UAFS Writing Center

Tutor's Guide to AI & Writing

(V.2, July, 2024)

1. Writing Center Policy

2. Tutoring & AI

3. GenAI Overview

4. GenAI as a Writing Tool: Potential Strengths & Weaknesses

1.Writing Center Policy

1.Writing Center Policy

- Do **not** use advanced generative AI (GenAI) programs (e.g., ChatGPT) during tutoring appointments.

- **Rationale**: The quality and credibility of our tutoring services rests on the abilities of our tutors as students, individuals and practitioners of writing center pedagogy. While GenAI is a robust tool and could possibly supplement tutoring, further study is needed to determine how its use could align with our practice.

2. Tutoring & AI

a. Common Characteristics of AI Papers
b. Practice: human or AI?
c. How to Handle Appointments in which You Suspect the Writer Used AI

2a.Common Characteristics of AI Papers

- **Grammar**: consistently correct[1]
- **Phrasing**: similar, cookie-cutter topic sentences[2]
- **Length**: “Relatively long sentences sentences in relatively short paragraphs.”[3]
- **Analysis**: unoriginal, unsubstantial.
- **Citations**: none or often incorrect.

2a.Common Characteristics of AI Papers

** A common tell is that the paper is written clearly and perhaps even thoughtfully, but the citations are completely incorrect. This is an unusual discrepancy. Typically, students who write fluently also cite correctly.**

2b.Practice: AI & Human Papers

- Do you think this paper was written by a human or an AI? Why?

  Paper #1

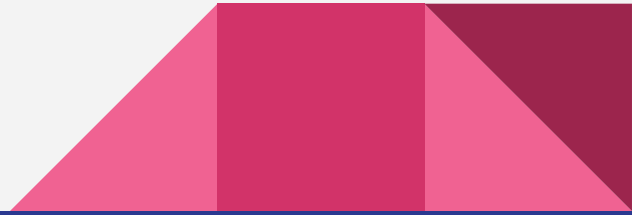
2b.Practice: AI & Human Papers

- This paper was based on the same prompt. Do you think it was written by a human or an AI? Why?

Paper #2

2b.Practice: AI & Human Papers

- Spoiler Warning! (answers in next slide)



2b.Practice: AI & Human Papers

Paper #1: AI (generated by ChatGPT 4o, July 2024)

- Click to see notes

Paper #2: Human (written by a UAFS student)

- Click to see notes

2b. Practice AI & Human Papers

AI Paper

- Length: equal paragraph sizes
- Analysis: matter-of-fact, superficial
- Phrasing: cloned topic sentences. “Sweet and sour pork is…”, “Chop suey… is”, “Egg rolls are…”

Human Paper

- Structure: varying paragraph sizes (short intro & conclusion, longer body paragraphs)
- Analysis: rich elaboration and supporting details
- Style: thoughtful variety. Paper is in conversation with itself.
- Citations included

2c. How to Handle Appointments in which You Suspect the Writer Used AI.

a. **If the paper seems partly self-written and partly AI-generated, you can point out the shift in tone/style and ask the writer about it.**
   - Ex. *“This paragraph sounds a lot different than your other ones. The word choice and sentence structure has changed. Do you know why? It’s important to maintain a consistent style throughout.”*

2c. How to Handle Appointments in which You Suspect the Writer Used AI.

b. If you think the entire paper is AI-generated…

- **<u>If</u>** you're comfortable, you can ask the student politely ~ *"Did you use any kind of program to help write this?"*
- Explain why you think it seems AI-generated.
  - Ex. "The reason I ask is that it has many qualities of AI writing. For example, many paragraph lack much analysis; there're no grammatical errors, but most of the citations are incorrect. That's typical of AI writing."

2c. How to Handle Appointments in which You Suspect the Writer Used AI.

c. If the student discloses that they used AI…

- Tell them they need to make sure that it's permitted by the instructor. They likely will not allow it and can often easily tell.

2c. How to Handle Appointments in which You Suspect the Writer Used AI.

You don’t have to ask a student if they used AI if you’re not comfortable.

If your concerns are not resolved during the appointment, talk to the Writing Center Director.

2c. How to Handle Appointments in which You Suspect the Writer Used AI.

*** IMPORTANT FINAL POINT***

- Don’t become paranoid and wonder if every paper you see was AI-made, or you’ll begin mistaking human writing for AI.
- If a paper particularly strikes you as AI-like, you can address it; otherwise, keep it off your mind. For example, it’s not like you’re constantly wondering if your next client’s paper is plagiarized.

3. GenAI Overview

a. Major GenAI Programs
b. Basic Design
c. How to Prompt Effectively

3a.GenAI Overview: Major GenAI Programs

What is Generative AI (GenAI)?

“Deep learning models that can generate high-quality text, images, and other content based on the data they were trained on.” [5]

3a.GenAI Overview: Major GenAI Programs

Examples of GenAI Programs:

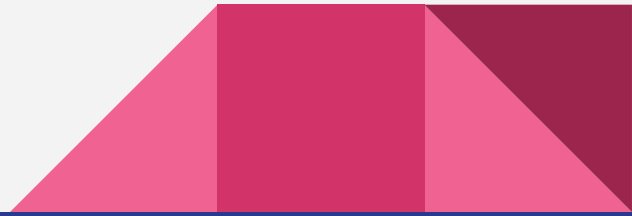
- ChatGPT, Google Gemini, CoPilot: primarily text generation but some are also capable of image generation.
- Dall-E and Midjourney: image-based generation.Referred to as “text-to-image models.” Type in a prompt, and it will produce an image based on that prompt.

*The following slides specifically refer to text-based GenAI such as ChatGPT.

3b.GenAI Overview: Basic Design

Note: The following slides are simplified, condensed explanations of the development of ChatGPT. Precise terminology and procedure are omitted. This is meant to be a rudimentary overview.

Information in 3b is based on Stephen Wolfram's article "What is ChatGPT Doing and Why Does it Work?"

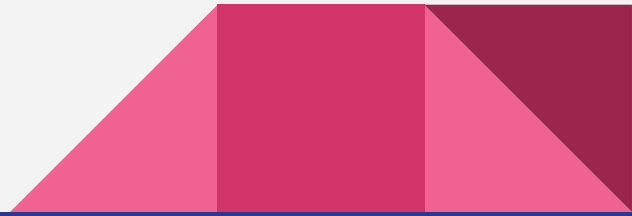


3b.GenAI Overview: Basic Design

How is ChatGPT made?

Take the following sentence: “It’ll be over before you _____.”

What comes next in your mind?



3b.GenAI Overview: Basic Design

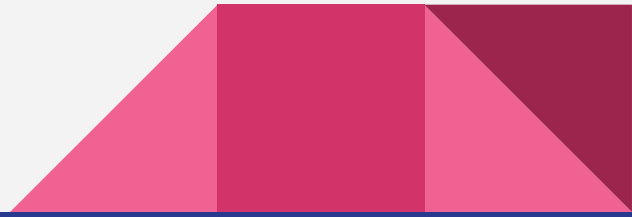
How is ChatGPT made?

> “It’ll be over before you know it.”
>
> This is likely how you completed it because, very often, when we hear or read “It’ll be over before you…” it’s followed up with “...know it,” so our brain tends to complete it based on what its been most exposed to.

3b.GenAI Overview: Basic Design

How is ChatGPT made?

> “It’ll be over before you know it.”
>
> In other words, your guess was based on **probability**.



3b.GenAI Overview: Basic Design

How is ChatGPT made?

Now imagine learning a language from scratch by applying this method over millions or billions of pages of text. This is fundamentally how ChatGPT learns and uses language. Not by meaning but by word prediction based on probability.

This is basically Step #1 which the next slide explains more thoroughly.

3b.GenAI Overview: Basic Design

How is ChatGPT made?

Step #1 : Training Data

A vast amount of data from the internet is “fed” into the program. The program independently recognizes patterns in the language from the data (e.g., grammar, syntax, collocations) and acquires the ability to interpret and produce language coherently using “word prediction.”

“What ChatGPT is always fundamentally trying to do is to produce a ‘reasonable continuation’ of whatever text it’s got so far, whereby ‘reasonable’ we mean ‘what one might expect someone to write after seeing what people have written on billions of webpages, etc.” [6]

3b.GenAI Overview: Basic Design

How is ChatGPT made?

Step #2: Fine Tuning

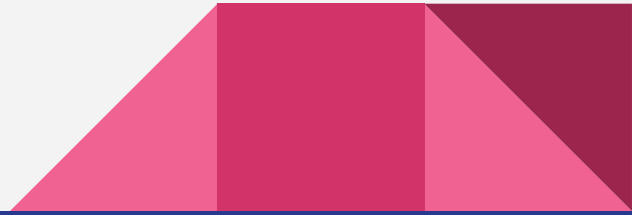
Human Trainers evaluate the AI's responses. The AI adjusts its responses based on their evaluation.

This evaluation is meant to improve the AI's accuracy and result in a more natural, chat-based, human-like interaction.

3c.GenAI Overview: How to Prompt Effectively

3 Key Points:

1) Use complete sentences rather than keywords.
2) Provide context.
3) Follow up its response.



3c.GenAI Overview: How to Prompt Effectively

3 Key Points:

1) Use complete sentences rather than keywords.

- Unlike search engines, ChatGPT was designed to communicate in a human-like manner. That’s the “Chat” in ChatGPT.

3c.GenAI Overview: How to Prompt Effectively

3 Key Points:

2) Provide context

- The more complex the task, the more context you'll likely need to provide.
- See the following color-coded slides for examples of context.

3c.GenAI Overview: How to Prompt Effectively

Example Prompts:

I'm trying to understand quantum entanglement on a laymen level because I want to incorporate the concept of it in a sci-fi story I'm writing. I'd like to ask you questions about it one at a time. Can you help me with this?

What do I want to know?

Who do I want to ask this?

What's my goal?

How do I want it explained?

3c.GenAI Overview: How to Prompt Effectively

Example Prompts:

I'd like to debate you about LeBron James. I'm fed up with the asinine claims people levy against his character and basketball ability. You will debate as one of these people. For example, you think LeBron lacks a "clutch gene," is "soft" and conceited. You speak in an opinionated manner but also use logical appeals. I'll argue in favor of LeBron. We'll take turns choosing a claim about him to debate. Does this make sense?

What do I want to know?

Who do I want to ask this?

What's my goal?

How do I want it explained?

3c.GenAI Overview: How to Prompt Effectively

Example Prompts:

What words mean “to take something in a sneaky way?”

What do I want to know?

Who do I want to ask this?

What’s my goal?

How do I want it explained?

3c.GenAI Overview: How to Prompt Effectively

Example Prompts:

What words mean “to take something in a sneaky way?”

Only list words that rhyme with “crab.”

What do I want to know?

Who do I want to ask this?

What’s my goal?

How do I want it explained?

3c.GenAI Overview: How to Prompt Effectively

Example Prompts:

I’m trying to remember the name of a famous photo. People speculate it involves aliens. In the f.g is a girl. In the b.g are some mysterious, humanoid figure(s). Can you identify the photo?

What do I want to know?

Who do I want to ask this?

What’s my goal?

How do I want it explained?

3c.GenAI Overview: How to Prompt Effectively

3) Follow Up its Response

- Following up/Dialoguing is arguably GenAI's most unique and productive capability. It allows the user to use it as a critical thinking tool rather than a Q&A machine.
- Not all prompts will need follow ups, but it should be used whenever there is an opportunity.

3c.GenAI Overview: How to Prompt Effectively

3) Follow Up its Responses

- There are many reasons to follow up/dialogue with the AI's initial response such as (click links to view sample interaction):
  - You want to explore the topic further.
  - You think the AI's response was in incorrect, inaccurate, misleading, etc.
  - The AI misunderstood your initial prompt so you need to clarify.
  - You want the AI to revise its previous response.
  - You're using the AI as a debate partner.

4.GenAI as a Writing Tool: Potential Strengths & Weaknesses

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Note: Remember, as tutors, the Writing Center's policy is to **not** use GenAI (e.g., ChatGPT) during tutoring appointments. The content in this section is supplemental info for your personal, intellectual development although it may help you be more conversant about GenAI if it comes up in appointments.

Note: The info here is by no means exhaustive and is also subject to change as GenAI continues to rapidly evolve. If you use GenAI as a writing tool, you might determine other strengths and weakness not covered here.

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Note: Notice the qualifier “potential.” While each of these can be considered strengths, as in tasks that GenAI can perform somewhat reliably and uniquely, each can still result in error and lead the user astray if they are not careful.

Note: Almost all of the following strengths/uses will require the user to verify the AI’s output to make sure the info is accurate. Think of it as a springboard into traditional, verifiable research.

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Potential Strengths

Note: The strengths included here are meant to be uses which are least likely to result in authorship complications although they are certainly not immune to this. Notice that uses such as drafting and revising are excluded even though GenAI can excel at these.

Hence, “strengths” here is defined as uses that are: unique to GenAI, somewhat reliably performed by GenAI, and more conducive to ethical use.

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Potential Strengths

- Research Tool
  a. Source Collection
  b. Word Lookup
  c. Concept Clarification
  d. Curate Info
  e. Misc Questions

- Brainstorming Tool
  a. Debate Partner / Create Counter Arguments
  b. Soundboarding
  c. Generate Research Questions

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Potential Strengths: click links to see ChatGPT's answers.

- **Research Tool**
  a. Source Collection: "Recommend five books or articles about the formation of the United States Constitution."
     - Notice #5 is very inaccurate if you look up it.
  b. Word Lookup: "List words that mean 'to take something in a sneaky way."

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Potential Strengths: click links to see ChatGPT's answers.

- **Research Tool**

  c. Concept Clarification: "I'm trying to understand quantum entanglement on a laymen level because…"

  d. Curate Info: "List 10 yellow-colored fruits."
  e. Misc Questions:
  - "I'm trying to remember the name of a famous photo. People speculate it involves aliens. In the f.g. Is a girl. In the b.g. Are mysterious figure(s). Can you identify the photo?"
  - "What format lists citations in the bibliography/reference/works cited page sequentially rather than alphabetically?"
    - Notice how I had to follow up and refine my prompts.

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Potential Strengths: click links to see ChatGPT's answers

- **Brainstorming Tool**
  a. Soundboarding: "I'm brainstorming two central characters in a sci-fi story..."
  b. Debate Parter / Generate Counter Arguments:

"I'd like to debate you about Lebron James..."

"'Churches should remain exempt....' Generate a list of counter arguments to this assertion."

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Weaknesses

- “Hallucinations” / False Information.
- Inconsistency or Flip-Flopping
- Knowledge Cutoff (for offline GenAI such as ChatGPT)
- Citing Sources
- Limited Access to Scholarly Articles
- Lack of understanding.

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Weaknesses

- “Hallucinations”:
  - These are incorrect/false responses presented as the truth.
  - Important Point: these are created due to error, not deceit. Deceit implies the AI possesses an understanding of the information and the sentience to purposefully **lie** to the user. This is the consensus of the AI community although there are some who think otherwise.

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Weaknesses

- Hallucination Examples
- Factual Errors (Bob Dylan): the quote ChatGPT provides is made up. Bob Dylan never said that. Notice how it responds.
- Source Fabrication (Snooze Alarms): all of the references it provides in the sample papers are fake though it is capable of providing real references. Consistency varies.
- Impossible Chess Moves: this is more for fun, but you can play chess with it using chess notation. Eventually, it'll make impossible moves. This is equivalent to factual errors or fabricated info, demonstrating that it doesn't actually understand its input or output.

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Weaknesses

- Inconsistent Answers
  - Ex. “Does the English word ‘peruse’ derive…”
    - Notice what it says after my next question of “Are you sure?”

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Weaknesses

- Knowledge Cutoff
  - Offline GenAI such as ChatGPT does not have access to the internet and their training data is not fully up to date. For example, ChatGPT's knowledge bank ends at approx July 2023.
    - Its exact cutoff date is unclear. See this bizarre exchange.

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Weaknesses

- Citing Sources
  - Offline GenAI like ChatGPT typically cannot cite the info it refers to, even if you ask it.
  - Online GenAI such as CoPilot, Gemini, and ChatGPT 4 can cite. A huge advantage but it’s not always perfect.

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Weaknesses

- Limited Access to Scholarly Articles
  - Offline GenAI like ChatGPT typically cannot reference scholarly articles. When it does, it’s usually a hallucination.
  - Bing Chat, Google Bard, and ChatGPT 4 sometimes can but not perfectly.
    - When they do, remember that their output is not exhaustive. Library databases still include vastly more scholarly content.

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Weaknesses

- Lack of Understanding
  - This is the most abstract but perhaps the most significant weakness of these programs. It doesn't actually meaningfully understand its input (your prompt) or its output (its responses).
  - This is due to how programs like ChatGPT are designed. Their input and output are based on statistical likelihoods rather than meaning.

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Weaknesses

- Lack of Understanding
    - It’s important to keep in mind what you’re communicating with when you use these programs: something that doesn’t meaningfully understand the vast amount of data that it’s been trained on, what it says, or what you say.

3.GenAI as a Writing Tool: Potential Strengths & Weaknesses

Weaknesses

- Lack of Understanding
  - Hence, the onus is on you, the user, to use these tools responsibly and ethically.
  - If you’re hammering a nail in the wall and end up busting your hand, damaging the wall, or hitting someone else, you don’t blame the hammer (until the day comes when the hammer is smart enough to be blamed).

Endnotes

1. Herbold, “A Large Scale Comparison,” 7.
2. Herbold, 8.
3. AlAfnan, “Do Artificial Chatbots,” 88.
4. Martineau, “What is Generative.”
5. Wolfram, “What is ChatGPT.”
6. “Google Engineer.”

Sources

AlAfnan, Mohammad A, and Siti F. MohdZuki. “Do Artificial Chatbots Have a Writing Style? An Investigation into the Stylistic Features of ChatGPT-4.” *Journal of Artificial Intelligence and Technology* 3, no. 3 (May 2023): 88. Accessed July 24, 2024. https://doi.org/10.37965/jait.2023.0267.

“Google Engineer on his Sentient AI Claim.” Produced by Bloomberg Technology on July 23, 2022. YouTube video, 10:33, https://www.youtube.com/watch?v=kgCUn4fQTsc.

Herbold, Steffen, Annette Hautli-Janisz, Ute Heuer, Zlata Kikteva, and Alexander Trautsch. “A Large Scale Comparison of Human-Written Versus ChatGPT-Generated Essay.” *Scientific Reports* 13 (October 2023): 7-8. Accessed July 7, 2024. https://doi.org/10.1038/s41598-023-45644-9

Martineau, Kim. “What is Generative AI?” IBM. April 20 2023. Accessed Nov 7 2023. *https://research.ibm.com/blog/what-is-generative-AI*,

Wolfram, Stephen. “What is ChatGPT Doing and Why Does it Work?” Stephen Wolfram Writing. Feb 14 2023. Accessed Nov 13 2023. *https://writings.stephenwolfram.com/2023/02/what-is-chatgpt-doing-and-why-does-it-work/*.

Hopefully, you find this guide insightful, helpful and are slightly amused by the robotic font.

If you have any questions, please reach out!