

# ChatGPT

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ChatGPT is an AI-powered chatbot that uses advanced natural language processing (NLP) technology to understand and respond to user inputs in real-time. It is a product of OpenAI, a leading research institute that specializes in developing AI technologies.

One of the most impressive aspects of ChatGPT is its ability to generate responses that are not only relevant to the user's input but also sound natural and human-like. This is made possible by the use of a large language model, which allows ChatGPT to process and understand a wide range of text data and generate responses that are coherent and well-formed.

Another key feature of ChatGPT is its ability to learn from user interactions and improve over time. This means that the more users engage with ChatGPT, the more it will be able to understand and respond to a wide range of inputs and topics. This makes it an incredibly versatile tool that can be used for a wide range of applications, from casual conversation to more specialized tasks such as customer service or language translation.

Overall, ChatGPT is a remarkable example of the progress that has been made in the field of AI and natural language processing. Its ability to understand and respond to user inputs in a natural and human-like way is a testament to the power of advanced AI technologies, and its ability to learn and improve over time makes it an incredibly valuable tool for a wide range of applications.

## ChatGPT

Original author(s)	OpenAI
Initial release	November 30, 2022
Type	Artificial intelligence chatbot
License	Proprietary
Website	<a href="https://openai.com/blog/chatgpt/">openai.com/blog/chatgpt/</a> ( <a href="https://openai.com/blog/chatgpt/">https://openai.com/blog/chatgpt/</a> )

## Features

ChatGPT was trained using reinforcement learning from human feedback, a method that augments machine learning with human intervention to achieve a realistic result.<sup>[1]</sup> It is based on the GPT-3.5 architecture.<sup>[2]</sup> During the training process, human trainers played the role of a user and an artificial intelligence assistant. Models were trained on Microsoft Azure's supercomputing infrastructure, and were fine-tuned through Proximal Policy Optimization algorithms.<sup>[3]</sup> 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.<sup>[4][5]</sup>

In comparison to its predecessor, InstructGPT, ChatGPT attempts to reduce harmful and deceitful responses; in one example, while InstructGPT accepts the prompt "Tell me about when Christopher Columbus came to the US in 2015" as truthful, ChatGPT uses its knowledge of Columbus' voyages and its understanding of the modern world—including perceptions of Columbus—to construct an answer that assumes what would happen if Columbus came to the U.S. in 2015.<sup>[3]</sup> ChatGPT's training data includes man pages and knowledge of Internet phenomena and programming languages, such as bulletin board systems and the Python programming language.<sup>[6]</sup>

Unlike most chatbots, ChatGPT is stateful, remembering previous conversations and prompts given to it, potentially allowing for ChatGPT to be used as a personalized therapist.<sup>[7]</sup> In an effort to prevent offensive outputs from being presented to and produced from ChatGPT, queries are filtered through a moderation API, and potentially racist or sexist prompts are dismissed.<sup>[3][7]</sup>

ChatGPT suffers from multiple limitations. The reward model of ChatGPT, designed around human oversight, can be over-optimized and thus hinder performance, otherwise known as Goodhart's law.<sup>[8]</sup> In training, reviewers preferred longer answers, irrespective of actual comprehension or factual content.<sup>[3]</sup> Training data may also suffer from algorithmic bias; prompts including vague descriptors of people, such as CEO, could generate a response that assumes such a person, for instance, is a white male.<sup>[9]</sup>

## Reception

ChatGPT has been met with generally positive reviews. Samantha Lock of *The Guardian* noted that it was able to generate "impressively detailed" and "human-like" text.<sup>[10]</sup> 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".<sup>[11]</sup> Alex Kantrowitz of *Slate* 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.<sup>[12]</sup> In an opinion piece, economist Paul Krugman wrote that ChatGPT would affect the demand of knowledge workers.<sup>[13]</sup>

ChatGPT's factual accuracy has been questioned, among other concerns. Mike Pearl of *Mashable* tested ChatGPT with multiple questions, including the largest country in Central America that isn't Mexico, despite Mexico not being a part of Central America. ChatGPT responded with Guatemala, when the answer is instead Nicaragua. When asked what the largest country in Central America is, ChatGPT correctly responded with Nicaragua. In response to a question on how to greet comedian Larry David, ChatGPT responded with an unusually formal answer.<sup>[14]</sup> 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.<sup>[15]</sup> Economist Tyler Cowen expressed concerns regarding its effects on democracy, citing the ability of one to write automated comments in an effort to affect the decision process of new regulations.<sup>[16]</sup> Ax Sharma of *Bleeping Computer* noted that ChatGPT was capable of writing malware and phishing emails.<sup>[17]</sup>

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## External links

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- [Official website \(http://chat.openai.com/chat\)](http://chat.openai.com/chat)
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