

Getting the Most from ChatGPT

What is ChatGPT, and what can it really do?

This article was written in March of 2023 (ChatGPT version 3.5). The state of AI is changing rapidly.

ChatGPT is an AI (artificial intelligence) chatbot that emulates human dialog using an intelligent text prediction engine trained on terabytes of text, and it uses machine learning techniques to improve its responses over time. An AI like ChatGPT is only narrowly intelligent. It does an exceptional job interpreting and emulating speech – but it doesn't understand what it is saying, and it tends to fabricate information in the absence of data.

The body of text that ChatGPT is trained on is human-generated text, replete with errors and biases which may, at times, appear in its output. The text is used for training the text prediction ability of the AI, not for increasing a body of knowledge.

With careful and informed prompting, ChatGPT can generate accurate, well-written output. Stories of ChatGPT scoring a “B” on an essay exam may be true, but when responding to questions at the higher level of Bloom's Taxonomy that require analysis, evaluation, and creation, the student-created prompt to ChatGPT must demonstrate adequate knowledge of the subject to achieve output that will stand up to scrutiny. In effect, the student who uses ChatGPT to create “B” level output is most likely demonstrating “B” level knowledge in their crafting of the prompt – though they will be making use of ChatGPT's language and writing skills for the final product.

In short, the quality of ChatGPT's output correlates to the quality of its input.

Prompt Specificity

The output of ChatGPT is greatly affected by the details that are included in the prompt. We can use guidelines to keep the response on a narrow path, or guardrails to keep the response from deviating to unwanted topics.

If I ask ChatGPT to tell me about the sky, it will return three or four paragraphs about the sky, it's color, day and night, and the weather.

If I ask ChatGPT to tell me about what I can see in the night sky in the Winter, it is much more specific and detailed in its response. It calls out celestial objects only visible in Fall and Winter in the Northern Hemisphere (a bias, perhaps, since the majority of Earth's population lives in the Northern Hemisphere), like the constellation Orion, Sirius (the Dog Star), the constellation Taurus, and the Geminids and Quadrantids meteor showers in December and January. If I instead specify the Southern Hemisphere in my prompt, ChatGPT will return information on the

Southern Cross, the Megellanic Clouds, and other objects visible only in the Southern Hemisphere.

All of ChatGPT's responses include facts that are easily searchable, and they seem to be accurate. This is not always the case, however. ChatGPT's response does not currently involve a typical internet search for information. It will often respond based on its prediction of what it should say, rather than relaying available facts.

Prompt Sequencing

One of the interesting things about ChatGPT is its ability to remember dialog from earlier in a conversation and build from it. This not only makes our dialog with the AI more engaging and realistic, but it also allows us to scaffold instructions to it and make iterative revisions to a sample of writing or code.

For instance, we can "prime" ChatGPT with a set of specific instructions on what to do when it receives a sample of text, using plain English. You can prompt ChatGPT like so:

SK: I have a text to revise. Generate a table of 10 suggestions for revision related to the text, with numbers 1-10 in the left column, the suggestions in the middle column, and a change log column on the right. Acknowledge with, "understood" if you understand the task. Do not create a table, yet. I will provide the text, next.

ChatGPT: Understood. Please provide the text.

ChatGPT has now been given instructions that it will execute once it has received the sample text. Text can be provided by pasting text into the input prompt, or by providing a link to a blog post or other piece of writing, online. While there is no hard limit to the length of a text for analysis, the AI will perform better with shorter samples. Longer samples may make it difficult for the system to parse information, and reduce the quality of output, or even return an error.

Here is the text I asked ChatGPT to evaluate (a short capsule film review), and the response. The text was copied from a document and pasted into the ChatGPT dialog box.

SK: William H. Macy is one of the most underrated actors working today - and he proves that in The Wool Cap. Macy stars as Gigot, the gruff, mute superintendent of a broken-down urban apartment building. He gives a truly compelling performance without ever speaking a word.

When he unwittingly becomes the guardian of a street-smart 12-year-old girl, Lou (Keke Palmer), whose mother has disappeared in a drug induced walkabout, he learns more about himself and the power of love and forgiveness than he ever learned before. Shades of Paper Moon, the film (co-written by Macy) is based on the story "Gigot" by Jackie Gleason. The film was made for cable, appearing on TNT as a Johnson & Johnson Spotlight Presentation.

Despite a few overly saccharine moments, this is a powerful film. It will induce both tears and laughter as it delivers its message about the resilience of the human spirit.

Aside from Macy's excellent performance, you'll take note of the young Palmer's impressive performance as well. Don Rickles provides some nice color as a resident in Gigot's building. The cast is well rounded out with the likes of Ned Beatty and Catherine O'Hara.

An excellent little film. See it.

ChatGPT analyzed the above text and returned output as requested in the original instructions, earlier in the dialog:

ChatGPT:

Based on the information provided, here are the ten suggestions for revision:

#	Suggestions	Change Log
1	<i>Specify the year of the film's release.</i>	
2	<i>Provide a more descriptive summary of the story.</i>	
3	<i>Remove the word "truly" as it can come across as unnecessary hyperbole.</i>	
4	<i>Consider using a different phrase than "unwittingly becomes" to describe Gigot's role as Lou's guardian.</i>	
5	<i>Expand on what is meant by "shades of Paper Moon."</i>	
6	<i>Provide more context around the cable movie's format and release.</i>	
7	<i>Specify what type of moments are "overly saccharine" and consider suggesting ways to improve them.</i>	
8	<i>Provide more details about the young Palmer's impressive performance.</i>	
9	<i>Expand on what is meant by "nice color" in regard to Don Rickles' performance.</i>	
10	<i>Consider including a brief synopsis of Ned Beatty and Catherine O'Hara's characters and performances.</i>	

Making Revisions and Correcting Output

We can specify revisions associated with each number and ask ChatGPT to implement them and update the changes in both the text and the change log.

It is important to understand ChatGPT's capabilities, here. I must provide guidance with the request. In the absence of guidance or guardrails, ChatGPT may fabricate information, and unless we have subject knowledge, we will not know the difference.

SK: fix numbers 9 and 10 by adding information about those characters.

ChatGPT: Don Rickles provides nice color as a resident in Gigot's building and plays the character named "Sidney". The cast is well-rounded out with the likes of Ned Beatty, who plays "Moe" a resident in the building, and Catherine O'Hara, who plays "Gina" Gigot's former love interest.

And it will update the table, like so:

9	<i>Expand on Don Rickles' performance and his character in the movie.</i>	<i>Added information on Don Rickles' character in the movie</i>
10	<i>Provide more details about Ned Beatty and Catherine O'Hara's characters and performance in the movie.</i>	<i>Added information on Ned Beatty and Catherine O'Hara's characters and performances in the movie.</i>

The problems: ChatGPT has fabricated the information in the text, giving the characters new names and roles, and it changed the suggestions in the table. In fact, in a later revision of the text, it changed this passage again:

ChatGPT: Don Rickles provides some nice color as Phil, a resident in Gigot's building. Ned Beatty delivers a memorable performance as Ed, another resident who befriends Gigot. Catherine O'Hara rounds out the strong supporting cast as Nurse Frances, a character who shows kindness to Gigot and Lou.

Here is the correct cast of characters:

Ned Beatty: Mr. Gigot, estranged father to Charlie. He does not live in the building.

Catherine O'Hara: Gloria, a middle-aged prostitute, and friend to Charlie

Don Rickles: Ira, a tenant in the building.

If we feed ChatGPT the correct information, it will use that information in the revisions.

SK: Ned Beatty plays Charlie's estranged father. Please correct this and display the revised text.

ChatGPT: Beatty gives a compelling performance as Charlie's estranged father, who reconnects with him after many years apart.

In fact, Charlie's estranged father rejected attempts at reconciliation. The idea that the characters reconnected was another fabrication. I can ask ChatGPT to revise with very specific text:

SK: Revise the end of the second paragraph, replacing, "who reconnects with him after many years apart" to "who rejects Charlie's attempts to connect with him after many years apart."

ChatGPT: Beatty gives a compelling performance as Charlie's estranged father, who rejects Charlie's attempts to connect with him after many years apart.

If we are careful to provide details for each revision, ChatGPT will generally follow instructions, but even on this short text it will sometimes lose track of revisions made or make additional revisions that were not requested.

Conclusion

ChatGPT can analyze and correct writing, but it has some flaws as a revision tool: while it has an understanding for dialog and can suggest simple revisions for grammar or clarity, it has no real understanding of the concepts contained in its writing.

As a predictive text engine, ChatGPT can generate realistic sounding text, and it can generate somewhat functional code. This achievement is made possible by training on a great amount of existing text to enable predictions of what words should come next based on its training, not based on real analysis or understanding of the context of the prompt.