

The Development of Scientific Research and Its Institutions in Algeria in Light of Artificial Intelligence Applications - International Experiences and Foresight Workshop

Haddad Salah

University of Hassiba Ben Bouali – Chlef (Algeria)

Email : s.haddad@univ-chlef.dz

Zeggaoui Meregueb

University of Hassiba Ben Bouali – Chlef (Algeria)

Email : m.zeggaoui@univ-chlef.dz

Received : 28 /04 /2026

Accepted : 03/07/2026

Published : 11/08/2026

Abstract:

This study reviews the contribution of artificial intelligence applications to improving the quality and efficiency of scientific research. These applications benefit researchers by assisting them in various aspects, including research and investigation, writing and editing, academic communication, documentation and citation, previous studies, field studies, building measurement tools, organizing ideas, time management, and defining appropriate plans and methodologies. The study highlights the use of AI in processing and analyzing data quickly and accurately, enabling researchers to make informed decisions and enhance the effectiveness of their research. It also explores the ethical challenges associated with adopting these technologies, offering advice on how to use them responsibly and safely. Furthermore, the study aims to provide researchers with a framework that allows them to maximize the benefits of AI applications, contributing to the achievement of innovative and impactful research outcome.

Keywords: Artificial Intelligence, Scientific Research, academic communication

Introduction

Artificial intelligence applications are among the most important technological innovations of modern times and have become essential tools for improving the quality of scientific research and increasing its efficiency. Today, research communities face multiple challenges, such as the increasing volume of data, the complexity of research problems, and the need for accurate and timely results. Here, artificial intelligence emerges as an effective solution that can help address these challenges. These applications contribute to automating many routine processes that were previously time-consuming, such as data collection, analysis, and providing conclusions based on advanced machine learning techniques. AI tools enable researchers to analyze vast amounts of information in short periods, increasing the speed and effectiveness of research. Moreover, the use of artificial intelligence is not limited to improving technical aspects; it also extends to enhancing academic communication and facilitating collaboration among researchers. With tools such as machine translation, reference management, and linguistic proofreading, researchers can improve the quality of their academic writing and broaden their communication with colleagues worldwide.

Amid these developments, the need for effective strategies to utilize artificial intelligence becomes urgent, as researchers must understand how to integrate these tools into their work to achieve research objectives effectively without compromising academic integrity. Thus, the role of artificial intelligence emerges as a vital element in the scientific future, contributing to expanding research horizons and providing innovative solutions to current challenges. Accordingly, the following problem can be posed: "**Can artificial intelligence applications contribute to improving the quality of scientific research and increasing its efficiency?**"

1. Sub-questions: Based on the main question, the following sub-questions can be posed:

- What are the areas of application for artificial intelligence in scientific research?
- What opportunities do artificial intelligence platforms offer for scientific research?
- What are the future challenges of artificial intelligence in scientific research?

2.1 Importance of the Study:

The importance of this study lies in its comprehensive examination of the role of artificial intelligence (AI) applications in scientific research. Key aspects include:

- By providing precise tools for data and content analysis, AI contributes to higher quality research outputs, ensuring that findings are accurate and reliable.
- The study explores the ethical implications of using AI in research, offering insights into responsible practices that researchers can adopt to mitigate risks.
- By analyzing the growing role of AI in scientific inquiry, the study helps forecast how these technologies will shape the future of research and elevate academic standards.

3.1 Objectives of the Study: The objectives of the study are to highlight the following elements:

- **Identify and Analyze AI Applications:** To identify and analyze the artificial intelligence applications currently used to enhance academic integrity in scientific research.
- **Evaluate Effectiveness in Plagiarism Detection:** To evaluate the effectiveness of AI applications in detecting plagiarism and addressing scientific misconduct.
- **Study Peer Review Impact:** To study the impact of using AI on the quality and efficiency of the peer review process in scholarly publications.
- **Explore Research Data Management:** To explore the role of AI in improving research data management, ensuring data integrity, and facilitating better data handling practices.

4.1 Study Structure

This study has been divided into two axes. The first axis addresses the conceptual framework of artificial intelligence and its contribution to the field of scientific research. As for the second axis, we explored the uses of artificial intelligence in scientific research and the future challenges it faces in this field.

Section One: Theoretical Framework of Artificial Intelligence

In this part, a theoretical overview of artificial intelligence will be provided regarding its concepts.

1.1 Definition of Artificial Intelligence:

- Artificial intelligence (AI) is a branch of computer science that focuses on developing intelligent programs (systems) that can perform tasks that traditionally require human intelligence. AI systems can learn from data, recognize patterns, and make decisions with little or no human intervention. By combining complex algorithms with powerful computing resources, these systems can process large amounts of information quickly and accurately. This makes them a valuable tool for scientists in many fields who need to analyze complex data sets or make predictions about future events. For example, researchers studying climate change have used AI because it enables them to run simulations faster than ever before and gain insights into the impact of environmental factors on global temperatures over time periods far longer than a single scientist could study alone. (sereenu, 2023)
- Artificial intelligence (AI) is a rapidly evolving field of technology that involves the development of intelligent machines that can perform tasks that typically require human intelligence, such as understanding natural language, recognizing patterns, and making decisions based on data. AI is the ability of machines to adapt to new and emerging situations, problem-solve, answer questions, create plans, and perform other intelligent functions typically associated with human beings. AI refers to the field of computer science that involves creating computer programs capable of imitating intelligent behavior and ideally enhancing human-like abilities (Naquivi, 2020)
- AI, a swiftly expanding discipline, encompasses the development of intelligent robots capable of emulating human thought processes and actions, finding utility in diverse areas such as medical diagnosis, self-driving cars, and education (Wardat a. , 2023)

1.2 Opportunities Provided by Artificial Intelligence Platforms for Scientific Research:

Although there are ethical concerns about fully integrating artificial intelligence into scientific research, AI platforms offer significant advantages when used properly. These benefits include time savings, practical applications, literature summarization, and research gap identification. Without these tools, scientists would need to manually analyze data using traditional methods, but AI has greatly simplified this process.

One major advantage is the assistance AI provides to individuals struggling with complex mathematical formulas, enabling them to analyze data more efficiently. AI platforms also expedite the summarization of relevant literature and the identification of research gaps, which accelerates the innovation process, shortens study publication timelines, and makes scientific work more accessible by improving writing fluency.

Conversely, these platforms might diminish research quality and efficiency and significantly alter researchers' independence. However, AI tools, particularly chatbots like ChatGPT, allow researchers to conduct studies more rapidly. Additionally, AI platforms cater to individual preferences and learning needs, offering tailored and effective educational experiences. Moreover, AI platforms enable researchers to quickly identify research gaps in their fields of interest, which is especially beneficial for graduate students. This capability also enhances practical applications, as extensive research on a specific topic does not always yield the expected results. We believe that leveraging AI platforms in this manner will provide scientists with fresh perspectives, leading to

more efficient research, quicker completion of studies, and faster publication (Özcan & Polat, 2023, pp. 84-85)

The Contribution of Artificial Intelligence in Promoting Academic Integrity in Education

Artificial intelligence (AI) can significantly contribute to enhancing academic integrity in education and scientific research. Below are some ways in which AI can help promote academic integrity: (Jarrah, Wardat, & Patricia , 2023, pp. 03-04)

1. **Plagiarism Detection:** AI-powered plagiarism detection systems can quickly analyze and compare text to identify instances of plagiarism.
2. **Authenticity Verification:** AI can assist researchers in ensuring the originality of their work. AI writing assistants can provide feedback and critiques to help researchers write better while avoiding unintentional plagiarism.
3. **Automated Citation and Referencing:** AI tools can simplify the process of citation and referencing by automatically generating accurate citations based on specific reference styles.
4. **Academic Integrity Education:** AI can be used to develop interactive educational programs, modules, and resources on academic integrity. These resources can guide researchers on how to recognize plagiarism, use sources ethically, cite sources correctly, and paraphrase appropriately.
5. **Monitoring and Cheating Detection:** AI-based monitoring systems can observe and analyze researchers' behavior during online assessments to detect potential instances of cheating or academic misconduct. These systems use facial recognition, eye tracking, and keystroke analysis to identify suspicious activities.
6. **Personalized Feedback:** AI-powered feedback systems can provide personalized and timely feedback on academic tasks. By analyzing researchers' work and offering tailored suggestions, these systems can help improve writing skills and, therefore, promote academic integrity.

Although AI plays a crucial role in enhancing academic integrity, it is important to understand that these technologies have limitations. They are not error-proof and should be used with human judgment and expertise. Furthermore, ethical considerations, transparency, and the privacy of researchers must be carefully addressed when applying AI technologies in educational environments.

1.3The Contribution of Artificial Intelligence Applications in Scientific Research

AI tools contribute to academic research by generating diverse and dynamic content that aligns with your research objectives through the following:

- **Generating Customized Educational Materials:** AI creates tailored educational materials that meet research goals by analyzing behaviors and needs accurately.
- **Aggregating Required Educational Resources:** It collects the necessary and suitable educational resources for research by compiling them.
- **Adapting Content to Meet Researcher Needs:** AI adjusts content according to your needs as a researcher, ensuring it aligns with the style and methodology of your scientific research.
- **Data and Information Analysis:** AI analyzes data and information based on the criteria you provide.

Image and Video Analysis

When conducting scientific research, you may need images and videos. AI is an excellent tool for this purpose as it helps:

- **Enhance Data Analysis:** AI improves data analysis and identifies patterns and trends that human researchers may struggle to detect, leading to more reliable conclusions.
- **Accurate Object Recognition:** AI can accurately identify objects in images and videos, which is particularly useful in medical research and satellite imagery analysis.
- **Automated Video Content Transcription:** AI automatically transcribes video content, making it easier to search and analyze video data, saving time and effort.
- **Content Summarization:** AI can summarize content, extracting key information and providing concise summaries without the need to watch the entire video.

AI Book Summarization

Using AI to summarize books is a vital field in academic research, as it enhances access to knowledge and information faster and more efficiently. AI-based book summarization represents a significant advancement in academic research, facilitating knowledge transfer and learning more effectively.

AI develops intelligent systems using advanced technologies such as natural language processing and machine learning to extract summaries from books and academic papers. This approach allows researchers to access important information without having to read entire texts. With advancements in linguistic analysis and human-computer interaction, generating accurate summaries and comprehensible content has become easier, aiding research and study processes. Additionally, AI can offer new insights and advanced analyses, helping researchers develop ideas and deepen their understanding of various academic topics (Mohammed, 2024)

1.4 Fields of Application for Artificial Intelligence in Scientific Research

Applications of artificial intelligence can be used in various fields within scientific research. Some of the most prominent areas include: (Megahed, 2023, p. 07)

1. These applications support preliminary research processes by providing various information sources. Global information databases often have intelligent search capabilities that assist in retrieval.
2. These applications support the analysis of big data and the extraction of hidden information, as seen in big data analytics platforms.
3. These applications, especially tools like ChatGPT, assist in predicting future trends based on historical data provided by users.
4. These applications help with language and terminology correction.
5. These applications support the organization, classification, and sorting of scientific research according to topic and scientific field.
6. These tools assist in analyzing certain research texts and understanding various concepts based on the data they have been fed.

Second Axis: The Uses of Artificial Intelligence in the Field of Scientific Research and the Future Challenges It Face

2.1 Important Uses of Artificial Intelligence Applications in Scientific Research.

These tools can be used to access scientific data and references, as well as to explore research ideas. They can also be used to access various links to relevant scientific references in different global

databases, reducing time and effort, providing more accuracy, and offering various types of information. The tools provide comprehensive information and data related to the research topic, and they can be used while adhering to the standards of academic integrity established at both local and international levels. The following table shows some tools that might benefit academic researchers (Zaa'batta & Sabbagh, 2023, p. 150)

Table 1: illustrates the artificial intelligence tools that assist researchers in their research :

Tool Name	uses	Access Link
Chat gpt 4	A powerful language model, optimized for dialogue, capable of answering questions, creating interactive conversations between robots and humans, and correcting errors. It is used in scientific research for language modeling, text generation, content analysis, translation, knowledge representation, data analysis, and information retrieval...	https://openai.com/index/gpt-4/
You.com	Customizing a search engine tailored to the researcher's needs, providing... Time, alerts, notifications for new information, narrowing the search scope using explanations, powerful search with precise results in a short time, constant updates on the latest news and trends.	https://you.com
ANDI	Utilizing advanced artificial intelligence algorithms to quickly and easily access the latest information, obtaining customized experiences tailored to personal needs with greater accuracy. The conversation is interactive, fostering innovation.	https://andisearch.com
Perplexity AI	Searching in natural language, utilizing OpenAI WebGPT to operate a custom search engine, ease of finding information, and obtaining visual representation of answers to queries from Twitter.	https://www.perplexity.ai
Buildt	Modifying programming instructions, saving time, accuracy of results, and customizing search results according to specific needs	https://www.buildt.ai

Bookabout	Searching for documents using artificial intelligence, quickly finding books, searching for books based on concepts or ideas rather than just keywords, obtaining comprehensive results better than traditional search engines, and getting recommendations for books related to the topic.	https://bookabout.io
Komo	Benefit from prioritizing research, engaging in meaningful conversations and exploring topics through chat, obtaining quick answers and accessing resources, and receiving customized results tailored to individual needs.	https://komo.ai
teach anything	Getting quick answers to any questions, language options, determining the difficulty level that suits your needs, and finding answers quickly and easily.	https://www.teachanything.com
ChatGPT For Search Engines	Natural language answers, receiving responses to any question, accurate results, easy access to the language model through the user interface, and a powerful model. Access to quick and precise results regarding your research topic.	https://aifinder.info/ai-searchengines/chatgpt-for-search-engines
crowdview	Uses artificial intelligence technology, domain discovery, creative names, customization options, and distinction.	https://crowdview.ai
Explore AI	This innovative tool allows users to quickly and easily search for answers within thousands of YouTube video clips. Users can swiftly find the information they need without spending time searching across multiple websites. It is an AI-powered search engine that is fast and efficient, providing users with the most accurate results in a fraction of the time.	https://exploreaivercel.app

LEXII.AI	Obtaining accurate and specific information, considered a search assistant based on artificial intelligence technology, ChatGPT-3, easy access to information, and speed and accuracy in retrieving information.	https://lexii.ai
askan.ai	"Advanced algorithms are used in artificial intelligence to easily discover domains, customize names that are then created according to the researcher's needs, save time, and provide accurate answers."	https://www.askan.ai

Source : Zaa'batta & Sabbagh, 2023,Op.cit.,p151-152

"Note: The more precise the input given to these tools, the more desirable their outputs will be."

AI tools assist in generating research ideas, formulating questions, and developing research hypotheses:

The aforementioned search engines are considered as supportive tools, enabling researchers to access ideas that benefit their research. However, there are numerous tools specifically designed for this purpose that can help researchers build a conceptual framework for their study by gathering relevant data on their research topic, as well as analyzing data provided by the researcher. These tools can also assist researchers in finding connections between their study and previous research or variables that may be related to their topic. They can help researchers formulate research questions, develop hypotheses, and set objectives and significance of their study based on scientific and methodological principles. However, researchers should use these tools in accordance with the ethical guidelines and scientific integrity standards set by relevant local bodies. The following table presents some AI tools that can aid researchers in their scientific research and studies.

Table (2) illustrates the uses of some artificial intelligence tools in helping to develop research ideas, formulate questions, and construct research hypotheses.

Tool Name	uses	Access Link
GPT-Prompter	A quick explanation of the highlighted text, full understanding of all selected content, easy and fast access to definitions, synonyms, and other information, the use of insight to quickly grasp the meaning of the selected text, better understanding of the material, and using this tool to search for unfamiliar words.	https://www.gptprompter.com
YouTube Summarized	Saving time by quickly summarizing YouTube videos using AI services, such as OpenAI, providing accurate summaries that can be customized according to the specific	https://youtubesummarized.com

	needs of the researcher. It is efficient by allowing access to the main points without watching the entire video	
Consensus	Utilizing advanced AI algorithms to extract, aggregate, and summarize data quickly and accurately, providing a comprehensive overview of the latest research in a small portion of time. Detailed analysis allows for receiving in-depth data insights to make informed decisions. It saves time and effort by quickly locating the most relevant and up-to-date information. This represents a knowledge revolution in how scientific data is accessed and interpreted collectively	https://consensus / .app
Socratic by Google	AI-assisted learning provides personalized advice and guidance on how to approach academic materials. Visual explanations help in understanding core concepts through the interpretations provided by AI. Researchers receive personalized tips and recommendations to make progress in their studies, enabling academic advancement.	https://socratic.or g
Rytr	AI-assisted writing enables the creation of high-quality content, generating ideas and structuring the material. It helps with editing and refinement, providing open suggestions for improvements, selecting the right words, and finding appropriate expressions for ideas. It also aids in research and data retrieval, offering access to studies and data for support.	https://rytr.me/?vi a=aifinder
yippity	Anything pasted or written inside the text box is converted into a series of questions and answers that the researcher can benefit from and copy into their own study cards.	https://yippity.io

PatentPal	Generating new ideas and concepts with AI, identifying areas for improvement in patent applications, and saving time and resources in the intellectual property creation process.	https://patentpal.com
-----------	---	---

Source : Zaa'batta & Sabbagh, 2023,Op.cit.,p153

Note: These tools can be used for research and investigation, summarizing previous studies, and benefiting from them.

The use of AI tools assists in obtaining previous studies and research literature related to the study topic. AI tools can be used in this regard to quickly and efficiently access previous studies relevant to the topic, classify them, and even create a specialized library. Additionally, they help analyze and summarize the data according to the researcher's needs and objectives. These tools also assist in analyzing the relevant research literature, contributing to a critical review of various previous studies and research literature, and identifying where the current study stands in relation to these studies. Furthermore, they provide suggestions that can enhance the quality of the research. However, it is essential to use them without compromising academic integrity and ethical standards associated with scientific research.

Below is a set of tools that focus on this area, as shown in the following table.

Table (3) illustrates the AI tools that assist researchers in previous studies and research literature.

Tool Name	uses	Access Link
researchrabbit	Exploring and visualizing research papers and authors, receiving notifications when relevant papers are published, global access, access to various databases, ensuring privacy, and being free of charge.	https://www.researchrabbit.ai
Skimit.ai	Comprehensive summaries of any article within 10 minutes, saving time. The content is shareable, with summaries delivered directly to the email inbox and the option to share on social media.	https://www.skimit.ai
TechCrunch Summary	Saving time by quickly summarizing articles, utilizing AI algorithms for summarization. Accurate summaries that can be customized according to the researcher's specific needs. Convenient access to summaries from any device.	https://newssummarizer.vercel.app
Elicit	A powerful tool that uses language models to streamline the research workflow, such as literature review, utilizing relevant documents without requiring exact keyword matching, and summarizing the main points	https://elicit.org

	of the paper "Relevant to your inquiry, extracting basic information, summarizing, classifying the text, saving time and energy, and providing quick and easy access to the information needed by the researcher to complete their research project.	
Papers GPT	"Pre-trained generative transformers can be used to comprehend any scientific papers, allowing them to gain a deep and personalized understanding and connect any type of data. This technology has the potential to revolutionize the way we access and use information, as it can process large amounts of data quickly and accurately. It can also be used to create more precise models and predictions, as well as to identify patterns and trends in data. Furthermore, it can be used to develop more efficient and effective search algorithms, enabling users to find the information they need quickly and easily. Ultimately, GPT can be used to make data more accessible and useful, allowing us to gain a better understanding of the world around us."	https://jessezhang.org/
Scispace	"It is an ideal tool for decrypting any research paper, reading and understanding scientific literature quickly and easily, distinguishing any text, asking questions and receiving immediate answers. If searching for relevant papers, there is no need to specify keywords, and it can unveil the secrets of any research paper at any time."	/https://typeset.io
chatpdf	"Research and understanding can be enhanced using PDF summaries and direct links, avoiding the hassle of downloading documents, finding research papers quickly, and gaining a better understanding of the material. This platform is considered the ideal solution for any researcher looking for fast access to research papers. It enhances the	https://www.chatpdf.com

	personal learning experience, understanding textbooks and articles, presentations, analyzing documents, providing researchers with the information they need quickly, maintaining cloud storage, discovering new opinions, understanding any language, and answering any question from any PDF file."	
--	---	--

Source : Zaa'batta & Sabbagh, 2023,Op.cit.,p154-155

"Uses of artificial intelligence tools to assist researchers in writing, editing, and translation"

"Uses of artificial intelligence tools to assist researchers in writing, editing, and translation can greatly benefit them by providing relevant data and information needed for their research texts. These tools help reduce typographical, grammatical, and linguistic errors, improving the quality of the research paper. They also assist in detecting academic plagiarism and scientific theft, which helps researchers avoid such risks. Additionally, AI tools provide ready-made templates for presenting and writing research more accurately and efficiently. They facilitate access to various research papers and their quick, specialized translation, allowing researchers to benefit from available literature across different databases with ease, accuracy, and speed. Researchers should ensure that while using these tools, they do not breach ethical research standards and adhere to scientific integrity. Below, we review a set of tools specialized in this area as outlined in the following table:"

"Table 4 illustrates the uses of some artificial intelligence tools to assist researchers in writing, editing, and translation."

Tool Name	uses	Access Link
Maester.app	Exploring and visualizing research papers and authors, receiving notifications when relevant papers are published, global access, access to various databases, ensuring privacy, and being free of charge.	/https://maester.app
NeuroSpell	"Accurate corrections for spelling and grammatical errors automatically, multilingual, available in over 30 languages, customizable, enhances and enriches texts precisely, and provides technical proofreading with RPA for language proofreading."	/https://neurospell.com
Corrector App	Flexible automatic writing, summarization of key points, explanation, rewriting content in a different way while maintaining the same meaning, editing a document or message for improvement, and translating text with high	/https://corrector.app

	accuracy using artificial intelligence."	
OthersideAI	"Flexible automatic writing, summarization of key points, explanation, rewriting content in a different way while maintaining the same meaning, editing a document or message for improvement, and translating text with high accuracy using artificial intelligence."	https://www.hyperwrite /ai.com
WebCopilot	"Creating documents with the help of artificial intelligence, accelerating workflow, focusing on important tasks, drafting specific pages with precision and speed, improving writing, and writing faster and more efficiently, allowing more time to focus on important matters."	https://www.webcopilo /t.ai
Compose	"A revolutionary approach to writing using artificial intelligence, saving up to 40% of the time spent on writing. It is considered an ideal tool for editing and writing documents."	https://www.compose. /ai

Source : Zaa'batta & Sabbagh, 2023,Op.cit.,p165-157

These tools can be used throughout the entire research process, not just in one specific area identified by the researchers. However, this specification came from the researchers through their critical study of the various tools.

- All the tools discussed in the research paper are free and accessible to any researcher through the links provided next to each tool.
- Researchers must exercise caution when using these tools, as, no matter how accurate they may be, they rely on the commands given by the researcher. They process data similarly to how a bureaucrat deals with laws and regulations.
- For optimal use of these tools, the researcher must issue precise and carefully formulated commands, using specific phrases, to achieve the desired outcomes.
- It is important for the researcher to consider that, despite the accuracy and effectiveness of these tools, they remain mere tools and auxiliary means, not ends in themselves.

2.1 Future Challenges of Artificial Intelligence in Scientific Research:

If we assume that ChatGPT is just the beginning, we can expect more advanced versions to be released by different companies in the future, and the issues surrounding it might be resolved. Although the ethical appropriateness of the matter is not entirely clear at present, we believe that people will not be able to resist using such programs. Despite several researchers debating whether artificial intelligence can be considered an author and questioning whether the author of an article

written by AI is the writer of the article, the AI itself, or its developer, there are already some articles where ChatGPT is listed as the author, and they have been published.

In reality, the issue is not limited to ChatGPT, as both Baidu and Google have also announced that they will soon launch their own AI platforms. These programs might be available online in the near future. Apart from this, there are currently many AI-powered platforms ready for use, such as ChatPDF, Scite Assistant, Consensus, and SciSpace. Therefore, this issue should be addressed from a broader perspective, not just focused on one specific program. Comprehensive ethical principles should be defined.

It can be argued that setting ethical boundaries regarding the use of AI-powered platforms in the research process depends on academic authorities rather than researchers. Organizations such as the American Psychological Association (APA) and the Committee on Publication Ethics (COPE) should quickly publish ethical guidelines and citation rules concerning the use of AI platforms in academic research. While an APA blog post has provided information on how to cite ChatGPT, clear rules have not yet been established.

Moreover, there is currently no consensus on whether AI platforms can be used in articles or not. Additionally, editors and publishers of academic journals should swiftly and transparently determine ethical procedures for their journals regarding the use of AI chatbots in academic publications and clarify how to address this issue (Özcan & Polat, 2023, p. 83)

Conclusion:

Artificial intelligence (AI) applications have become essential in enhancing the quality and efficiency of scientific research. By automating routine tasks, optimizing data analysis, and facilitating communication, AI tools empower researchers to focus on innovation and critical thinking. However, their integration into research practices must be approached thoughtfully, ensuring adherence to ethical standards and the maintenance of academic integrity. While AI can significantly streamline the research process, it should be viewed as a complement to traditional methodologies rather than a replacement. The future of scientific inquiry will likely involve a harmonious collaboration between human insight and AI capabilities, leading to more impactful discoveries. Nonetheless, the research community must remain vigilant in addressing the ethical implications and challenges that arise with the adoption of AI technologies, ensuring that these tools serve to enhance, rather than undermine, the fundamental principles of scholarly work.

Findings:

- The current use of artificial intelligence tools in scientific research, as auxiliary tools while adhering to the principles of academic integrity and research ethics, is considered a standard practice within the framework of using modern technologies in scientific research.
- The researchers believe that these tools should be used cautiously and regarded as mere aids in their research, without relying on them completely.
- The use of artificial intelligence tools does not negate other research methods but rather enhances and increases the opportunity to benefit from them more effectively.
- AI tools are useful auxiliary instruments for researchers in social and human sciences, as they are in other fields. In this research paper, the researchers have attempted to provide researchers with a set of tools, explaining their uses and providing links to access them.

- This research paper serves as a scientific guide, based on a critical analysis approach, from which every researcher can benefit.

Recommendations:

Here are some **recommendations** for using artificial intelligence (AI) to promote academic integrity in scientific research:

1. **Implement AI-powered plagiarism detection tools:** Universities and research institutions should integrate advanced AI tools to detect plagiarism and ensure originality in research outputs, thereby upholding academic integrity.
2. **Develop AI-based citation and referencing systems:** Researchers should adopt AI-driven tools that automate citation and referencing to avoid errors, ensuring proper acknowledgment of sources and reducing the risk of accidental plagiarism.
3. **Promote the use of AI for data validation:** Encourage the use of AI applications to verify the accuracy of data, detect inconsistencies, and minimize errors, enhancing the credibility of research findings.
4. **Offer training on AI ethics in research:** Institutions should provide training programs on the ethical use of AI in scientific research, emphasizing transparency, fairness, and accountability.
5. **Collaborate on AI policy development:** Research institutions should work together to create standardized guidelines for the ethical use of AI in academic research, ensuring its application supports integrity while respecting privacy and intellectual property.
6. **Monitor AI advancements:** Continuously assess and update AI tools to keep up with advancements in technology, ensuring that these tools remain effective and relevant in promoting academic integrity.

These recommendations can guide researchers and institutions in leveraging AI to foster a more ethical and credible research environment

References:

- Özcan, A., & Polat, S. (2023). Artificial Intelligence and Chat Bots in Academic Research. *Journal of Research in Social Sciences and Language*, 3(2), 81-90.
- Jarrah, A. M., Wardat, Y., & Patricia, P. (2023). Using ChatGPT in academic writing is (not) a form of plagiarism: What does the literature say? *Online Journal of Communication and Media Technologies*, 13(04), 01-20.
- Megahed, A. (2023). *Applications of Artificial Intelligence in Scientific Research*. Récupéré sur <https://www.academia.edu/>
https://www.academia.edu/108786204/%D8%AA%D8%B7%D8%A8%D9%8A%D9%82%D8%A7%D8%AA_%D8%A7%D9%84%D8%B0%D9%83%D8%A7%D8%A1_%D8%A7%D9%84%D8%A7%D8%B5%D8%B7%D9%86%D8%A7%D8%B9%D9%8A_%D9%81%D9%8A_%D8%A7%D9%84%D8%A8%D8%AD%D8%AB_%D8%A7%D9%84%D8%B9%D9%84%D9%85%D9%8A
- Mohammed, M. A. (2024, april 07). *The role of artificial intelligence in academic scientific research*. Récupéré sur <https://sci.uokufa.edu.iq/>
<https://sci.uokufa.edu.iq/archives/35544#:~:text=%D8%AA%D9%86%D8%B9%D9%83%D8%B3%20%D8%A3%D9%87%D9%85%D9%8A%D8%A9%20%D8%A3%D8%AF%D>

9%88%D8%A7%D8%AA%20%D8%A7%D9%84%D8%B0%D9%83%D8%A7%D8%A1
%20%D8%A7%D9%84%D8%A7%D8%B5%D8%B7%D9%86%D8%A7%D8%B9%D9%
8A,%D9%81%D9%8A%

Naquivi. (2020). *Artificial intelligence for audit, forensic accounting, and valuation: A strategic.*

sereenu. (2023). *How can artificial intelligence accelerate scientific research?* Récupéré sur
<https://scientificnirvana.com/how-can-artificial-intelligence-accelerate-scientific-research>

Wardat, a. (2023). ChatGpt:A revolutionany tool for teaching. *EURASIA Journal of Mathematics, Science and Technology*, 19(07).

Wardat, Y. T. (s.d.).

Zaa'batta, S. H., & Sabbagh, O. (2023, 11). The use of artificial intelligence Tools in scientific research in the field of social and human sciences advantages and limits. *Journal of Humanities*, 34(3), 145-163.