

ChatGPT: the next frontier in academic writing for cardiologists or a pandora's box of ethical dilemmas

Benjamin Marchandot ¹, Kensuke Matsushita ^{1,2}, Adrien Carmona¹, Antonin Trimaille^{1,2}, and Olivier Morel^{1,2,*}

¹Division of Cardiovascular Medicine, Nouvel Hôpital Civil, Strasbourg University Hospital, 1 place de l'Hôpital, 67000 Strasbourg, France; and ²UMR 1260, INSERM (French National Institute of Health and Medical Research), Regenerative Nanomedicine, FMTS, 1 rue Eugene Boeckel, Strasbourg 67000, France

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ChatGPT, also known as GPT-3 (Generative Pre-trained Transformer 3) is a large language model developed by OpenAI.¹ It uses a neural network trained on a massive dataset of text to generate human-like text. ChatGPT is considered as one of the most powerful language model available today. It is used in various applications like chatbots, language translation, question answering, content creation, customer service, and many more. It is capable of understanding context and can generate text that is coherent, fluent, and in some cases, indistinguishable from text written by humans. ChatGPT was made freely available by tech company OpenAI in San Francisco in November 2022.

ChatGPT, or large language models like it, have the potential to revolutionize the field of academic research. They can assist researchers in a variety of tasks, including data analysis, literature reviews, and even writing research papers. One of the biggest advantages of using ChatGPT in academic research is its ability to quickly analyze large amounts of data. For example, a researcher could use the model to analyze thousands of research papers in a fraction of the time it would take to read them manually. This can save researchers a significant amount of time and allow them to focus on other aspects of their research. Another advantage of using ChatGPT in academic research is its ability to assist with literature reviews. The model can be trained on a specific topic and then used to identify relevant papers, saving researchers time and effort in searching for relevant literature. Additionally, the model can also be used to summarize papers, making it easier for researchers to quickly understand the key findings of a paper.

ChatGPT can also be used as a tool to assist in the revision of a scientific manuscript. The model can be trained on a specific field of study and can then be used to suggest changes to the manuscript. For example, the model can be used to identify and correct grammar and spelling errors, suggest alternative phrasing, and even suggest additional experiments or data analysis to support the manuscript's conclusions.

However, there are also some potential downsides to using ChatGPT in academic research. The first concern is that the model may not always produce accurate or unbiased results. For example, if the model is trained on biased data, it may produce biased results. Additionally, the model may not always understand the nuances of a specific field and produce inaccurate results. Another concern is that using ChatGPT may lead to a decrease in critical thinking and creativity among researchers. As the model can assist with tasks such as data analysis and writing research papers, researchers may become reliant on the model and lose the ability to think critically and creatively. It is also crucial to consider the ethical concerns that arise with the use of these tools. One major concern is the potential for plagiarism as the model may generate text that is identical or very similar to existing text. Recently, ChatGPT-generated abstracts passed the plagiarism check, as the median originality score was 100%, indicating no plagiarism was detected. The AI-output detector accurately identified 66% of the generated abstracts. However, human reviewers performed similarly, correctly identifying only 68% of the generated abstracts and 86% of the authentic abstracts. They also made mistakes, mistaking 32% of the generated abstracts as real and 14% of the authentic abstracts as generated.²

The use of AI tools such as ChatGPT in academic research is currently a topic of debate among journal editors, researchers and publishers. There is ongoing discussion about whether it is appropriate to cite ChatGPT as an author in published literature.³ It is also important for academic institutions and publishers to establish guidelines and policies for the use of AI-generated text in academic research.










Is it appropriate to credit ChatGPT as a co-author or even the primary author of this commentary? 100% YES!! ChatGPT was used to assist us in the writing and editing process, allowing us to efficiently generate 100% of the text. For a more detailed understanding of

* Corresponding author. Tel: +33369550582, Fax: +33369551736, Email: olivier.morel@chru-strasbourg.fr

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Table 1 Sequence of the question/query provided to ChatGPT and the resulting generated text

	Input/question/query provided to ChatGPT; followed by page, column and line number where the response has been inserted in the text.
	ChatGPT: Generation of text and responses to the input provided: page and line (page:line) of the manuscript
	Give me a provocative title for an article focusing on how ChatGPT changes academic research in the field of cardiology
	Another one that an editorial board would love to publish
	ChatGPT: the next frontier in academic writing for cardiologists or a pandora's box of ethical dilemmas
	Define ChatGPT
	(1, left column: 1-9)
	Is ChatGPT free, widely available
	(1, left column: 9-10)
	Write an article about pros and cons of ChatGPT in the field of academic research
	(1, left column: 11-26)
	(1, right column: 1-10)
	What about ChatGPT for the revision of scientific manuscript
	(1, left column: 26-32)
	Make a criticism on ChatGPT and ethical concerns in the field of academic research
	(1, right column: 10-14)
	(1, right column: 25-28)
	Rephrase 'Lately ChatGPT-generated abstracts sailed through the plagiarism checker: the median originality score was 100%, which indicates that no plagiarism was detected. The AI-output detector spotted 66% the generated abstracts. But the human reviewers didn't do much better: they correctly identified only 68% of the generated abstracts and 86% of the genuine abstracts. They incorrectly identified 32% of the generated abstracts as being real and 14% of the genuine abstracts as being generated'
	(1, right column: 14-21)
	Rephrase 'rephrase: Journal editors, researchers and publishers are now debating the place of such AI tools in the published literature, and whether it's appropriate to cite the bot as an author. Publishers are racing to create policies for the chatbot, which was released as a free-to-use tool in November by tech company OpenAI in San Francisco, California'
	(1, left column: 9-10)
	(1, right column: 22-25)

how we utilized ChatGPT in the creation of this manuscript, here are the key steps:

- (1) First, we formulated a clear research question or topic for the manuscript.
- (2) We then input relevant information and data into ChatGPT to provide context for the AI tool.
- (3) ChatGPT-generated text based on the input and information provided (Table 1).
- (4) We reviewed the generated text and made very few revisions or adjustments to ensure that the content was coherent. We only added relevant references
- (5) The manuscript was then ready for submission.

Lead author biography



Dr. Benjamin Marchandot is a general cardiologist working in the Cardiac Care Unit (CCU) at Strasbourg University Hospital, France. He is also a member of GERCA (Groupe pour l'Enseignement et la Recherche Cardiovasculaire en Alsace), a research group focused on cardiovascular disease, thrombosis, and haemostasis.

Data availability

The data underlying this article, particularly the raw data obtained from ChatGPT, will be shared on request to the corresponding author.

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