

Discussion on the Artificial Intelligence (AI) Tools Usage in the Scientific World

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Dear Editors,

We have been reading with great interest your editorial discussion on “Artificial Intelligence and Co-Authorship” which you initiated some time ago [1]. In the current era, the vast amount of data generated from routine applications, scientific research, and the resulting outcomes has surpassed what the human mind can read and evaluate. Therefore, there has been a need to summarize data and develop information processing-based applications for easy access, leading to the design of automated - artificial intelligence-based - tools. Nowadays, these tools are used in various processes, from data collection and analysis to hypothesis generation, experimentation, and simulation.

The use of Artificial Intelligence (AI) tools is highly beneficial in conducting and reporting scientific research. Particularly, for tasks such as literature reviews, identifying research gaps, and learning about collaborations among researchers/institutions, a wide range of AI-based tools has been developed, making it easier for researchers to accomplish these tasks. However, researchers are still seeking solutions to expedite the time-consuming aspects of writing their research.

AI can automate repetitive tasks efficiently and with minimal errors, allowing humans to focus on more creative and strategic tasks. They can make better decisions by forecasting the future based on evaluating various types of existing data. After analysing similar content, they can generate purposeful creative content. They can answer questions on topics that humans may not understand comprehensively and informatively. And of course, they can translate text and speeches accurately and fluently into other languages.

Misuse of AI tools or misinterpretation of results obtained from these applications can have significantly adverse consequences. One notable example of this is the unchecked preparation of academic papers by AI-based software. In fact, ChatGPT has been listed as a co-author in at least four articles in the literature, but corrections have been made in some cases due to its inaccuracies. When the Web of Science is searched, it is seen that ChatGPT was removed from authorship by making corrections in 1 article in which ChatGPT was previously mentioned as a co-author [2], and in two articles in the British Journalism Review and in three articles about ChatGPT in different journals, it was mentioned as a group author.



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It has been observed that while AI models like ChatGPT can generate text that appears human-like, there can be issues with interpretation and the presentation of false references, as highlighted in studies in the literature. Therefore, AI-based software like ChatGPT should not be used as co-authors without control but should be used as tools like other software, with the written text going through human oversight. As a result, the full responsibility for what these AI tools produce should rest with the author(s) submitting the article and cannot be attributed to the AI [3].

Organizations such as the Committee on Publication Ethics (COPE), the World Association of Medical Editors (WAME), and the JAMA Network are important regulatory bodies concerning the content and quality of academic publications. They emphasize that individuals who cannot fulfil authorship requirements, such as declaring conflicts of interest, managing publication rights, and licensing agreements because AI tools cannot fulfil these duties, cannot be authors of a paper [4-6]. In line with our recommendations above, these organizations also state that authors must bear full responsibility for everything the AI tool does within the manuscript and for the article's adherence to ethical standards.

In conclusion, AI-based applications contribute significantly to academic research, just as they do in many other fields, and serve as important tools for researchers in academic writing. With long-term development and improvements, we believe that they will gain the ability to write a substantial portion of academic papers as their literature review capabilities expand. However, the accuracy and originality of the written information must always be subject to human oversight to make new contributions to the literature. At this point, AI-based applications come into play again, claiming to detect the difference between AI-generated and human-created content with approximately 99% accuracy. Cases perceived as AI-generated content have been corrected through legal action or appeals to higher authorities [7]. Ultimately, the use of AI-based tools like ChatGPT and AI-generated content in academic studies, like other features of academic work, should be regulated with ethical considerations.

Yours Sincerely,

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