

Preface

ChatGPT (Chat Generative Pre-trained Transformer) is a large language model-based chatbot developed by OpenAI and launched on November 30, 2022, that enables users to refine and steer a conversation towards a desired length, format, style, level of detail, and language. Successive prompts and replies, known as prompt engineering, are considered at each conversation stage as a context.

ChatGPT is built upon either GPT-3.5 or GPT-4, both of which are members of OpenAI's proprietary series of generative pre-trained transformer (GPT) models, based on the transformer architecture developed by Google—and is fine-tuned for conversational applications using a combination of supervised and reinforcement learning techniques. ChatGPT was released as a freely available research preview, but due to its popularity, OpenAI now operates the service on a freemium model. It allows users on its free tier to access the GPT-3.5-based version. In contrast, the more advanced GPT-4-based version and priority access to newer features are provided to paid subscribers under the commercial name "ChatGPT Plus".

By January 2023, it had become what was then the fastest-growing consumer software application in history, gaining over 100 million users and contributing to OpenAI's valuation growing to \$29 billion. ChatGPT's release spurred the development of competing

products, including Bard, Ernie Bot, LLaMA, Claude, and Grok. Microsoft launched its Bing Chat based on OpenAI's GPT-4. It raised concern among some observers over the potential of ChatGPT and similar programs to displace or atrophy human intelligence, enable plagiarism, or fuel misinformation. ⁱ

In the present book, twelve typical literatures about ChatGPT published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on ChatGPT. We hope this book can demonstrate advances in ChatGPT as well as give references to the researchers, students and other related people.

ⁱ <https://en.wikipedia.org/wiki/ChatGPT>