

Leo S. Lo

My new favorite research partner is an AI

What roles can librarians play in the future?

The research process has always involved collaboration, from brainstorming sessions to writing groups. Researchers rely on their peers for direction, encouragement, and insight. What if the collaborator was not human? What if the partner were a machine? This was the question I pondered as I started my most recent research project. As an academic librarian, I've always been interested in discovering innovative ways to assist researchers. As soon as I learned that AI assistants could help researchers in their work, I knew I had to give it a shot. And so, I began working with ChatGPT, a powerful generative AI tool.

OpenAI's ChatGPT is an artificial intelligence language model that uses deep learning algorithms to comprehend and generate text in natural language. It can finish sentences, paragraphs, and even whole articles from a given prompt. It has been trained on a vast quantity of text data, enabling it to recognize patterns and generate coherent responses. Since its release in November 2022, it has become the consumer software application with the fastest growth rate in history. It is used daily by more than 13 million people who ask it to perform any task imaginable.¹ As a research assistant, ChatGPT can generate ideas, suggest research questions, and provide context and background information for researchers. It can be an asset to any research team because of its capacity to connect seemingly unrelated ideas and provide new perspectives.

As homework or exam cheating was the most-discussed topic when ChatGPT was first introduced, my initial motivation was to design a study to learn more about how college students use tools like ChatGPT. I posed the research topic and asked ChatGPT to brainstorm with me. Within seconds, twenty ideas were generated. I picked three and asked it to generate potential research questions, and voila, within seconds, more ideas emerged. This experience opened my eyes to the potential of these new AI tools.

My new favorite research partner

My new favorite research partner and I continued our collaboration by discussing the types of studies (which turned out to be surveys) we should conduct, the survey questions and options, the optimal sample size, and the potential data analysis techniques. I was concerned that our potential student respondents might not provide truthful responses to some of these survey questions, as they might not want others to know that they cheat with these tools. Consequently, my AI assistant suggested that we could use scenario questions to allay the concerns of the respondents, which is an excellent suggestion. I decided to ask my AI assistant to act as an expert in various fields, such as higher education, psychology, survey

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design, etc., to provide me with a variety of perspectives when designing this study, and it did exactly that. These were completed in approximately 90 minutes. I even asked it to assist me with the IRB form for the study we worked on together. I was completely astonished.

However, despite how impressive ChatGPT can be, it is essential to recognize its limitations. One of its greatest limitations is that it is only as good as the training data. Even though it has been trained on a vast amount of text data, it may still produce biased or inaccurate results if the input is biased or inaccurate. It is also essential to note that ChatGPT cannot comprehend the context or intent of a research question in the same way that a human researcher can. This means that it may not always generate relevant ideas or responses to the research question. Another limitation of ChatGPT is that it cannot replace critical thinking. Although it can help researchers generate ideas, it cannot replace their ability to critically think about research. In addition, it may not possess the same depth and nuance as a human researcher.

It is also important for researchers to be transparent regarding their use of AI tools in their research, including how the tools were used and any potential limitations. While some of the leading journals have set new policies regarding the use of AI in the research process,² I believe there should be and most likely will be even more requirements, such as providing details about the data used to train the AI tool, the methods used to generate responses, and any potential biases or limitations. The ethical implications of using AI tools in research also raise concerns regarding the possibility of these tools perpetuating existing biases or discrimination in research. Researchers must be vigilant to ensure that their use of artificial intelligence tools does not result in unethical practices or outcomes.

What roles can librarians play in this new research environment?

We have a distinct perspective on the research process, which can be used to aid researchers who use AI assistants in their research. One of the most important ways we can assist researchers is by assisting them in identifying and evaluating AI tools that may be useful to their work. This requires staying abreast of the most recent advancements in AI technology and understanding the capabilities and limitations of various AI tools. Once researchers have identified an AI tool they wish to use in their research, we can offer guidance on how to integrate it into their research workflow. This may involve assisting them in designing research questions that are compatible with the capabilities of the tool or advising them on how to generate new ideas or analyze data using the tool.

Librarians can also play an important role in critically evaluating the output of AI tools. These tools are not infallible, and it is crucial for researchers to be aware of any possible biases or limitations in the output of these tools. In addition, academic librarians can promote transparency and ethical behavior in the use of AI tools for research. This may involve advocating for open and transparent research practices and encouraging researchers to use AI tools in a transparent manner. In addition, we can provide guidance on best practices for using AI tools in research and how to avoid ethical pitfalls.

AI assistants have the potential to revolutionize the research process, making it faster, more efficient, and more collaborative. At the same time, it is important to recognize their limitations and ethical implications. In this new research environment, academic librarians can play a crucial role in supporting researchers and advancing the quality of research.

We must continue to educate ourselves on the latest developments in AI technology and promote best practices in research to ensure that AI assistants are used effectively, ethically, and transparently. ʘ

Notes

1. Daniel Ruby, “CHATGPT Statistics for 2023: Comprehensive Facts and Data (New Data + GPT-4 Facts),” Demand Sage, February 8, 2023, <https://www.demandsage.com/chatgpt-statistics/>.
2. Chris Stokel-Walker, “CHATGPT Listed as Author on Research Papers: Many Scientists Disapprove,” *Nature News*, January 18, 2023, <https://www.nature.com/articles/d41586-023-00107-z>.