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ChatGPT and the Crisis of Academic Honesty

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Abstract

ChatGPT is one of the conversational AI tools that changed and still change the human life in different aspects wherein the academic and the scientific aspects seem to be affected more seriously. This paper, therefore, is an attempt to delve into some minutes of this influence in these two sensitive aspects. And this can be achieved through pinpoint its aggressions that are mainly caused by its capacities and limitations as far as scientific communication and studies are concerned. On its surface face, this AL seems to enrich scientific texts with clarity and coherence, to have a role in generation of new ideas and research methods, along with the dangers it creates to the honesty of academic efforts. The study, therefore, seems grim and pessimistic in this respect contrary to the immense praise and acceptance it receives at the universal level. It tries to call for a stricter human censorship over academic and scientific works to draw them away, as much as possible, from the injuries of this AI application. And to support this caution, it shows some of ChatGPT features and restrictions that turn it dangerous in the academic fields. And to be objective and accurate, the study refers to some of its positive aspects like its ability to help in creating coherence and clarity to scientific articles, research methods, and use in fighting plagiarism. As thus, the study highlights an urgent need for a necessary methods, restrictions, and strategies that can ensure a safe use of ChatGPT's advantages and avoiding its weaknesses whenever it is used in scientific writing.

1. Introduction

It is long ago settled that man's mind is the center of every inventive product and the source that can never be replaced by any man-made instrument or method. Scientific and academic writings and products are just one of those offsprings that man's mind and sense presented and still do. And such scientific products are effective as a bridge between generations whereby intellectual information is conveyed to the academic community and consequently arm the community with the needed means for continuity and progress. This process is as old as man's antiquity and was applied prior to any technological progress and, now, with the huge jump of that progress that is culminated in the artificial intelligence in its different phases [1].

Lately, a conversational language system was developed within an American research laboratory specializing in the field of artificial intelligence, and buttressed by the principles of Generative Pre-Trained Transformer (GPT) named ChatGPT and trained on an extensive corpus of data. This scientific effort emphasizes the fusion of cutting-edge technology and a huge dataset to achieve revolutionary results in the field of conversational AI [2]. Concretely, you can conversationally ask anything and receive a fast and adequate human-like written reply to your questions or requests such as: (a) write a small text on a given topic; (b) get information on a topic of interest; (c) compose an email or message with a certain tone, specific content, and intended for a par- ticular person; (d) correct the shape of a text or change its wording; (e) solve problems.

ChatGPT has various benefits facilitating the process of writing scientific works in aspects like referencing, helping in the choice of diction, avoiding grammatical and structural mistakes, in addition to its availability non-stop and every time [3].

In addition to the tool's ability in originating up-to-use concepts and comprehending the minutiae of scholarly topics, it is proficiently able to offer various perspectives for developing academic writing along with suggesting strategies for refinement and helping in error modifications. Accordingly, it is assumed that the tool presents a significant prospect for expanding and supporting the competencies of researchers to a great extent [4]. The ChatGPT's capacity to restructure research attempts is mainly due to its aptitude in generating new and un-attempted scenarios and strategies, expertly analyses, structuring datasets, and articulating prognostications [5].

As chatbot tools will be widely adopted in the near future, it is crucial to have international academic regulations in place to regulate their use in scientific writing and estab- lish mechanisms for identifying and penalizing unethical usage. Chatbots are simply tools, they can assist human researchers but should not be used as a replacement for human researchers' expertise, judgment, and personality.

2. Literature Review

Researchers and investors use artificial intelligence tools for tasks that cover aspects like text generation, idea development, information recovery, and the completion of academic assignments, to mention just few of them. But using these tools for those tasks or others encompass outstanding ranges of controversy and disagreement within the academic community

Findings from Studies in [6]–[8] collectively suggest that artificial intelligence can be a worthy instrument in the conception and refinement of research ideas but not to be used as a comprehensive tool for structuring and detailing the research paper completely. Thus, caution is necessary when one wants to apply AI-generated text for certain sections of scientific papers, particularly with regard to the problematic issue of plagiarism. The researchers suggest an international collaboration in the academia to reach an agreement for enacting legislation according to which any deliberate misuse of these tools should be punished severely, especially in the field of scientific research. But this suggestion does not seem easily applicable since using these tools has got an international and beyond-borders range and so, applying such restrictions across all the states in the world is almost out of reach.

The study conducted by researchers in [9] was devoted to the examination of the prospective hazards of artificial intelligence applications in the academic research publications. Furthermore, their study clarifies the ethical consequences of these tools and their influence on the integrity of academic scholarship. Following thorough analyses, the study's findings stress the urgent need for a critical contemplation of human intellect's role in the context of academic attempts, and warns against stanch reliance on these technological aids.

The primary objective of this [10] potential utility of ChatGPT, is to evaluate its use in the field of writing medical case reports. ChatGPT exhibits noteworthy proficiency in the analysis of clinical data, though it can have no role in specialized clinical training. However, it is necessary to recognize that ChatGPT has inherent limitations, and these very limitations prove that no power, whatsoever can replace human capacity. For this reason, it is seen that ChatGPT should be used as a secondary and supportive means to human authors during the writing process.

The primary objective of research [11] is to conduct an extensive literature review concerning the application of ChatGPT in academic writing, particularly focusing on its implications for disclosing plagiarism. A thorough

search was conducted across multiple databases, including Scopus, Google Scholar, ScienceDirect, and ProQuest, using carefully chosen keywords related to ChatGPT in an academic context. These keywords encompassed topics such as academia, academic research, higher education, academic publication, and ethical considerations. This review provides a comprehensive analysis of various studies that have explored ChatGPT's use in academic writing and its potential association with plagiarism. The findings contribute to our understanding of how ChatGPT can be a valuable writing tool but emphasize the importance of responsible practices to maintain academic integrity and ensure ethical usage. Acknowledging and properly attributing ChatGPT's contributions are essential in recognizing its role in preventing plagiarism, and adhering to academic writing guidelines. Authors can maximize the benefits of ChatGPT while upholding ethical standards by following established citation protocols.In contrast to [11], [12] highlights concerns related to academic dishonesty, including cheating, plagiarism, and the replication of academic content. The research findings, supported by statistical analyses, also reveal that ChatGPT exhibits a departure from the desired target levels.

Finally, a study showcases the prospective value of ChatGPT in the creation of preliminary drafts for scientific publications. Nonetheless, the researchers also noted that the material generated by ChatGPT required rigorous examination and refinement by human authors to ensure its precision and uniqueness, thereby preventing any occurrences of plagiarism [13].

3. ChatGPT and Scientific Writing

ChatGPT can provide support for scientific writing through achieving many essential functions. It helps the writers, for instance, in process like submersing and paraphrasing literary texts and even simplifying them in case of complexity. The tool also enables the inclusion of supplementary information and experimental evidence from diverse sources [6]. It is highly significant for academic writers to exercise diligence in validating these outputs that are provided by AI tools, unequivocal acceptance should be avoided and instead the texts should be tested for accuracy and appropriateness within the scholarly context.

Researchers and scholars did not anticipate the rapid advancement of technology to its current state, which has required the concerted efforts of individuals possessing academic, technical, and administrative expertise. Asa a result, ChatGPT should be used thoughtfully, considering the necessity for intelligence, clarity, and avoiding errors and shortcoming when formulating queries for artificial intelligence systems, despite their ability to detect and rectify errors prior to submission. It is also preferred not to pose general inquiries to ChatGPT that can be readily answered through web searches or conventional AI applications because if they are done, the importance of employing technology respectfully and refraining from inappropriate or malicious requests will be severely hurt.

ChatGPT readily acknowledges its lack of consciousness and operates by providing responses inputs that are required, functioning as a neural network with a remarkable capacity to produce pertinent and valuable information rooted in its wide training data. The pursuit of scientific endeavors remains an inherently human undertaking, with the potential for technology to serve as an auxiliary tool while preserving the fundamental human element within the scientific process. It is essential to keep this in mind while dealing with handmade intelligence. Along with this, recognizing the limitations of technology and artificial intelligence is significant to the same extent since they are incapable of replacing the trillions of cells constituting the human organism and perform their function properly or acceptably.

From the above discussion, we can draw the following conclusions: Firstly, ChatGPT serves as a valuable tool for researchers, aiding in the design of studies, data analysis, and the formulation of research findings in scientific research. However, it is important to recognize that ChatGPT should complement human researchers rather than replace them. Human supervision is essential at all stages of research, from inception to the validation of results [14]. Secondly, The responses generated by ChatGPT in text format should be used in research papers cautiously, as they may not always accurate and they can produce various responses to the same question when queried repeatedly.

Some studies suggest that the information generated by ChatGPT may consist of a mix of genuine and fabricated data and this can be a serious problem for the research conducted. Additionally, the issue of ownership of research

texts created by artificial intelligence algorithms raises important questions, and this a more serious danger than the previous one because it draws toward the problem of plagiarism [15]-[16].

While some scientific research has called for increased regulations on the use of AI, it is crucial to shift our focus towards providing guidance and raising awareness about its proper usage. Instead of solely highlighting the drawbacks of AI in scientific research, we must acknowledge its inevitability and ensure that researchers are equipped with the knowledge and skills needed to navigate this new and exciting landscape. But this is not without complications and drawbacks as well especially when it is found that myriad attempts are done every day in research production where dependence upon AI surpasses genuine and scientific efforts [17].

4. Chatbot Writing vs. Human Writing

The emergence of chatbots has blurred the lines between text generated by these AI systems and human-authored content because it employs high-level techniques like machine learning and natural language processing. As a result, distinguishing the genuine authorship in the era of artificial intelligence has become difficult, although many tools have been designed to discover the origin of texts that these chatbots produce. But close examination of text generated by chatbots show some differences compared to those written by real authors like: lack of precision in language expression, the inadequacy of diction that can correspond with the power of scientific research, ineffective linguistic styles suitable for scholarly work, and absence of scientific originality, in addition to ambiguity in many cases throughout the scientific research [18]. Structural, grammatical, and comprehension errors and shortcomings could be added to the list of the injuries of the machine-based scientific products. Moreover, chatbots exhibit limitations in adapting to novel situations because of their inability to dynamically respond to evolving contexts. The chatbot capacity is moreover limited or close to nothing in treating emotional reflections when handling sensitive data, and this, once more, shows their limitations in domains that only human judgment and discretion can solve. The absence of AL capability in discerning human intellect along with inexactitudes in data within the scientific research, brings an environment about wherein the quality of scholarly output is compromised. This conflicting phenomenon, therefore, pushes towards a serious increase in instances of forged scientific publications by researchers who fail, in essence, to contribute genuinely and usefully to their respective fields [19].

While ChatGPT can write credible scientific essays, the data it generates is a mix of true and completely fabricated ones. This raises concerns about the integrity and accuracy of using large language models in academic writing. It is proposed that policy and practice for evaluating scientific manuscripts for journals and conferences should be modified to maintain rigorous scientific standards and hamper, as much as possible, fraud scientific and academic works. Table below highlighting the differences between Chatbot Writing and Human Writing:

FEATURE	CHATBOT WRITING	HUMAN WRITING
Language Precision	Often lacks precision in language expression.	Typically precise, with nuanced expressions tailored to the context.
Linguistic Style	Ineffective styles for scholarly writing, sometimes generic.	Adaptable and varied styles, reflecting the author's unique voice and the work's scholarly nature.
Diction	May show inadequacy in diction for scientific research.	Employs appropriate and diverse diction suitable for scholarly work.
Emotional Intelligence	Incapable of handling sensitive data with emotional reflections.	Can empathize and incorporate emotional intelligence where necessary.
Originality	Absence of scientific originality, generating content based on training data.	Demonstrates original thought and contributes new ideas to the field.
Adaptability	Limited in adapting to novel situations or evolving contexts.	Highly adaptable, capable of responding dynamically to new information or challenges.
Error Handling	May produce structural, grammatical, and comprehension errors.	Capable of recognizing and correcting errors through proofreading and revision.
Data Accuracy	Generates content that can mix true and completely fabricated data.	Ensures data accuracy and integrity through research and verification.
Response to Context	Limited ability to dynamically respond to evolving contexts.	Contextually aware, capable of nuanced understanding and responses.
Scientific Integrity	Risk of compromising scientific integrity with fabricated data.	Upholds scientific integrity through rigorous research and ethical standards.
Creativity and Innovation	Limited to existing knowledge and patterns within its training data.	Capable of creative thought and innovation beyond existing knowledge.
Policy and Practice Impact	Necessitates modification of policies for evaluating scientific manuscripts.	Contributes to the development of standards and practices that enhance scientific discourse.

5. Conclusions and recommendations

The paper, as its title hints at, concludes that despites its immense facilitating abilities, this AI technology could be of serious concerns and consequences for human original effort in the field of academic writing. It also concludes that, based on the results got and experiences made in this field, human intellect in scientific efforts are irreplaceable and only strict regulations can guarantee a safe use of AI in academic writing. The integration of AI into academic and scientific endeavors raises critical ethical and philosophical questions. The reliance on AI for generating content and facilitating research introduces concerns regarding the originality and authenticity of intellectual outputs. As we navigate the benefits of AI assistance, it's imperative to maintain a clear delineation between human ingenuity and machine-generated content. This distinction is crucial for preserving the integrity of academic contributions and fostering an environment where human creativity and machine efficiency coexist in harmony, enhancing rather than replacing the human element in scholarly pursuits. Therefor, the paper calls for a responsible and under-control use of ChatGPT, and suggests that it should be dealt with as a complementary tool rather than a substitute for human effort although it sees that achieving this goal is complicated and close to impossibility if such AI techniques remain open to use irresponsibly. The study, furthermore, concludes that true and authentic scientific investigation and writing can be achieved only through human intellect. One more and, may be, daring recommendation is that, if possible, there should be regulations and conditions for accessing such AI tools at the international level, since its present and free employment posed and poses serious damages to the route of scientific and academic works.

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