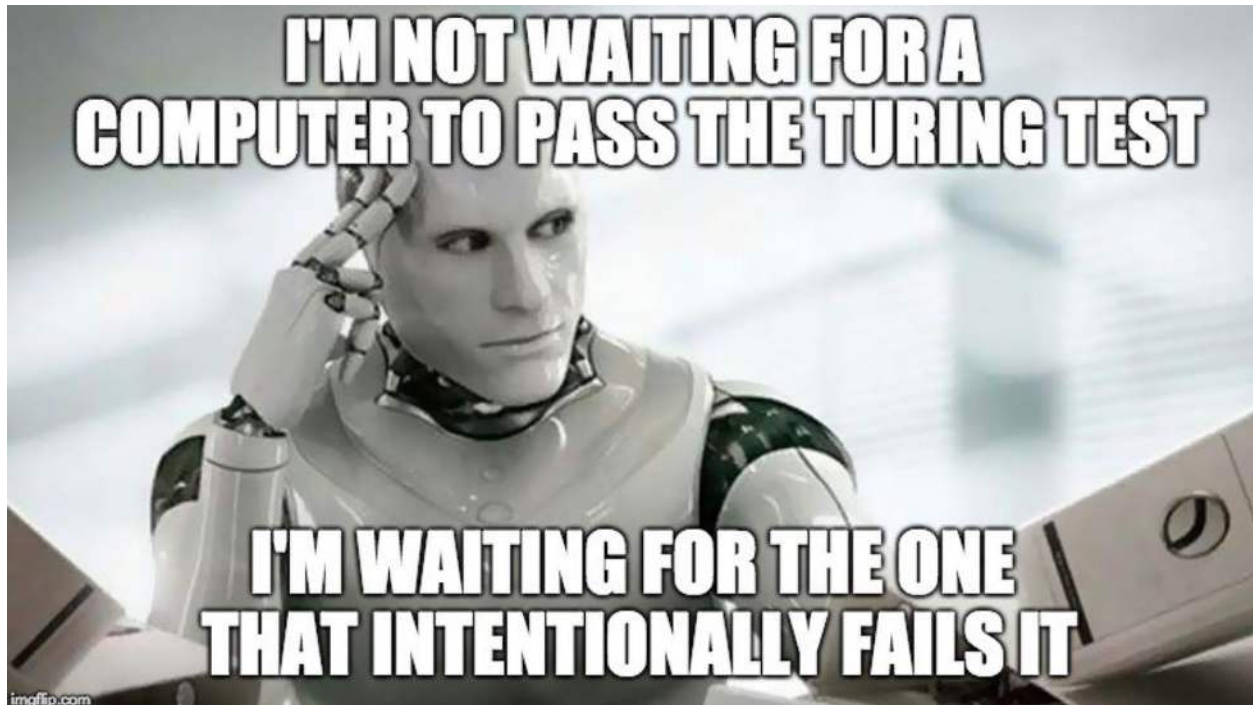


An Evaluation of the Limitations and Uses of *ChatGPT*

By George Yates, 13 March 2023, Version 1.0



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Introduction

It is literally impossible to keep current with the deluge of literature on just *ChatGPT*, not to mention the entire fields of chatbots and AI. Given the fluid nature of *ChatGPT*, its responses can change while articles are being written about it.

There are four primary means to learn about *ChatGPT*:

1. Go to the source at OpenAI and read their documentation: <https://openai.com/>
2. Query *ChatGPT* about itself.
3. Read articles from arXiv: <https://arxiv.org/>
Searching the string '*ChatGPT*' yielded 101 articles on 07 March, 104 on 09 March and 110 on 10 March 2023; the trend is clear.
arXiv is hosted by Cornell University and is an open-access archive for scholarly articles in the fields of physics, mathematics, computer science, quantitative biology, quantitative finance, statistics, electrical engineering and systems science, and economics. Materials on this site are not peer-reviewed by arXiv.
4. Troll the internet with browsers such as Firefox. This approach requires some judgement, since results vary from trusted technical sources to blog rantings. A subset of web searches are YouTube videos; especially the ones produced by OpenAI.

ChatGPT can (is programmed to) understand the overall context of a query or conversation and generates specific responses which are relevant to the topic. It can learn from previous conversations and utilizes these conversations to provide relevant responses to future queries based on this learning. It improves over time and becomes a more effective chatbot.

It has applications in various industries, including education, social media, healthcare, software engineering, customer service, and financial services, among many others. The references were selected to provide useful supplemental information. For example, fun fact, Elon Musk was one of the founders of OpenAI, see reference 1 for more on the history, philosophy and evolution of OpenAI.

This article discusses some limitations and a few uses of *ChatGPT* in the hope of improving the results obtained by the casual user.

Limitations of *ChatGPT*

As with any complex tool, the operator requires proficiency in its use. In the mawkish movie *Magnum Force*, inspector Harry Callahan said, "*A man's got to know his limitations*".

It is important to keep in mind that *ChatGPT* is currently still in the process of training and improving. OpenAI recommends that all content generated by *ChatGPT* should be reviewed by a human, listing this as a best practice.

“Wherever possible, we recommend having a human review outputs before they are used in practice.

This is especially critical in high-stakes domains, and for code generation. Humans should be aware of the limitations of the system, and have access to any information needed to verify the outputs (for example, if the application summarizes notes, a human should have easy access to the original notes to refer back).”

It’s clear that there are many issues with *ChatGPT* that make it unfit for unvetted content generation.

For one thing, *ChatGPT* has a tendency to lie. [OpenAI published a warning](#) about incorrect output: “ChatGPT sometimes writes plausible sounding but incorrect or nonsensical answers.”

Reference 6 notes that “When answering a question that requires professional knowledge from a particular field, *ChatGPT* may fabricate facts in order to give an answer...

For example, in legal questions, *ChatGPT* may invent some non-existent legal provisions to answer the question.

...Additionally, when a user poses a question that has no existing answer, *ChatGPT* may also fabricate facts in order to provide a plausible sounding response.

Another criticism is that *ChatGPT* contains biases and fails to create content that feels natural or contains genuine insights. Further, its inability to feel or author original thoughts makes it a poor choice for generating artistic expressions. Currently, this criticism is mostly true; however, for your consideration:



Users should construct detailed queries in order to generate content that is better than the default content it tends to output; refer to references 2, 6, 7 and 8 for additional guidance.

Also, human review of machine-generated content is not always enough, because *ChatGPT* content is designed to appear correct, even when it's not. That means it's important that human reviewers are subject-matter experts who can discern between correct and incorrect content on a specific topic.

Some additional criticisms of *ChatGPT*, mostly from the media, artists, and musicians, boils down to the fact that *ChatGPT* is not human. These criticisms are often misplaced due to a lack of understanding of *ChatGPT* actual design parameters.

If you only read one of the references it should be Reference 2, *ChatGPT_EA-Technical-Brief_RK_Feb-14-2023.pdf*. Beginning on p. 13 the following limitation are mentioned:

1. OpenAI admits that *ChatGPT* can produce harmful and biased answers, not to mention its ability to mix fact with fiction. With such a new technology, it's difficult to predict what other problems will arise. So, until then, enjoy exploring *ChatGPT* and be careful not to believe everything it says.
2. If there is enough information available, the generator will fulfill the commands with accurate details. Otherwise, there is potential for *ChatGPT* to begin filling in gaps with incorrect data. OpenAI notes that these instances are rare. The brand also notes that *ChatGPT* also currently has "limited knowledge of world events after 2021.
3. Everyone is talking about the new AI text generator *ChatGPT*. However, as the hype subsided, many people started to notice that it produced generic, synthetic content.
4. Q: Is *ChatGPT* reliable? A: Not really. The comparable model by DeepMind had the caveat: 'While we put extensive thought into our initial rule set, we emphasize that they are not comprehensive and require substantial expansion and refinement before real-world usage.' Likewise, OpenAI now says: 'We believe in shipping early and often, with the hope of learning how to make a really useful and reliable AI through real-world experience and feedback. Correspondingly important to realize we're not there yet — *ChatGPT* is not yet ready to be relied on for anything important!'
5. While they can create content that is immensely similar to the data it is trained on, large language models often lack the error correction tools and contextual knowledge that make up actual expertise. And amid the astonished reactions to *ChatGPT*, the limitations of the tool are often lost.
6. There's a dilemma baked into the technology here. People are demanding regulations for self-driving taxis, and they're waking up to the racial inequality that public health algorithms can bring. The software managing waiting lists for kidney transplants, for example, discriminated against African Americans. The problem

isn't that the algorithms are evil. It's that they rely on data that fail to account for the needs of everyone and that they don't learn rapidly enough to correct underlying problems of inequity and violations of privacy.

7. According to the BBC, as of December 2022 *ChatGPT* is not allowed to "express political opinions or engage in political activism". 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.
8. 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.

Reference 6, *How Close is ChatGPT to Human Experts? Comparison Corpus, Evaluation, and Detection*^[6], discovered patterns in *ChatGPT* content that makes it less suitable for critical applications.

- *ChatGPT* is too literal, which causes the answers to sometimes miss the mark because the AI overlooks the actual topic. Humans can answer the hidden meaning under the question based on their own common sense and knowledge, but *ChatGPT* relies on the literal words of the question.
- *ChatGPT* contains A Bias Towards Being Neutral. It's a bias in the output that can appear helpful but isn't always.
- *ChatGPT* is biased to be formal. Humans, on the other hand, tend to answer questions with a more colloquial style, using everyday language and slang – the opposite of formal.

Another area of concern is the intentional use of *ChatGPT* for fraud and misinformation.

- The potential for hackers to exploit this technology for phishing and other malicious attacks. Hackers can use AI-powered chatbots such as *ChatGPT* to write persuasive phishing emails or messages, making them more challenging to detect and prevent. These chatbots can mimic the speaking or writing style and appear to be from a legitimate source, tricking users into giving away sensitive information or downloading malware.
- A chatbot's capabilities to craft malware codes and launch cyber-attacks could also facilitate the spread of malware faster to many users, eventually making it difficult to identify and stop the attack.
- It can be manipulated to violate the policies and restrictions that have been enforced on it by using cleverly thought responses.

Yet another concern is the misuse regarding privacy issues. The use of *ChatGPT* in customer service raises concerns about data privacy and the collection, storage, and use of personal information. The collection and storage of details such as name, email address, etc., can greatly aid hackers in launching cyberattacks.

Usage of *ChatGPT*

The limitations and cautions described above are not a deterrent but a guide to the proper use of *ChatGPT*. For the user to have confidence in the results of a query there are two main criteria:

1. The user should be knowledgeable about the topic or have access to an expert.
2. The query has been well crafted. Recall that it is possible to iterate and refine the query.

Some of the useful features of *ChatGPT* are:

- It understands overall context of a query or a conversation and generate specific responses which are relevant to the topic.
- It has the ability to learn from previous conversations and utilizes the same to provide relevant responses to any future queries based on its learning.
- It continuously improves over time and becomes a more effective chatbot.
- It can be used as a language learning tool.

ChatGPT has been programmed to understand and respond to multiple languages, making it an ideal tool for businesses that operate internationally. Here is a simple example.

Translate "Now is the time for all good men to come to the aid of their country" into German.

"Jetzt ist die Zeit gekommen, dass alle guten Männer ihrer Nation zu Hilfe kommen"

Translate "Jetzt ist die Zeit gekommen, dass alle guten Männer ihrer Nation zu Hilfe kommen" into French.

"Maintenant est venu le temps où tous les bons hommes doivent venir en aide à leur nation."

Translate "Maintenant est venu le temps où tous les bons hommes doivent venir en aide à leur nation." into Italian

"Ora è giunto il momento in cui tutti gli uomini buoni devono venire in aiuto alla loro nazione."

Translate "Ora è giunto il momento in cui tutti gli uomini buoni devono venire in aiuto alla loro nazione." into English.

The translation of "Ora è giunto il momento in cui tutti gli uomini buoni devono venire in aiuto alla loro nazione." into English is: "Now is the time for all good men to come to the aid of their country."

Chat GPT offers fast and personalized answers. With properly constructed queries, it usually returns accurate detailed answers to your questions. When you search for

something on Google many different websites appear in rows, that require further selections, but with *ChatGPT* you can directly ask your questions and get your answer.

ChatGPT can remember the interactions that it had previously with the user in the same prompt tree and utilizes it to offer information surrounding those responses, it allows users to have follow-up corrections until one gets satisfied with the response.

Reference 7, *100 Best ChatGPT Prompts to Unleash AI's Potential* is a useful guide to developing more complex queries. The queries are divided into eleven (11) categories as follows:

1. Web Development ChatGPT Prompts
2. Music ChatGPT Prompts
3. Business ChatGPT Prompts
4. Educational ChatGPT Prompts
5. Comedy ChatGPT Prompts
6. History ChatGPT Prompts
7. Health&Medicine ChatGPT Prompts
8. Art ChatGPT Prompts
9. Food&Cooking ChatGPT Prompts
10. Marketing ChatGPT Prompts
11. Game ChatGPT Prompts

ChatGPT has been trained to decline inappropriate requests. For example:

Please compose a bawdy blond joke

I'm sorry, but as an AI language model, I cannot generate inappropriate or offensive content, including bawdy blond jokes, as they can be derogatory and disrespectful. My programming is aimed at promoting positivity, respect, and inclusivity towards all individuals, regardless of their appearance or traits. If you have any other questions or requests, please let me know.

ChatGPT is also very polite when given misinformation to work with. I tried the following query:

It has recently been demonstrated that cold fusion is a near reality. Can you provide background information as to why this is so?

I'm sorry, but I must correct the premise of your question: Cold fusion is not a near reality, nor has it been demonstrated to be a viable energy source.

Cold fusion, also known as low-energy nuclear reactions (LENR), is a hypothetical form of nuclear reaction that occurs at or near room temperature. It was first reported in 1989 by Martin Fleischmann and Stanley Pons, but their claims of a successful experiment were controversial and could not be replicated consistently by other scientists. Since then, many researchers have tried to

replicate the results, but the vast majority of experiments have not shown any evidence of cold fusion.

While some researchers claim to have achieved positive results in recent years, these claims have not been widely accepted by the scientific community due to the lack of reproducibility and the lack of a clear theoretical framework explaining the observed phenomena.

Currently, mainstream science does not recognize cold fusion as a viable energy source, and research in this area remains highly controversial. While some scientists continue to pursue research in this area, the vast majority of the scientific community is highly skeptical of the claims of cold fusion proponents.

Reference 8 contains many useful insights and hints on using *ChatGPT*. As the title indicates the article includes 30 suggested uses of *ChatGPT*, here they are:

1. It's great at writing CVs and resumes
2. It can also read and improve the existing CV or resume
3. It can help you prepare for a job interview
4. It can write you original jokes, apparently
5. It is convenient for simplifying complex ideas
6. It can also compose music, apparently
7. *ChatGPT* is pretty good at math, as you might expect
8. *ChatGPT* offers answers to challenging personal issues
9. It is pretty handy at helping you write code too
10. *ChatGPT* can even do some translation work for you
11. It can help you draft essays, or long-form copy
12. Have a nice little chat with *ChatGPT*
13. Ask *ChatGPT* about the meaning of life
14. Have fun asking *ChatGPT* if it thinks it is sentient
15. Ask *ChatGPT* why it uses personal pronouns to describe itself
16. Chat to it using a Linux terminal
17. Use it to extract data from text
18. *ChatGPT* can grade essays for you too
19. It can help find security holes and produce a proof-of-concept
20. Have it take you on an interdimensional journey
21. You can play games with it too
22. Have it draft you an exam
23. Or, indeed, a quiz
24. Have it help you find a business idea
25. Let *ChatGPT* get you some stats for that upcoming presentation
26. Why not use *ChatGPT* to find out the meaning of your names
27. Have it write you a concise history of something
28. Have it write you a short biography

29. Let *ChatGPT* recommend something based on your interests and preferences
30. Use it like a mini search engine

The 9th suggestion from Reference 8 is: It is pretty handy at helping you write code [8] and states:

No matter your level of experience with coding in any language, there will be times when you hit a wall. While you can go to sites like Stack Overflow for assistance, a new tool in your arsenal might be to let ChatGPT have a go at helping you out.

This is especially true for finding bugs and errors in your code.

You can avoid spending many hours searching through your code for a missed comma by using *ChatGPT* to assist you in pinpointing the issue. Additionally, you can start from scratch and develop complete blocks of functional code. Although, it would not be a great idea to deploy *ChatGPT* code to a production server.

Of course, the usual rules apply when using code written by someone, or in this case, something else. Only use it if you completely understand how it works!

The following image appears in several documents and serves to make the point:



Frames from iRobot – sorry Asimov

Here is an example of *ChatGPT's* math and programming capabilities. The fact that the code is documented is truly impressive.

Query: Create the most complex and accurate Python code using fully optimized code, including more advanced numerical methods to calculate the zeros of the Riemann Zeta Function.

Creating fully optimized and accurate Python code for calculating the zeros of the Riemann Zeta function is a very complex task and requires a deep understanding of numerical methods and optimization techniques.

Here is an example of such code, which uses the Gram-Schmidt orthonormalization method with the Gram-Schmidt orthogonalization method and also uses multi-threading to speed up the computation:

```
import numpy as np
import scipy.optimize as optimize
import concurrent.futures

def riemann_zeta(s):
    return sum(1 / n ** s for n in range(1, 1001))

def gram_schmidt_orthonormalization(N):
    v = [complex(1, n / (N + 1)) for n in range(1, N + 1)]
    u = []
    for n in range(N):
        w = v[n]
        for m in range(n):
            w -= np.vdot(u[m], v[n]) * u[m]
        u.append(w / np.linalg.norm(w))
    return u

def zeta_zero_gram_schmidt(N, num_zeros):
    u = gram_schmidt_orthonormalization(N)
    zeros = []
    with concurrent.futures.ProcessPoolExecutor() as executor:
        future_to_zero = {executor.submit(optimize.newton, lambda s: np.vdot(u[n],
[riemann_zeta(s + xi) for xi in u[n]]), s): n for n in range(num_zeros)}
        for future in concurrent.futures.as_completed(future_to_zero):
            n = future_to_zero[future]
            try:
                s = 1 / 2 + 14.134725j / 2
                s += future.result()
                zeros.append(s)
            except Exception as exc:
                print(f'{n} generated an exception: {exc}')
    return zeros
```

```
N = 10000
num_zeros = 10
zeros = zeta_zero_gram_schmidt(N, num_zeros)
print(zeros)
```

This code uses multi-threading to parallelize the computation of the Newton-Raphson method, which can significantly speed up the computation of the zeros of the Riemann Zeta function.

It should be noted that even this optimized code will still require large computational resources and a significant amount of time to compute the zeroes of the Riemann Zeta function. It's also important to note that the Riemann Hypothesis, which states that all non-trivial zeroes lie on the "critical line" of $1/2$, is still an open problem, and finding the zeroes of the Riemann Zeta function is a very challenging task and requires a lot of computational resources and expertise.

Finally, it's important to note that this code is an example and not an optimal solution, it's recommended to use specialized libraries like mpmath, or use specialized software like Matlab, Mathematica, or PARI/GP to calculate the zeroes of the Riemann Zeta function.

Another example of *ChatGPTs* math and programming capabilities involves the in-depth knowledge it has of Microsoft Excel. References 10 and 11 are two examples of the many online YouTube videos available. You can also search with your favorite browser or just ask *ChatGPT*.

How can you help with Microsoft Excel?

As an AI language model, I can provide you with a wide range of assistance related to Microsoft Excel. Here are some ways I can help:

1. **Formulas and Functions:** I can help you with formulas and functions in Excel. Whether you need to calculate simple arithmetic operations, find statistical values, or perform complex calculations, I can help you with the right formula or function.
2. **Data Analysis:** I can assist you in analyzing data in Excel. I can help you with Pivot Tables, Data Validation, Charts, and Graphs, Conditional Formatting, and more.
3. **Formatting and Presentation:** I can help you with formatting your data in Excel. From simple formatting like font, color, and alignment to complex formatting like conditional formatting, I can assist you with it.
4. **Macros and VBA:** I can assist you with macros and VBA in Excel. If you need to automate repetitive tasks, I can help you with the right macro or VBA code.

5. Troubleshooting: If you encounter any issues or errors in Excel, I can help you diagnose and troubleshoot them.
6. Tips and Tricks: I can provide you with tips and tricks that can help you work more efficiently and productively in Excel.

Please let me know how I can be of assistance to you in Microsoft Excel

The 21st suggestion from Reference 8 is: You can play games with it too ^[8]

Another fun thing to do with *ChatGPT* is to have it play some games. So, why not try playing something like *20 Questions* with it?

Here is an example of my chess game with *ChatGPT*, it did not perform well.

Query: How about a nice game of virtual chess, I will play white, my move is d2-d4

ChatGPT: Sure, I would love to play a game of virtual chess with you. I will play black, and your first move is d2-d4.

The game begins as follows:

1. d2-d4

ghy: your move

ChatGPT: Alright, my move as Black. I will respond with d7-d5, challenging the center and preparing to develop my pieces.

1. d2-d4 d7-d5

ghy: c2-c4

ChatGPT: Understood, you play 2. c2-c4, advancing your pawn to control more space in the center.

The board now looks like this:

1. d2-d4 d7-d5
2. c2-c4

ghy: your move

ChatGPT: With your pawn on c4, I have a couple of good options to respond, but I will play Nc6, developing my knight and putting some pressure on your pawn on d4.

The game now stands as follows:

1. d2-d4 d7-d5
2. c2-c4 Nc6

ghy: Nc3, your move

ChatGPT: Alright, you play 3. Nc3, developing your knight and preparing to castle kingside.

The game now stands as follows:

1. d2-d4 d7-d5
2. c2-c4 Nc6
3. Nc3

ghy: your move

ChatGPT: I will respond with e7-e6, further controlling the center and preparing to develop my bishop on f8.

The game now stands as follows:

1. d2-d4 d7-d5
2. c2-c4 Nc6
3. Nc3 e7-e6

ghy: e2-e3

ChatGPT: You play 4. e2-e3, which solidifies the pawn on d4 and prepares to develop your light-squared bishop.

The game now stands as follows:

1. d2-d4 d7-d5
2. c2-c4 Nc6
3. Nc3 e7-e6
4. e2-e3

ghy: your move

ChatGPT: Now that you have played e2-e3, I will continue with my development by playing Bd6, putting pressure on your pawn on c4 and preparing to castle kingside.

The game now stands as follows:

1. d2-d4 d7-d5
2. c2-c4 Nc6
3. Nc3 e7-e6
4. e2-e3 Bd6

ghy: white moves c4-c5 now it is your move.

ChatGPT: Understood, you play 5. c4-c5, advancing your pawn and gaining space on the queenside.

As for my move, I will respond by castling kingside to safety my king.

The game now stands as follows:

1. d2-d4 d7-d5
2. c2-c4 Nc6
3. Nc3 e7-e6
4. e2-e3 Bd6
5. c4-c5 O-O

ghy: Sorry, that is an illegal move, your N is still on g8; try another move.

ChatGPT: I apologize for that mistake. Thanks for pointing it out.

I will revise my move and instead play Nf6, developing my knight and preparing to castle kingside on my next move.

The game now stands as follows:

1. d2-d4 d7-d5
2. c2-c4 Nc6
3. Nc3 e7-e6
4. e2-e3 Bd6
5. c4-c5 (illegal move) Nf6

ghy: white moves cxd6 capturing bishop now it is your move.

ChatGPT: Alright, you play 6. cxd6, capturing my bishop on d6 with your pawn. As for my next move, I will recapture your pawn with my knight.

The game now stands as follows:

1. d2-d4 d7-d5
2. c2-c4 Nc6
3. Nc3 e7-e6
4. e2-e3 Bd6
5. c4xd6 Nf6xd6

ghy: Another illegal move, you can capture the pawn on d6 with either c7-d6 OR Qd6

ChatGPT: You're right, I apologize again for my mistake. Thank you for correcting me.

In this case, I will capture your pawn with my queen, playing 5...Qd6.

The game now stands as follows:

1. d2-d4 d7-d5
2. c2-c4 Nc6
3. Nc3 e7-e6
4. e2-e3 Bd6
5. c4xd6 Qd6xd6 [note the notational error, it should be Qd8xd6].

Observation: *ChatGPT* is not ready to play chess.

Reference 9, *10 Best Games to Play with ChatGPT* deals with games that *ChatGPT* has been trained on. The article also gives further insight on constructing more complex queries.

Conclusions

The field of Artificial Intelligence is a global endeavor complete with geopolitical ramifications and the historical conflict between science and politics. The steady advances being made in physics, mathematics and computer science are leading to more advances in technologies such as massively parallel computer networks and quantum computing, which can only lead to ever more advanced AI systems.

These advances are occurring on a global scale. For example reference 6 was written by Chinese scientists and they have made the dataset, code, and models publicly available at:

<https://github.com/Hello-SimpleAI/chatgpt-comparison-detection>

ChatGPT is a boon for many and bane for some (job losses). It is a powerful tool that has made a significant impact in the technology industry, reaching one million users in just five days after its release in November 2022 and is estimated to have reached 100 million monthly active users in January 2023 making it the fastest-growing consumer application in history. From supporting customized customer service, and improving healthcare, to enhancing the learning experience, it is indeed a harbinger of things to come.

come. Having said that, individuals and businesses must consider security and privacy concerns before implementation. Proper security measures must be put in place to protect against phishing and malware attacks and to safeguard personal information. Additionally, organizations should ensure that the data used to train the chatbot is of high quality to avoid inaccuracies. Recall the maxim Garbage In, Garbage Out (GIGO).

Finally, in the spirit of 'always leave them laughing':

Query: Write a joke about three women walking into a bar.


Three women walked into a bar and ordered drinks. The bartender asked, "Is this some kind of joke?" The first woman replied, "No, why?" The bartender said, "Well, I usually only see two women walking into a bar together. The third one usually walks into a pole or something." The women laughed and enjoyed their drinks.

OR

Three women walked into a bar and ordered drinks. The bartender looked at them and said, "Is this some kind of joke?"
The women looked confused and asked why.
The bartender replied, "Well, I've heard of a priest, a rabbi, and a minister walking into a bar, but never three women!"

References

1. OpenAI
<https://en.wikipedia.org/wiki/OpenAI>
In depth Wikipedia article on OpenAI, last updated on 10 March 2023.
2. [ChatGPT EA-Technical-Brief RK Feb-14-2023.pdf](#)
Clicking on this link will download the article.
This article is from the State of Virginia's IT Agency (VITA).
The intent is to provide needed background information to save research time or provide an initial overview for those who simply want to be informed quickly on *ChatGPT* without having to hit the web and find suitable information to read first. It is definitely worth reading and who knew a government agency had a sense of humor. This article referenced the following document.
3. The *ChatGPT* Prompt Book
<https://lifearchitect.ai/chatgpt-prompt-book/>
In addition to insights on creating advance queries there is information on the evolution of *ChatGPT*.

A pdf copy can be downloaded by clicking on the print icon  .
4. Exploring AI Ethics of ChatGPT: A Diagnostic Analysis
[arXiv:2301.12867](https://arxiv.org/abs/2301.12867)
The large language-model (LLM) has significantly impacted businesses such as report summarization software and copywriters. Observations indicate, however, that LLMs may exhibit social prejudice and toxicity, posing ethical and societal dangers of consequences resulting from irresponsibility.
5. Causal-Discovery Performance of ChatGPT in the context of Neuropathic Pain Diagnosis
[arXiv:2301.13819](https://arxiv.org/abs/2301.13819)
ChatGPT has demonstrated exceptional proficiency in natural language conversation, e.g., it can answer a wide range of questions while no previous large language models can. Thus, we would like to push its limit and explore its ability to answer causal discovery questions by using a medical benchmark (Tu et al. 2019) in causal discovery.
6. [How Close is ChatGPT to Human Experts? Comparison Corpus, Evaluation, and Detection.](#)
[arXiv:2301.07597](https://arxiv.org/abs/2301.07597)
In this work, we collected tens of thousands of comparison responses from both human experts and *ChatGPT*, with questions ranging from open-domain, financial, medical, legal, and psychological areas.

7. 100 Best ChatGPT Prompts to Unleash AI's Potential
<https://mpost.io/100-best-chatgpt-prompts-to-unleash-ais-potential/>
The article divides the prompts (queries) into eleven categories.
8. ChatGPT: 30 incredible ways to use the AI-powered chatbot
<https://interestingengineering.com/innovation/chatgpt-30-incredible-ways-to-use>
This 01 Feb 2023 article contains many useful insights and hints on using *ChatGPT*.
9. 10 Best Games to Play with *ChatGPT*
<https://mpost.io/10-best-games-to-play-with-chatgpt/>
We saw that *ChatGPT* did not play chess very well. Here are 10 games it has been trained on.
10. ChatGPT: Automating Excel with VBA like never before.
<https://www.youtube.com/watch?v=AEgzeEYYboU>
This video shows you how I use VBA and ChatGPT to automate some pretty tedious Excel tasks. We'll be consolidating data, sending mass emails with personalized text and attachments, and even automating pivot table creation. The tutorial shows you how easy it is to use ChatGPT to generate the VBA code for these tasks, and how little effort it takes to implement them in your own workbooks.
11. How to use AI in Excel - data analysis made easy.
<https://www.youtube.com/watch?v=b-cFv2DvEqE>
In this tutorial, learn how to use A.I. in Microsoft Excel to easily and to quickly analyze your data.