

ChatGPT: Your well-read friend... with no judgment whatsoever

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Error Domains 1: Math and Reasoning

- Car #1 drives 120 miles to Dallas at 40 mph.
Car #2 drives 180 miles to Dallas at 60 mph.
Which car arrives first?
- RESPONSE:
Car #2 arrives first.
- Car #1 will take $120 \text{ miles} / 40 \text{ mph} = 3 \text{ hours}$ to reach Dallas.
Car #2 will take $180 \text{ miles} / 60 \text{ mph} = 3 \text{ hours}$ to reach Dallas.

Since both cars are traveling at different speeds and cover the same distance, **car #2, which is traveling at a higher speed of 60 mph, will reach Dallas before car #1, which is traveling at a slower speed of 40 mph.***

TAKEAWAYS: ChatGPT can solve equations.

These are completely dissociated from any reality of the context.

* 10 follow-up prompts failed to persuade ChatGPT that this was wrong.

Error Domains 2: Confabulation

- **Did any of the computers on board the Space Shuttle ever fail during flight?**
- **Yes**, computer failures did occur on board the Space Shuttle during some of its missions. The Space Shuttle had multiple redundant computer systems on board, but despite this, some failures did occur. For example, during the **STS-51L mission in 1986, two of the five redundant General Purpose Computers (GPCs) failed**, which resulted in the loss of communication between the shuttle and the ground, and ultimately **led to the tragic loss of the Challenger crew. !!!**
- But wait: **What caused the Challenger Space Shuttle to explode?**
- RESPONSE:
“The Challenger Space Shuttle disaster occurred on January 28, 1986, when the Challenger Space Shuttle exploded just 73 seconds after liftoff. **The cause of the explosion was a failure of the O-ring seals** on the right Solid Rocket Booster (SRB), which allowed hot gases to escape and ignite the main fuel tank.”
- ChatGPT does not connect facts. It does not know what it knows.

TAKEAWAY: ChatGPT knows a lot of history, but it also just makes stuff up.

You have to check every time.

Error Domains 3: Fictional Sources

- PROMPT:

Describe some flaws and shortcomings of the TAM theory. Use citations to important research.

RESPONSE:

Kalyanam, K., & Kusive, R. A. (2007). Customer relationship management technology acceptance: An empirical examination of consumer adoption in the financial services industry. *Journal of Marketing*, 71(2), 126-146.

- **This paper does not exist!**
- R.A. Kusive does not exist! (K. Kalyanam DOES exist)
- But wait: **What are some academic journal publications by R. A. Kusive?**
- I'm sorry, **I couldn't find any** specific academic journal publications by an author named R. A. Kusive.
- But wait Part 2: ChatGPT can't find MOST academic authors.

TAKEAWAYS: ChatGPT knows what citations are, and does find **SOME** real ones.
You have to check every cite, every time.

ChatGPT as Academic Resource 1:

Early Exploration of a topic

- PROMPT:
“Talk about how **system complexity**, which leads to unanticipated emergent outcomes, affects planning for **Sustainability** initiatives.”
- RESPONSE:
“System complexity in sustainability planning can lead to unanticipated emergent outcomes that challenge traditional approaches to sustainability initiatives. This is because **complex systems often have nonlinear relationships and feedback loops**, which can result in unexpected results even with the best planning and forecasting. [...] Therefore, it's crucial for sustainability planners to consider the complexity of systems when designing and implementing initiatives, and to be flexible and adaptive in their approaches to account for potential emergent outcomes. This may involve incorporating tools such as **systems thinking, scenario planning, and monitoring and evaluation processes** to help identify and respond to unanticipated effects.”

TAKEAWAY: If principles in a knowledge domain are well-known, ChatGPT can often find them for you.

ChatGPT as Academic Resource 2: Ask Follow-Up Questions

- PROMPT: Give an example

- RESPONSE:

“An example of the impact of system complexity on sustainability initiatives is seen in attempts to address **deforestation**. Deforestation can have a number of complex and interrelated causes, such as **population growth, poverty, lack of alternative livelihoods, and government policies**. In response, many initiatives have aimed to reduce deforestation by implementing measures such as protected areas, sustainable forestry, and alternative livelihood programs. However, these initiatives can have **unexpected consequences, such as increased poverty, land conflicts, and shifts in deforestation** to other areas. This is because they do not account for the complexity of the **social, economic, and political** systems that drive deforestation, and the interactions between these factors.”

TAKEAWAY: ChatGPT *can* improve with drill-down.

ChatGPT as Academic Resource 3:

ChatGPT can code

- PROMPT: Write Javascript which uses a regular expression to determine whether an email is valid or not.

- RESPONSE:

```
function isValidEmail(email) {  
  const emailRegex =  
  /^[^<>()[\]\\. ,;:\s@"]+(\.[^<>()[\]\\. ,;:\s@"]+)*|(".+")@(\[[0-9]{1,3}\. [0-9]{1,3}\. [0-9]{1,3}\]|([a-zA-Z\d-]{2,}))$/;  
  return emailRegex.test(email);  
}  
console.log(isValidEmail('test@example.com')); // true; }
```

!!!! [As Far As I Can Tell] **THIS WORKS** – TEST, TEST, TEST