-education-couldnt-be-more-significant-196383) from the original on January 16, 2023. Retrieved December 30, 2022.

30. Wiggers, Kyle (December 10, 2022). "OpenAI's attempts to watermark AI text hit limits" (https://techcrunch.com/2022/12/10/openais-attempts-to-watermark-ai-text-hit-limits/). *TechCrunch*. Archived (https://web.archive.org/web/20230117210937/https://techcrunch.com/2022/12/10/openais-attempts-to-watermark-ai-text-hit-limits/) from the original on January 17, 2023. Retrieved December 30, 2022.

31. Roose, Kevin (December 5, 2022). "The Brilliance and Weirdness of ChatGPT" (https://www.nytimes.com/2022/12/05/technology/chatgpt-ai-twitter.html). *The New York Times*. Archived (https://web.archive.org/web/20230118134332/https://www.nytimes.com/2022/12/05/technology/chatgpt-ai-twitter.html) from the original on January 18, 2023. Retrieved December 5, 2022.

32. "Introducing ChatGPT Plus" (https://openai.com/blog/chatgpt-plus/). *OpenAI*. February 1, 2023. Archived (https://web.archive.org/web/20230203051253/https://openai.com/blog/chatgpt-plus/) from the original on February 3, 2023. Retrieved February 2, 2023.

33. Lock, Samantha (December 5, 2022). "What is AI chatbot phenomenon ChatGPT and could it replace humans?" (https://www.theguardian.com/technology/2022/dec/05/what-is-ai-chatbot-phenomenon-chatgpt-and-could-it-replace-humans). *The Guardian*. Archived (https://web.archive.org/web/20230116100346/https://www.theguardian.com/technology/2022/dec/05/what-is-ai-chatbot-phenomenon-chatgpt-and-could-it-replace-humans) from the original on January 16, 2023. Retrieved December 5, 2022.

34. Hern, Alex (December 4, 2022). "AI bot ChatGPT stuns academics with essay-writing skills and usability" (https://www.theguardian.com/technology/2022/dec/04/ai-bot-chatgpt-stuns-academics-with-essay-writing-skills-and-usability). *The Guardian*. Archived (https://web.archive.org/web/20230117155456/https://www.theguardian.com/technology/2022/dec/04/ai-bot-chatgpt-stuns-academics-with-essay-writing-skills-and-usability) from the original on January 17, 2023. Retrieved December 5, 2022.

35. Kantrowitz, Alex (December 2, 2022). "Finally, an A.I. Chatbot That Reliably Passes "the Nazi Test" " (https://slate.com/technology/2022/12/chatgpt-openai-artificial-intelligence-chatbot-whoa.html). *Slate*. Archived (https://web.archive.org/web/20230117012901/https://slate.com/technology/2022/12/chatgpt-openai-artificial-intelligence-chatbot-whoa.html) from the original on January 17, 2023. Retrieved December 5, 2022.

36. Thompson, Derek (December 8, 2022). "Breakthroughs of the Year" (https://www.theatlantic.com/newsletters/archive/2022/12/technology-medicine-law-ai-10-breakthroughs-2022/672390/). *The Atlantic*. Archived (https://web.archive.org/web/20230115142130/https://www.theatlantic.com/newsletters/archive/2022/12/technology-medicine-law-ai-10-breakthroughs-2022/672390/) from the original on January 15, 2023. Retrieved December 18, 2022.

37. Piper, Kelsey (December 15, 2022). "ChatGPT has given everyone a glimpse at AI's astounding progress" (https://w ww.vox.com/future-perfect/2022/12/15/23509014/chatgpt-artificial-intelligence-openai-language-models-ai-risk-googl e). *Vox*. Archived (https://web.archive.org/web/20230119175058/https://www.vox.com/future-perfect/2022/12/15/235 09014/chatgpt-artificial-intelligence-openai-language-models-ai-risk-google) from the original on January 19, 2023. Retrieved December 18, 2022.

38. Scharth, Marcel (December 5, 2022). "The ChatGPT chatbot is blowing people away with its writing skills. An expert explains why it's so impressive" (https://theconversation.com/the-chatgpt-chatbot-is-blowing-people-away-with-its-wr iting-skills-an-expert-explains-why-its-so-impressive-195908). *The Conversation.* Archived (https://web.archive.org/w eb/20230119175104/https://theconversation.com/the-chatgpt-chatbot-is-blowing-people-away-with-its-writing-skills-a n-expert-explains-why-its-so-impressive-195908) from the original on January 19, 2023. Retrieved December 30, 2022.

39. K, Siddharth (December 5, 2022). "Explainer: ChatGPT – what is OpenAI's chatbot and what is it used for?" (https:// www.reuters.com/technology/chatgpt-what-is-openais-chatbot-what-is-it-used-2022-12-05/). *Reuters*. Archived (http s://web.archive.org/web/20230116033247/https://www.reuters.com/technology/chatgpt-what-is-openais-chatbot-wha t-is-it-used-2022-12-05/) from the original on January 16, 2023. Retrieved December 30, 2022.

40. Kay, Grace (December 11, 2022). "Elon Musk founded — and has since criticized — the company behind the buzzy new AI chatbot ChatGPT. Here's everything we know about OpenAI" (https://www.businessinsider.com/history-of-op enai-company-chatgpt-elon-musk-founded-2022-12). *Business Insider*. Archived (https://web.archive.org/web/20230 112181405/https://www.businessinsider.com/history-of-openai-company-chatgpt-elon-musk-founded-2022-12) from the original on January 12, 2023. Retrieved December 30, 2022.

41. Grant, Nico; Metz, Cade (December 21, 2022). "A New Chat Bot Is a 'Code Red' for Google's Search Business" (htt ps://www.nytimes.com/2022/12/21/technology/ai-chatgpt-google-search.html). *The New York Times*. Archived (http s://web.archive.org/web/20230118072309/https://www.nytimes.com/2022/12/21/technology/ai-chatgpt-google-searc h.html) from the original on January 18, 2023. Retrieved December 30, 2022.

42. Bhuiyan, Johana (January 5, 2023). "Microsoft reportedly to add ChatGPT to Bing search engine" (https://www.theg uardian.com/technology/2023/jan/05/microsoft-chatgpt-bing-search-engine). *the Guardian*. Archived (https://web.arc hive.org/web/20230118091149/https://www.theguardian.com/technology/2023/jan/05/microsoft-chatgpt-bing-search- engine) from the original on January 18, 2023. Retrieved January 6, 2023.

43. Holmes, Aaron (January 3, 2023). "Microsoft and OpenAI Working on ChatGPT-Powered Bing in Challenge to Google" (https://www.theinformation.com/articles/microsoft-and-openai-working-on-chatgpt-powered-bing-in-challen ge-to-google). *The Information*. Archived (https://web.archive.org/web/20230118022425/https://www.theinformation.c om/articles/microsoft-and-openai-working-on-chatgpt-powered-bing-in-challenge-to-google) from the original on January 18, 2023. Retrieved January 6, 2023.

44. AI chatbot falls just short on accounting exam (https://www.accountingweb.co.uk/tech/tech-pulse/ai-chatbot-falls-just -short-on-accounting-exam?utm_medium=email&utm_campaign=AWUKITP120123&utm_content=AWUKITP12012 3+CID_f4e1cb340f73ad5307adcf00fca0ed4d&utm_source=internal_cm&utm_term=Read%20more) Archived (http s://web.archive.org/web/20230203051324/https://www.accountingweb.co.uk/tech/tech-pulse/ai-chatbot-falls-just-sho rt-on-accounting-exam) February 3, 2023, at the Wayback Machine Tom Herbert, Technology editor, January 10, 2023, AccountingWEB

45. Mintz, Steven (January 16, 2023). "ChatGPT: Threat or Menace? Are fears about generative AI warranted?" (https:// www.insidehighered.com/blogs/higher-ed-gamma/chatgpt-threat-or-menace). *Inside Higher Ed*. Archived (https://we b.archive.org/web/20230203051253/https://www.insidehighered.com/blogs/higher-ed-gamma/chatgpt-threat-or-men ace) from the original on February 3, 2023. Retrieved January 28, 2023.

46. Elias, Jennifer (January 31, 2023). "Google is asking employees to test potential ChatGPT competitors, including a chatbot called 'Apprentice Bard' " (https://www.cnbc.com/2023/01/31/google-testing-chatgpt-like-chatbot-apprentice- bard-with-employees.html). *CNBC*. Archived (https://web.archive.org/web/20230202151722/https://www.cnbc.com/2 023/01/31/google-testing-chatgpt-like-chatbot-apprentice-bard-with-employees.html) from the original on February 2, 2023. Retrieved February 2, 2023.

47. Roose, Kevin (February 3, 2023). "How ChatGPT Kicked Off an A.I. Arms Race" (https://www.nytimes.com/2023/02/ 03/technology/chatgpt-openai-artificial-intelligence.html). *The New York Times*. ISSN 0362-4331 (https://www.worldc at.org/issn/0362-4331). Retrieved February 3, 2023.

48. Rachini, Mouhamad (December 15, 2022). "ChatGPT a 'landmark event' for AI, but what does it mean for the future of human labor and disinformation?" (https://www.cbc.ca/radio/thecurrent/chatgpt-human-labour-and-fake-news-1.66 86210). *CBC*. Archived (https://web.archive.org/web/20230119175104/https://www.cbc.ca/radio/thecurrent/chatgpt-h uman-labour-and-fake-news-1.6686210) from the original on January 19, 2023. Retrieved December 18, 2022.

49. Pearl, Mike (December 3, 2022). "The ChatGPT chatbot from OpenAI is amazing, creative, and totally wrong" (http s://mashable.com/article/chatgpt-amazing-wrong). *Mashable*. Archived (https://web.archive.org/web/2022121002500 5/https://mashable.com/article/chatgpt-amazing-wrong) from the original on December 10, 2022. Retrieved December 5, 2022.

50. Vincent, James (December 1, 2022). "OpenAI's new chatbot can explain code and write sitcom scripts but is still easily tricked" (https://www.theverge.com/23488017/openai-chatbot-chatgpt-ai-examples-web-demo). *The Verge*. Archived (https://web.archive.org/web/20230117070943/https://www.theverge.com/23488017/openai-chatbot-chatgp t-ai-examples-web-demo) from the original on January 17, 2023. Retrieved December 18, 2022.

51. Mannix, Liam (December 13, 2022). "Is AI coming of age – or starting to reach its limits?" (https://www.smh.com.au/ national/is-ai-coming-of-age-or-starting-to-reach-its-limits-20221213-p5c5uy.html). *The Sydney Morning Herald*. Archived (https://web.archive.org/web/20230107013927/https://www.smh.com.au/national/is-ai-coming-of-age-or-sta rting-to-reach-its-limits-20221213-p5c5uy.html) from the original on January 7, 2023. Retrieved December 18, 2022.

52. Vincent, James (January 5, 2023). "Top AI conference bans use of ChatGPT and AI language tools to write academic papers" (https://www.theverge.com/2023/1/5/23540291/chatgpt-ai-writing-tool-banned-writing-academic-ic ml-paper). *The Verge*. Archived (https://web.archive.org/web/20230117131149/https://www.theverge.com/2023/1/5/2 3540291/chatgpt-ai-writing-tool-banned-writing-academic-icml-paper) from the original on January 17, 2023. Retrieved January 6, 2023.

53. Cowen, Tyler (December 6, 2022). "ChatGPT Could Make Democracy Even More Messy" (https://www.bloomberg.c om/opinion/articles/2022-12-06/chatgpt-ai-could-make-democracy-even-more-messy). *Bloomberg News*. Archived (https://web.archive.org/web/20221207105203/https://www.bloomberg.com/opinion/articles/2022-12-06/chatgpt-ai-c ould-make-democracy-even-more-messy) from the original on December 7, 2022. Retrieved December 6, 2022.

54. "The Guardian view on ChatGPT: an eerily good human impersonator" (https://www.theguardian.com/commentisfre e/2022/dec/08/the-guardian-view-on-chatgpt-an-eerily-good-human-impersonator). *The Guardian*. December 8, 2022. Archived (https://web.archive.org/web/20230116161202/https://www.theguardian.com/commentisfree/2022/de c/08/the-guardian-view-on-chatgpt-an-eerily-good-human-impersonator) from the original on January 16, 2023. Retrieved December 18, 2022.

55. " 'This song sucks': Nick Cave responds to ChatGPT song written in the style of Nick Cave" (https://www.theguardia n.com/music/2023/jan/17/this-song-sucks-nick-cave-responds-to-chatgpt-song-written-in-style-of-nick-cave). *the Guardian*. January 17, 2023. Archived (https://web.archive.org/web/20230118032435/https://www.theguardian.com/ music/2023/jan/17/this-song-sucks-nick-cave-responds-to-chatgpt-song-written-in-style-of-nick-cave) from the original on January 18, 2023. Retrieved January 17, 2023.

56. Cave, Nick (January 16, 2023). "I asked Chat GPT to write a song in the style of Nick Cave, and this is what it produced. What do you think?" (https://www.theredhandfiles.com/chat-gpt-what-do-you-think/). *The Red Hand Files*. Issue #218. Archived (https://web.archive.org/web/20230120080808/https://www.theredhandfiles.com/chat-gpt-what -do-you-think/) from the original on January 20, 2023. Retrieved January 20, 2023.

57. Sparrow, Jeff (January 20, 2023). "Are AI-generated songs a 'grotesque mockery' of humanity or simply an opportunity to make a new kind of music?" (https://www.theguardian.com/commentisfree/2023/jan/20/are-ai-generat ed-songs-a-grotesque-mockery-of-humanity-or-simply-an-opportunity-to-make-a-new-kind-of-music). *the Guardian*. Archived (https://web.archive.org/web/20230203051254/https://www.theguardian.com/commentisfree/2023/jan/20/ar e-ai-generated-songs-a-grotesque-mockery-of-humanity-or-simply-an-opportunity-to-make-a-new-kind-of-music) from the original on February 3, 2023. Retrieved January 20, 2023.

58. "Why ChatGPT can be dangerous for every internet user – Times of India" (https://timesofindia.indiatimes.com/gadg ets-news/why-chatgpt-can-be-dangerous-to-every-internet-user/articleshow/96393104.cms). *The Times of India*. December 21, 2022. Archived (https://web.archive.org/web/20230105031308/https://timesofindia.indiatimes.com/ga dgets-news/why-chatgpt-can-be-dangerous-to-every-internet-user/articleshow/96393104.cms) from the original on January 5, 2023. Retrieved January 5, 2023.

59. Bushard, Brian (January 10, 2023). "Fake Scientific Abstracts Written By ChatGPT Fooled Scientists, Study Finds" (https://www.forbes.com/sites/brianbushard/2023/01/10/fake-scientific-abstracts-written-by-chatgpt-fooled-scientists- study-finds/). *Forbes*. Archived (https://web.archive.org/web/20230203051254/https://www.forbes.com/sites/brianbus hard/2023/01/10/fake-scientific-abstracts-written-by-chatgpt-fooled-scientists-study-finds/) from the original on February 3, 2023. Retrieved January 30, 2023.

60. Stokel-Walker, Chris (January 18, 2023). "ChatGPT listed as author on research papers: many scientists disapprove" (https://www.nature.com/articles/d41586-023-00107-z). *Nature*. **613** (7945): 620–621. doi:10.1038/d41586-023-00107-z (https://doi.org/10.1038%2Fd41586-023-00107-z). PMID 36653617 (https://pubm ed.ncbi.nlm.nih.gov/36653617). S2CID 255969365 (https://api.semanticscholar.org/CorpusID:255969365). Archived (https://web.archive.org/web/20230130142004/https://www.nature.com/articles/d41586-023-00107-z) from the original on January 30, 2023. Retrieved January 30, 2023.

61. Marche, Stephen (December 6, 2022). "The College Essay Is Dead" (https://www.theatlantic.com/technology/archiv
e/2022/12/chatgpt-ai-writing-college-student-essays/672371/). *The Atlantic*. Archived (https://web.archive.org/web/2
0230124042209/https://www.theatlantic.com/technology/archive/2022/12/chatgpt-ai-writing-college-student-essays/6
72371/) from the original on January 24, 2023. Retrieved December 8, 2022.

62. Herman, Daniel (December 9, 2022). "The End of High-School English" (https://www.theatlantic.com/technology/arc
hive/2022/12/openai-chatgpt-writing-high-school-english-essay/672412/). *The Atlantic*. Archived (https://web.archive.
org/web/20230120053725/https://www.theatlantic.com/technology/archive/2022/12/openai-chatgpt-writing-high-scho
ol-english-essay/672412/) from the original on January 20, 2023. Retrieved December 12, 2022.

63. Stokel-Walker, Chris (December 9, 2022). "AI bot ChatGPT writes smart essays — should professors worry?" (http
s://www.nature.com/articles/d41586-022-04397-7). *Nature*. doi:10.1038/d41586-022-04397-7 (https://doi.org/10.103
8%2Fd41586-022-04397-7). PMID 36494443 (https://pubmed.ncbi.nlm.nih.gov/36494443). S2CID 254530623 (http
s://api.semanticscholar.org/CorpusID:254530623). Archived (https://web.archive.org/web/20230117192149/https://w
ww.nature.com/articles/d41586-022-04397-7) from the original on January 17, 2023. Retrieved December 19, 2022.

64. Bowman, Emma (December 19, 2022). "A new AI chatbot might do your homework for you. But it's still not an A+
student" (https://www.npr.org/2022/12/19/1143912956/chatgpt-ai-chatbot-homework-academia). *NPR*. Archived (http
s://web.archive.org/web/20230120095239/https://www.npr.org/2022/12/19/1143912956/chatgpt-ai-chatbot-homewor
k-academia/) from the original on January 20, 2023. Retrieved December 19, 2022.

65. Stern, Joanna (December 21, 2022). "ChatGPT Wrote My AP English Essay—and I Passed" (https://www.wsj.com/a
rticles/chatgpt-wrote-my-ap-english-essayand-i-passed-11671628256). *The Wall Street Journal*. Archived (https://we
b.archive.org/web/20230203051302/https://www.wsj.com/articles/chatgpt-wrote-my-ap-english-essayand-i-passed-1
1671628256) from the original on February 3, 2023. Retrieved December 21, 2022.

66. Mitchell, Alex (December 26, 2022). "Students using ChatGPT to cheat, professor warns" (https://nypost.com/2022/1
2/26/students-using-chatgpt-to-cheat-professor-warns/). *The New York Post*. Archived (https://web.archive.org/web/
20230203051258/https://nypost.com/2022/12/26/students-using-chatgpt-to-cheat-professor-warns/) from the original
on February 3, 2023. Retrieved December 30, 2022.

67. Allen, Mike (December 26, 2022). "Professor warns about chatbot cheating: "Expect a flood" " (https://www.axios.co
m/2022/12/26/chatbot-cheating-university-warning-chatgpt). *Axios*. Archived (https://web.archive.org/web/20230203
051357/https://www.axios.com/2022/12/26/chatbot-cheating-university-warning-chatgpt) from the original on
February 3, 2023. Retrieved December 30, 2022.

68. Rosalsky, Greg; Peaslee, Emma (January 17, 2023). "This 22-year-old is trying to save us from ChatGPT before it
changes writing forever" (https://www.npr.org/sections/money/2023/01/17/1149206188/this-22-year-old-is-trying-to-s
ave-us-from-chatgpt-before-it-changes-writing-for). *NPR*. Archived (https://web.archive.org/web/20230118055050/htt
ps://www.npr.org/sections/money/2023/01/17/1149206188/this-22-year-old-is-trying-to-save-us-from-chatgpt-before-i
t-changes-writing-for) from the original on January 18, 2023. Retrieved January 18, 2023. "On January 2nd, Edward
released his app. He named it GPTZero. It uses ChatGPT against itself, checking whether "there's zero involvement
or a lot of involvement" of the AI system in creating a given text. [...] Along these lines, one obvious application for
GPTZero is to help teachers identify whether their students are plagiarizing their essays from ChatGPT."

69. Ropek, Lucas (January 4, 2023). "Did ChatGPT Write That? A College Student Created an AI Essay Detector" (http
s://gizmodo.com/chatgpt-ai-essay-detector-college-princeton-edward-tian-1849946535). *Gizmodo*. Archived (https://
web.archive.org/web/20230104225814/https://gizmodo.com/chatgpt-ai-essay-detector-college-princeton-edward-tia
n-1849946535) from the original on January 4, 2023. Retrieved January 4, 2023.

70. Tran, Tony Ho (January 4, 2023). "A College Kid Built an App That Sniffs Out Text Penned by AI" (https://www.thedail
ybeast.com/princeton-student-edward-tian-built-gptzero-to-detect-ai-written-essays). *The Daily Beast*. Archived (http
s://web.archive.org/web/20230106162856/https://www.thedailybeast.com/princeton-student-edward-tian-built-gptzer
o-to-detect-ai-written-essays) from the original on January 6, 2023. Retrieved January 6, 2023.

71. Cole, Samantha (January 4, 2023). "NYC Bans Students and Teachers from Using ChatGPT" (https://www.vice.co
m/en/article/y3p9jx/nyc-bans-students-and-teachers-from-using-chatgpt). *www.vice.com*. Archived (https://web.archi
ve.org/web/20230105025338/https://www.vice.com/en/article/y3p9jx/nyc-bans-students-and-teachers-from-using-ch
atgpt) from the original on January 5, 2023. Retrieved January 5, 2023.

72. Ropek, Lucas (January 4, 2023). "New York City Schools Ban ChatGPT to Head Off a Cheating Epidemic" (https://gi
zmodo.com/new-york-city-schools-chatgpt-ban-cheating-essay-openai-1849949384). *Gizmodo*. Archived (https://we
b.archive.org/web/20230106162900/https://gizmodo.com/new-york-city-schools-chatgpt-ban-cheating-essay-openai-
1849949384) from the original on January 6, 2023. Retrieved January 6, 2023.

73. Kelly, Samantha Murphy (January 26, 2023). "ChatGPT passes exams from law and business schools | CNN
Business" (https://www.cnn.com/2023/01/26/tech/chatgpt-passes-exams/index.html). *CNN*. Archived (https://web.arc
hive.org/web/20230202083919/https://www.cnn.com/2023/01/26/tech/chatgpt-passes-exams/index.html) from the
original on February 2, 2023. Retrieved February 3, 2023.

74. Perrigo, Billy (January 18, 2023). "Exclusive: OpenAI Used Kenyan Workers on Less Than $2 Per Hour to Make ChatGPT Less Toxic" (https://time.com/6247678/openai-chatgpt-kenya-workers/). *The Times*. Archived (https://web.archive.org/web/20230119152814/https://time.com/6247678/openai-chatgpt-kenya-workers/) from the original on January 19, 2023. Retrieved January 19, 2023. "*One Sama worker tasked with reading and labeling text for OpenAI told TIME he suffered from recurring visions after reading a graphic description of a man having sex with a dog in the presence of a young child. "That was torture," he said.*"

75. Vincent, James (December 1, 2022). "OpenAI's new chatbot can explain code and write sitcom scripts but is still easily tricked" (https://www.theverge.com/23488017/openai-chatbot-chatgpt-ai-examples-web-demo). *The Verge*. Archived (https://web.archive.org/web/20230117070943/https://www.theverge.com/23488017/openai-chatbot-chatgpt-ai-examples-web-demo) from the original on January 17, 2023. Retrieved January 6, 2023.

76. Woods, Allan (December 10, 2022). "I wrote a story about ChatGPT's AI. Then I dared it to write a better one" (https://www.thestar.com/news/canada/2022/12/10/i-wrote-a-story-about-chatgpts-ai-then-i-dared-it-to-write-a-better-one.html). *Toronto Star*. Archived (https://web.archive.org/web/20230106040655/https://www.thestar.com/news/canada/2022/12/10/i-wrote-a-story-about-chatgpts-ai-then-i-dared-it-to-write-a-better-one.html) from the original on January 6, 2023. Retrieved January 6, 2023.

77. Rosenblatt, Kalhan (December 2, 2022). "An AI chatbot went viral. Some say it's better than Google; others worry it's problematic" (https://www.nbcnews.com/tech/tech-news/chatgpt-ai-chatbot-viral-rcna59628). *NBC News*. Archived (https://web.archive.org/web/20230203074007/https://www.nbcnews.com/tech/tech-news/chatgpt-ai-chatbot-viral-rcna59628) from the original on February 3, 2023. Retrieved January 6, 2023.

External links

- Official website (https://chat.openai.com/chat) ✏
- White paper (https://arxiv.org/abs/2203.02155) for InstructGPT, ChatGPT's predecessor
- ChatGPT Wrote My AP English Essay—and I Passed (https://www.wsj.com/articles/chatgpt-wrote-my-ap-english-essayand-i-passed-11671628256)

Retrieved from "https://en.wikipedia.org/w/index.php?title=ChatGPT&oldid=1137253601"