

## Role of Artificial Intelligence for Research Scholars: Boon or Bane

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### Abstract

*Due to the rapid advancement in technology, the role of artificial intelligence in academic research has made significant progress, which has the potential to change the way research is conducted by research scholars. Therefore, the aim of the present study is to highlight the role of AI in academic research and explain how various AI tools will be used to analyze scientific articles, organize research papers, search academic publications, provide answers and information, etc., so that researchers can enhance their research work. Additionally, the study also highlights various advantages of using AI tools such as quick analysis of large data sets, reducing the chances of human error, improving content and structuring, etc., so that researchers can promote innovation in their research. In addition, the drawbacks of using AI in research such as lack of ethical and emotional consideration, lack of improvement, decline in human self-efficacy, reduce originality and creativity, data privacy and security etc. are also discussed. Finally, the concluding remarks for using AI in research by research scholars are discussed.*

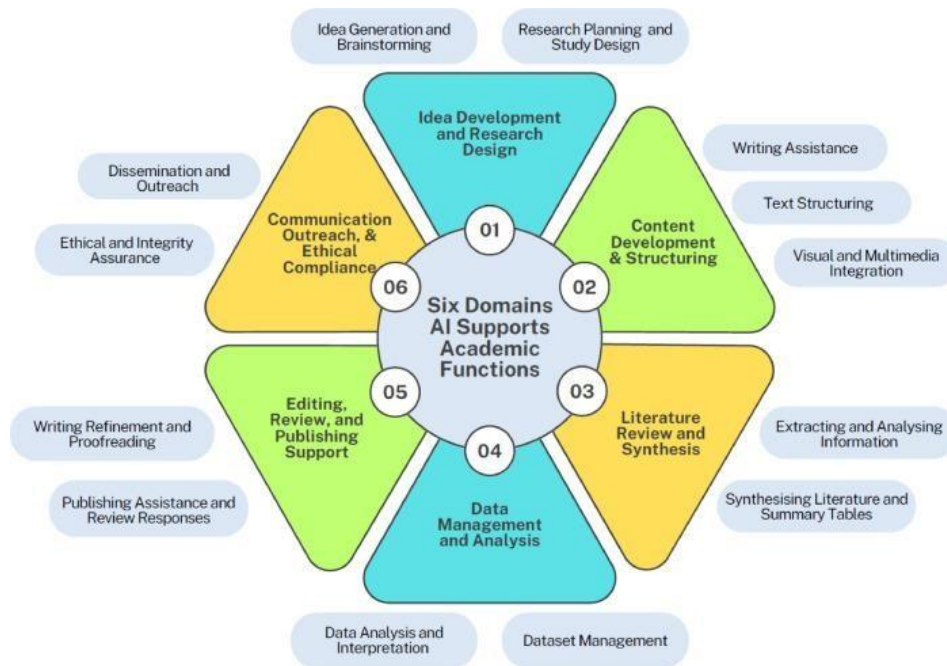
**Keywords-** Artificial Intelligence, role, benefits and drawback

## **Introduction**

Artificial Intelligence (AI) is a collection of technologies that give computers the ability to perform a variety of complex tasks, such as seeing, understanding, and translating spoken and written language, analyzing data, making suggestions, etc. In the modern era, artificial intelligence (AI) has become known as a term that has the potential to bring about a transformation in many fields, including education. Artificial intelligence is the ability to duplicate human behaviour intelligently in every circumstance so that activities can be completed with technology practically and efficiently (Abe, 2024). Research is one of the areas where AI has made significant progress, with the potential to transform the way research is conducted. AI has brought about tremendous changes to academia, revolutionizing how research is done, knowledge is produced, and education is delivered. Although AI can simplify research, research scholars must accept and adjust to this potent tool while also being aware of its drawbacks and moral ramifications. By finding a balance between human creativity and AI-driven automation, researchers might expand scientific understanding, open up new avenues for investigation, and contribute to transformational potential that could speed up scientific discovery and improve the calibre of research findings. Therefore, the study aims to examine the advantages and difficulties of using AI in research-by-research scholars that emphasize the potential and challenges of using AI technologies in the field of their study. The study also aims to provide a thorough understanding of the implications of AI in research and offer insights into navigating the changing landscape of AI-driven research methodologies by looking at the current state of AI applications in research and exploring the ethical issues and limitations.

### **Role and Benefits of AI for Research Scholars:**

Artificial intelligence has an important role in the field of research. It can help researchers in many ways. It is given in the picture below;



<https://www.google.com>

These are the areas where researchers can use AI to make their studies more effective.

- It can analyze large data set very quickly and correctly (Pangandaman, 2024; Abe, 2024).
- It can help researchers to collaborate and communicate with others.
- It can reduce the chances of human error.
- It can help researchers with easy editing and publishing.
- It can help the researchers improve the writing and structure of content.
- It can help the researchers to easily search and citation of papers.
- It can enhance the efficacy and precision of the study.

### AI tools in Research:

The use of artificial intelligence (AI) in research yields several noteworthy benefits that greatly advance scientific investigation and creativity. The various AI tools are given which are useful in research work for research scholars:

- **Julius-** It is an AI tool designed specifically for contemporary scholarly study. It sets itself apart by providing individualized support for literature reviews and statistical analysis, which makes it a priceless tool for both academics and students. Users can

view data patterns, evaluate datasets, and get advice on how to organize their study findings with Julius. For both students and researchers, it is sophisticated data processing features provide a far less irritating experience than R or SPSS.

- **Zotero**-The process of gathering, organizing, and citing research is made smooth by Zotero. It helps academic writers by making the process of creating bibliographies easier and integrating with word processors.
- **ChatGPT**- Research-related task including writing, research technique, and citation can be aided by ChatGPT, a generative AI tool. It also examines and combines information from researchers to create titles that are effective and succinct because of its capacity to comprehend and produce human-like text. However, it has some ethical considerations of using ChatGPT in research.
- **Quillbot**-It can generate high-quality text. It is similar to the more widely used Grammarly app, which is driven by AI. In addition to being incredibly beneficial, these tools might teach students synonyms, grammar rules, and sentence construction techniques.
- **Research Rabbit**- It is a free AI-powered tool that helps research scholars to find relevant papers and explore new variables and topics. It is a platform for mapping literature that employs algorithms to identify and display pertinent studies and authors.

### **Drawbacks of Using AI in Research**

Despite the significant importance of AI in enhancing research productivity, major ethical considerations and challenges are identified which are:

- **Ethical Concerns**- A major obstacle to use AI in research is ethical considerations. Potential ethical problems and drawbacks of using AI in research include a variety of concerns, such as fairness, bias, accountability, openness, and privacy (Jobin & Ienca, 2019; Resnik & Hosseini, 2024).
- **Transparency Concerns**- For accountability, equity, and ethical norms to be upheld in AI research, transparency is essential. The adoption of AI technologies can be hampered by a lack of transparency, which can also provide skewed results and undermine confidence. To address the issue of unfair evaluations, biased decision-making, and ethical considerations, researchers need to emphasize the significance of transparency in AI system (Pangandaman, 2024).

- **Algorithm Bias**-Depending on the training data, AI system may be biased. This may lead to distorted perceptions, giving preference to some points of view while disregarding others. This can have a negative impact on historically underprivileged populations in particular by promoting systemic prejudices, excluding particular groups, and producing discriminating results.
- **Data Privacy and Security**-It is also an important concern of using AI in research. The use of AI technology in research fields raises issues with data security and privacy, such as the possibility of sensitive information being accessed without authorization, confidentiality violations, and the need to protect personal data from exploitation (Mahligawati, 2023).

### **Conclusion:**

The study concludes that using AI by research scholars has both benefits and drawbacks. Researchers can evaluate easily and accurately large amounts of data by using AI-powered tools. It also increases the quality and reproducibility of studies and allows researchers to conduct previously difficult research. However, there are also concerns about ethical implications, job losses, and exacerbating pre-existing imbalances. Therefore, to ensure the appropriate and equitable use of AI in research procedures, research scholars must concurrently address the issues even as they gain benefits from using AI capabilities. Research scholars should ensure their mindful training to use AI-powered techniques and those adequate safeguards are in place to mitigate any potential risks associated with it.

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