

Exploring the Pros and Cons of ChatGPT

ChatGPT, created by OpenAI, is a chatbot artificial intelligence (AI) language model that utilizes a deep neural network to answer questions in natural language. What does that really mean? The chatbot has been trained to understand and answer questions in everyday language based on a complex database of information and statistical probability.¹ Many people may have already used AI chatbots when trying to contact virtual customer service on a website or had one pop up asking if it could help as soon as they visited a site. What makes ChatGPT different is its complex capabilities. When prompted, it can write papers, poems, songs, computer code, answer simple or complicated questions, and even check grammar.

Other companies like Google and Meta have developed their own advanced AI language models of this type, but OpenAI has been leading the market. In January of 2023, ChatGPT reached over 100 million users a month and 1 billion visitors to the OpenAI website.² With the interest its release has garnered, the ramifications of this technology are just being explored.³

Looking at ChatGPT through an educational lens reveals the helper capabilities of the tool. It can check the grammar of a student's paper, create outlines and lesson plans, suggest word usage, create quizzes, act as a tutor, and answer questions in conversational language.

When researching a topic, it can sort through material and sum up the results in a narrative. It goes beyond the capabilities of a search engine that can only provide links to sites. In fact, it is important to note that it is not a search engine, as it does not search the Internet. It trained on a dataset taken from Common Crawl, a nonprofit that scrapes text from websites and offers it for free download, Wikipedia, and other web texts, all from 2021.⁴ The ChatGPT Plus paid subscription offered web searching capabilities with a plug-in powered by Bing, but it has been temporarily disabled due to erroneously providing the full text of websites and bypassing paywalls.^{5,6}

With all the positives of the chatbot come equally disturbing negatives. One of the biggest challenges it poses in the academic world is plagiarism and copyright violation. With the capability to draft papers on demand, students can order up a completed assignment. Plagiarism detectors already exist, but are they complex enough to recognize the use of the chatbot? There is also the possibility of ChatGPT plagiarizing from its own datasets. It does not cite sources and creates fake citations.⁷ Several lawsuits filed in 2023 further allege misdeeds such as the misuse of personal information found on the Internet and knowingly training the chatbot from text datasets that contained pirated books.⁸

1 "ChatGPT." Introducing ChatGPT, November 30, 2022. <https://openai.com/product/chatgpt>.

2 Duarte, Fabio. "Number of ChatGPT Users (2023)." Exploding Topics, May 16, 2023. <https://explodingtopics.com/blog/chatgpt-users>.

3 Malhotra, Tanya. "Meet Vicuna: An Open-Source Chatbot That Achieves 90% ChatGPT Quality and Is Based on LLaMA-13B." MarkTechPost, April 2, 2023. <https://www.marktechpost.com/2023/04/02/meet-vicuna-an-open-source-chatbot-that-achieves-90-chatgpt-quality-and-is-based-on-llama-13b/>.

4 Brown, Tom B., Benjamin Mann, Nick Ryder, and Melanie Subbiah. "Language Models Are Few-Shot Learners." Paper presented at Advances in Neural Information Processing Systems 33: Annual Conference on Neural Information Processing Systems, virtual, December 6-12, 2020. https://proceedings.neurips.cc/paper_files/paper/2020/file/1457c0d6bfc4967418bfb8ac142f64a-Paper.pdf

5 Rudra, Suchi. "ChatGPT in Education: The Pros, Cons and Unknowns of Generative AI." EdTech: Focus K-12, March 30, 2023. <https://edtechmagazine.com/k12/article/2023/03/chatgpt-in-education-generative-ai-perfcon>.

6 Southern, Matt. "ChatGPT Disables 'Browse With Bing' Amid Legal Challenges." *Search Engine Journal*. July 4, 2023. <https://www.searchenginejournal.com/chatgpt-disables-browse-with-bing/490775/#close>.

7 Welbourn, Aaron. "ChatGPT and Fake Citations." Duke Universities Libraries: News, Events, and Exhibits, March 9, 2023. <https://blogs.library.duke.edu/blog/2023/03/09/chatgpt-and-fake-citations/>.

8 Southern, Matt. "ChatGPT Creator Faces Multiple Lawsuits Over Copyright & Privacy Violations." *Search Engine Journal*. July 3, 2023. <https://www.searchenginejournal.com/chatgpt-creator-faces-multiple-lawsuits-over-copyright-privacy-violations/490686/>



“Artificial Intelligence Brain Think” by gerald on Pixabay

Another criticism of the tool is that the language sounds unnatural, but that does make it easier to tell when something is not authentically written. The more the chatbot is used, the more it learns. Will it get to the point that what it produces will be undetectable as written by a machine? Of course, AI detectors are also being developed specifically to combat this issue, but will they be developed fast enough?⁹

The information that the chatbot gives is also subject to the bias of the training data and by the programmers who created it. Recent research published by the Brookings Institution showed that when asked specific questions, ChatGPT responded with “left leaning” answers and some political bias. It also was repeatedly inconsistent in some of its responses.¹⁰ OpenAI hired low wage workers to moderate and filter content that was deemed harmful or inappropriate. Deliberate decisions were made on what content was kept and what was discarded.¹¹ The extent to which the data was screened for inaccuracies is unknown and ChatGPT has been known to confidently give factually wrong answers.

With ChatGPT’s aptitude for answering questions, could it replace librarians? When asked, here is what it said, “While ChatGPT and other AI language models have advanced capabilities in processing and retriev-

ing information, it is unlikely that they will completely replace librarians. Librarians offer a range of specialized skills and expertise that go beyond simple information retrieval. They possess deep knowledge of various resources, understand research methodologies, and provide personalized assistance to patrons.” This might be one of the questions ChatGPT has been able to answer correctly.

As generative AI chatbots like ChatGPT continue to be used, it will be interesting to see how they affect the educational realm. It will also be interesting to see how the question of data usage for learning models as fair use or copyright infringement is answered. Without large bodies of textual data to learn from, the models would be severely limited. Part of their appeal is the ability to rapidly process data to learn from it and then be able to use it to effectively communicate in a natural language environment. Without that basis of knowledge, there would be severe limitations to its ability to understand context and provide accurate answers. As some of these issues are decided through legal channels, the future of chatbots may be severely hindered.

9 Mucharraz y Cano, Yvette, Ricardo Herrera Martinez, and Francesco Venuti. “ChatGPT and AI Text Generators: Should Academia Adapt or Resist?” Harvard Business Publishing Education, February 1, 2023. <https://hbsp.harvard.edu/inspiring-minds/chatgpt-and-ai-text-generators-should-academia-adapt-or-resist>.

10 Baum, Jeremy, and John Vellasenor. “The Politics of AI: ChatGPT and Political Bias.” Commentary-Techtank, May 8, 2023. <https://www.brookings.edu/blog/techtank/2023/05/08/the-politics-of-ai-chatgpt-and-political-bias/>.

11 Paul, Andrew. “Building ChatGPT’s AI Content Filters Devastated Workers’ Mental Health, According to New Report.” *Popular Science*, January 19, 2023. <https://www.popsci.com/technology/chatgpt-sama-content-filter-labor/>.