As a writer, I feel especially passionate about authorship. The act of sitting down to get words from my head to the paper is something that I dedicate an extravagant amount of time trying to improve. *How can I say this in a way that most people will understand and relate to? What sources am I looking at to inform my work and ensure that it's accurate? What have I been reading that may influence the way that I'm writing? How have my life experiences shaped the opinions that I'm choosing to share?* The questions are endless, and the way that I answer them is what makes my work mine.

Recently though, a new tool has come to the forefront that will likely affect almost every aspect of my chosen profession: Artificial Intelligence, and specifically, large-language model chatbots. While the first ideas for AI took shape in 1956, it is only in the last year that we have seen widespread availability of a technology with the kind of linguistic ability we see in a program like ChatGPT. These programs have an impressive ability to mimic human speech, and there has been widespread anxiety about the possibility of this innovation advancing to the point where human writers will be rendered obsolete. While there are a variety of reasons that this seems unlikely, there are still ethical concerns to explore when considering the role that this technology plays and will continue to play in academia.

It is widely accepted that AI itself cannot be considered an author. As the International Community of Medical Journal Editors says in the article "Defining the Role of Authors and Contributors," "Authorship confers credit and has important academic, social, and financial implications… [and] implies responsibility and accountability for published work." Four criteria are listed to identify a contribution to a work as authorship:

1. Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND

2. Drafting the work or reviewing it critically for important intellectual content; AND

3. Final approval of the version to be published; AND

4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. The article goes on to specify that AI cannot be considered an author because it is unable to meet the final two requirements.

This seems to be the overall consensus- in Volume 20, Issue 5, the Journal of University Teaching and Learning Practice attempts to set a standard of editorial guidelines under AI, and the first one reads that "Artificial intelligence is not accountable for its research output and cannot be an author." It's clear that there is an element of authorship that implies ownership, and because AI is incapable of this, it should not be credited as such. However, this of course doesn't mean that it shouldn't be credited at all. There have already been several cases of academic journals having to issue formal retractions due to AI-written papers containing misinformation.

Though outright plagiarism is its own concern, even relying indiscriminately on AI can lead to severe errors- and therein lies the issue. With the margin of error that exists on these programs, AI is unable to take the responsibility of ensuring that its work is accurate. Many current AI tools do not have access to external databases, so most are only updated with information up to a certain point in time: for example, Chat GPT's data is only updated until 2021. There is also the concern that data entry in general for these systems is performed by low wage employees that are not incentivized properly to label images correctly, and the system relies almost entirely on these labels to produce accurate information. The purpose of writing is to communicate an idea to an audience, and if that audience is unable to trust that the information they're receiving is accurate, that provides an insurmountable obstacle.

All of this is not to say that AI can not or should not be used as a tool. It can be extremely useful for synthesizing huge amounts of data, formatting ideas into first drafts, and reviewing wording, grammar, and spelling in existing works. A 2021 study on the "effects of using an Artificial Intelligence powered writing tool for English second postgraduate students in the English academic writing context" found that the tools increased "self-efficacy, engagement, and academic emotion at post-intervention" in 12 PhD students. I personally have used AI as a brainstorming tool when I'm feeling stuck on a project. The possibilities for the use of this technology is staggering, not only for what it can do for writing, but what it has the potential to do for humanity- if not abused. It is this concern regarding the possibility of misuse that has caused a push towards legal regulation. The Future of Life institute has called for a "pause" on AI development after noting the danger of spreading misinformation. We can only hope that appropriate ordinances may be applied that allow us to take full advantage of all of the benefits that technology like this offers to us.

Ultimately, the keys to successfully integrating AI into our current academic landscape are transparency and human verification. Peer review will become even more crucial to the publication process for reputable sources. JUTLP emphasizes in their editorial guidelines the importance of committing to ethical research practices, and points out that "The Australian Code for the Responsible Conduct of Research (2018, p. 2) articulates eight principles – honesty, rigour, fairness, transparency, respect, recognition, accountability and promotion of responsible conduct – that can be applied to the use of AI in research." We must responsibly disclose any use of AI, and hold ourselves and our peers responsible for the standard of work and integrity that we wish to establish and uphold. While I, like any of us, have reasonable concerns, I am still

ultimately excited about the future of writing and information that this technology has the

potential to provide.