# ChatGPT & Other Large Language Models

**Large Language Models** (LLMs), like ChatGPT, are systems trained on “string prediction tasks.” That is, when you feed an LLM a prompt, it will use statistical algorithms to predict plausible sentences based on a dataset of texts compiled from the internet. LLMs draw language and content from everything from open-access scholarly journals to reddit posts, which allows them to effectively produce plausible book summaries, recipes, blog posts, movie scripts and other such texts. At the time of writing this handout, LLMs do not have the capacity for critical thought, information evaluation, or creative invention (depending on your definition of “creative invention”).

As such, LLMs can be used as a *part* of the writing process when engaged strategically and with an awareness of what such tools can and can’tdo. This handout serves as an informational resource so you can build such an awareness for yourself. Here, we will provide provisional answers (keeping in mind that this information might become outdated very quickly) to the following questions:

* What are LLMs? How do they work?
* What can LLMs do? How can they be used to support the writing process?
* What can’t LLMs do? Where and how does their text production fall short?

With that said, LLMs are a (fast) developing technology that raise many concerns about data privacy, ethics (of, for instance, creative ownership and source attribution), and their potential to undermine students’ learning, critical thinking, and critical reading skill acquisition. For these reasons and others besides, **some professors may choose to prohibit any use of LLMs in their classes**. As you consider whether to integrate this tool into your process, make sure to check back with your instructors about their rules and standards for protecting original research and private information as well as maintaining academic integrity.

**What can LLMs do?**

1. Mimic and plausibly replicate **genre-stabilized** texts, such as reports, cover letters, and resumes.

Because LLMs use statistical probability to generate texts, the more *constrained* the formal rules are for the genre in which you are writing, the more likely it is that the LLM will “get it right” or produce a draft that fits readers’ expectations. The LLM can, in certain technical or administrative genres, produce a draft that models the language and structure a reader might expect, a draft which you can then craft, integrating your individual content and voice. The more open the genre you’re writing within, the looser readers’ expectations, the less likely the LLM will provide a useful resource.

1. Represent or summarize the content of **frequently discussed** topics, texts, and concepts.

LLMs amass and pull from a large dataset of internet-sources, including Wikipedia. The more frequently a topic or text is written about on the internet, the more material the LLM will have on it, which it can then regurgitate in engaging prose. For this reason, LLMs are typically reliable for providing an accurate (or passable) summary of Shakespeare but are less useful for summarizing books published in the last year. LLMs can thus provide a baseline for *informative* writing in a limited capacity.

Be careful when playing with this potential use of LLMs as they do not currently provide any source attribution (or evaluate any of the texts that make up their datasets). You cannot definitively know where or who the LLM is drawing its information from, which means that **when you use it, you risk inaccurate, fabricated, or even offensive material.** (Not to mention the problem of citation norms! Many academic genres will expect you to cite all your sources. LLMs make this requirement more than a little difficult). If you choose to use an LLM as part of your writing process, remember that the end product is still *your* writing. You’re putting your name on this material. Don’t damage your ethos by misrepresenting quantum theory because you failed to think critically about the LLM’s summation or by referencing a research study on eating disorders that doesn’t actually exist (for more, see the “hallucinations” section below).

1. Serve as a topic or key word **brainstorming** tool.

Ever experience brain freeze after receiving an assignment prompt? Your professor wants you to write about the present-day effects of the Cold War and you immediately forget everything you’ve ever learned about the Cold War (or even the conditions of the present-day)? LLMs have proven to be a great conversation partner to help generate ideas. This use is essentially comparable to having access to a human-encyclopedia uncle—someone who seems to “know everything”—who you can then call up to help you brainstorm. Once the LLM provides you a list of ideas for topics or key words, you can jump straight into the research and development process.

**What can’t LLMs do?**

1. Promise **trustworthy** information or content.

LLMs suffer from what scholars call “**hallucinations**.” That is, they will *make up* content and they will do so with all the confidence of a four-year-old describing their favorite unicorn.
2. **Cite** sources.

For the most part, LLMs cannot accurately cite sources because *they* don’t “remember” where their information comes from. Not only this, but if you ask an LLM to cite sources, it will often hallucinate plausible citational information and you’ll find yourself referencing an article written by a person who doesn’t exist.
3. **Remember** its own writing or purpose.

LLMs they have a very short memory. Depending on which model you’re using, an LLM can generally produce one to five paragraphs before it loses the narrative and starts generating material on an entirely different topic. Prompt it to write you a twenty-page paper on colonial America, you’ll get a two-page paper on colonial America plus a two-page paper on the health benefits of kale plus a two-page paper on the farm-to-table movement and so on and so forth. This limitation is called **“catastrophic forgetting**.”
4. Filter out **biased** or **offensive** language.

Remember the dataset LLMs pull from is comprised of *internet* sources and the internet is the known habitat of many a troll. Proceed with caution.

**What does all of this information mean for you as a (student-)writer?**

1. No matter what *you* will always be responsible for the task of **evaluating** the information and writing you (re)produce. Always check your sources. This responsibility only becomes moresignificant as you play with LLMs. You will need to do further research to verify and revise the material it provides you.
2. There *are* serious ethical concerns with using LLMs, especially when it comes to attributing source material. Think critically about your stance on how the LLM appropriates real peoples’ work without their permission and without providing compensation in order to generate its plausible sentences.
3. LLMs will store any information you feed into them and harvest your data. According to ChatGPT’s privacy policy, for instance, its organization will gather any information you type into the chatbot and the identifying data associated with your device or browser (e.g. your IP and location). In other words, the service does pose a security risk. Under no conditions should you feed an LLM *any* private information. It should go without saying but keep your social security number to yourself (and tell your tech-unsavvy grandparents to do the same).
4. LLMs can be writing and research tools*,* like Grammarly or citation generators, when used strategically. As with any other technology, they can facilitate certain aspects of the writing process for certain users. They can also complicate the writing process and get you to waste your time trying to track down information on a World War II battle that never happened. Experiment if you are so inclined. Learn what works for you and what doesn’t.
5. Your instructors (and the university) will have the last word when it comes to using LLMs for your class assignments. If they prohibit using LLMs, fall in line (at least for that class). You can curse the authoritarianism of the college classroom while saving yourself an appointment with the Student Conduct review board.