Towards Ethical AI Adoption in Academic Research: Insights from a Systematic Literature Review

Faheem Ullah[†1], Babar Shah[*†2], Ahmed Saeed Alshehhi[†2], Abrar Ullah[†3], Sajid Anwar[†4]

[1]College of Interdisciplinary Studies, Zayed University, Abu Dhabi, UAE
[2]College of Technological Innovation, Zayed University, Abu Dhabi, UAE
[3] School of Mathematical and Computer Sciences, Heriot-Watt University, Dubai
[4]School of Computer Science and Information Technology, IMSciences, Pakistan
Faheem.Ullah, babar.shah, M80009266{@zu.ac.ae}, A.Ullah@hw.ac.uk, sajid.anwar@imsciences.edu.pk

Abstract

Artificial intelligence (AI) is being increasingly integrated in academic research, improving efficiency while raising ethical concerns such as bias, transparency, accountability, and integrity. While current studies examine these issues in isolation, there is a lack of unified research connecting everyday research practices, university policies, and AI ethics tools. To fill this gap, we aim to synthesize ethical challenges of AI-assisted research from scientific, institutional, and technical perspectives. By conducting a systematic literature review of 16 peer-reviewed studies using predefined selection criteria to identify trends, themes, and research gaps, it was found that publications on AI ethics have grown rapidly since 2023, largely linked to generative AI with key concerns clustered around bias, explainability, accountability, and data privacy. In contrast, research on higher education policy and practical ethics tools remains limited. The adoption of responsible AI in research will require stronger institutional policies, cross-disciplinary frameworks, and the creation of accessible and practical ethics tools.

Introduction

AI tools are increasingly becoming integral to academic research and are influencing research methods, data analysis, and knowledge dissemination (Khalifa and Albadawy 2024). Technologies such as large language models, automated data processing systems, and predictive analytics support a wide array of tasks such as literature review, hypothesis development, experimental design and result interpretation (Berdejo-Espinola and Amano 2023). By lowering technical barriers, these tools expand access to sophisticated analytical methods for researchers with limited resources (Dessimoz and Thomas 2024).

However, alongside these benefits, the use of AI in academics raises ethical concerns related to bias, transparency, accountability, and intellectual property, which directly affect academic integrity (Jobin, Ienca, and Vayena 2019). Algorithmic bias, data privacy, reduced human oversight, and unreliable AI-generated outputs can compromise the validity of research outcomes (Ghosh and Wilson 2025; Jo 2023). Issues of intellectual property ownership, data privacy, and the reliability of AI generated content further complicate the research ecosystem. Limited transparency in many AI systems also threatens reproducibility, a core requirement of scientific research (Hutson 2018). These challenges are further intensified by the swift evolution of AI technologies which outpaces the development of appropriate ethical guidelines and regulatory frameworks (Comunale and Manera 2024) (Comunale and Manera 2024). Figure 1 illustrates the evolution of ethical concerns related to AI adoption in academic contexts.

Despite growing research on AI ethics, several research gaps still remain. Existing studies often focus on technical applications and overlook ethical issues specific to academic research practices (Yan, Liu, and Chau 2025). There is limited agreement on how principles such as fairness, accountability, and transparency should be applied within AI-supported research workflows (Prem 2023). The role of higher education institutions in developing ethical AI literacy among researchers and students is insufficiently examined (Wiese et al. 2025). Despite the increase in the number of AI ethics tools, their actual effectiveness and suitability for scholarly settings have not been rigorously evaluated (Ayling and Chapman 2022). Few studies have taken an interdisciplinary view that maps these issues across different domains and provide researchers with a unified framework to guide responsible AI integration. These shortcomings point to a clear need for a comprehensive, interdisciplinary review that synthesizes current knowledge, identifies priority research directions, and offers concrete guidelines for ethical AI deployment in academic research.

This study addresses the need to balance the benefits of AI adoption with appropriate ethical safeguards in academic research. By synthesizing existing literature, the review identifies key ethical challenges and research gaps, and outlines directions for future work. The findings aim to support researchers, institutions, and policymakers in promoting responsible AI use while maintaining academic integrity and public trust in research (Knowles and Richards 2021).

[*]Corresponding author.
[†]These authors contributed equally.

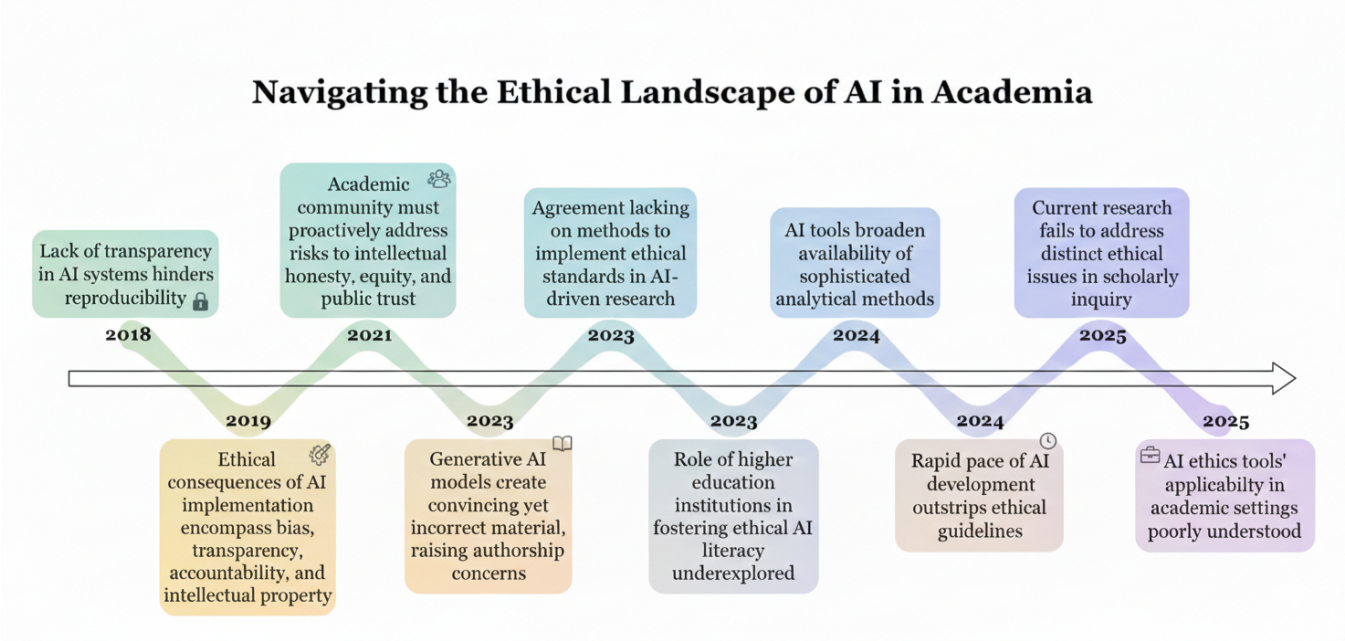

Figure 1: Major ethical milestones in the adoption of AI in academic research and higher education

Hence, the following research questions have been defined.

- **RQ1:** What are the recent research trends in ethical AI adoption in academic research?
- **RQ2:** What are the ethical challenges identified in use of AI in academic research?
- **RQ3:** How are ethical concerns surrounding AI addressed in higher education?
- **RQ4:** Which AI ethics tools are employed to mitigate ethical risks in academic research?

The remainder of this paper is organized as follows: Section 2 details the methodology employed for literature selection and analysis. Section 3 presents the research, organized into four distinct research question covering research trends, ethical issues in scientific inquiry, AI morality in academic institutions, and tools for AI ethical practices. Section 4 discusses the implications of the findings, and Section 5 concludes with reflections on future research directions.

Methodology

Review Protocol

This paper follows the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) framework (Page et al. 2021) to uphold methodological precision and clarity. The study draws from nine major academic databases and search engines, selected for their relevance to AI ethics and interdisciplinary research. PubMed was prioritized due to its vast collection of biomedical and life sciences research, a domain in which AI developments are advancing swiftly. IEEE Xplore and ACM Digital Library were selected because of their emphasis on computer science and engineering, which delivers technical insights on AI tools. arXiv granted entry to advanced preprints in AI and ethics, whereas Web of Science and Scopus supplied high-impact, peer-reviewed research across disciplines. ScienceDirect and SpringerLink complemented the search with their robust collections of social sciences and humanities research. Google Scholar served as a concluding verification step to identify any publications that might have been overlooked. Table 1 summarizes the databases consulted, research focus, keyword strategy, and publication year range used in this systematic review.

The search strategy adopted customized keyword sets for each database, with an emphasis on three central themes: ethics, AI tools, and research. Alternatives encompassed 'moral deliberations,' 'AI instruments,' and discipline specific vocabulary to optimize search results. Boolean operators (AND, OR, NOT) and field specific syntax (e.g., TIAB in PubMed, TITLE ABS KEY in Scopus) refined the searches. To preserve pertinence, we omitted review articles, surveys, and meta analyses, focusing instead on original research that explicitly examined ethical concerns in AI-supported academic endeavors.

Research Dimensions

Our analytical structure categorizes results into three interrelated aspects that reflect the ethical landscape of AI in higher education. The ethical implications of AI in scientific inquiry analyze the impact of AI technologies on the honesty, repeatability, and responsibility of studies in various fields. AI Ethics in higher education explores institutional policies, pedagogical approaches, and student-researcher interactions shaped by AI adoption. The study of AI ethics tools and their applications examines technological and procedural approaches aimed at addressing eth-

Database	Research Focus	Keywords Used
PubMed	Biomed sciences	AI ethics, research integrity
IEEE Xplore	Computing & engineering	Ethical AI, AI tools, academic research
ACM Digital Library	Computing	AI ethics, generative AI, integrity
Web of Science	Multidisciplinary	AI ethics, scholarly inquiry
Scopus	Multidisciplinary	Artificial intelligence, ethics
ScienceDirect	Social sciences	AI ethics, research governance
SpringerLink	Multidisciplinary	AI ethics, education
arXiv	Preprints	Ethical AI, responsible AI
Google Scholar	Broad coverage	Artificial intelligence, ethics

Table 1: Databases and search strategy used in the systematic review

ical challenges, including systems for identifying bias and frameworks that improve transparency. These dimensions are operationalized through a micro–meso–macro framework, where each level represents a distinct yet interconnected layer of AI ethics discourse. At the macro level (system and policy), governance is reflected in national or international AI regulations, research integrity guidelines, and platform-level policies that define acceptable AI use. For example, UNESCO's 2023 Recommendation on AI ethics mandates member states to develop national AI ethics frameworks, leading countries like Brazil and India to draft sector-specific research integrity guidelines referencing AI disclosure(United Nations Educational, Scientific and Cultural Organization (UNESCO) 2023). At the meso level (institutional), universities translate these broader policies into actionable governance mechanisms such as institutional AI usage policies, ethics review processes, and training programs for responsible AI use. Figure 2 presents a conceptual framework illustrating how ethical considerations related to the use of AI in academia operate at the micro, meso and macro levels.

Inclusion and Exclusion Criteria

Studies were included if they explicitly addressed ethical aspects of AI applications in academic or scientific research contexts, presented empirical evidence, theoretical frameworks, or illustrative case examples, were written in English, and were published in peer-reviewed journals or established conference proceedings. No date restrictions were applied to capture historical developments in AI ethics. Via exclusion criteria, we eliminated articles focused solely on commercial or non-research AI applications, opinion pieces without substantive analysis, studies lacking clear methodological

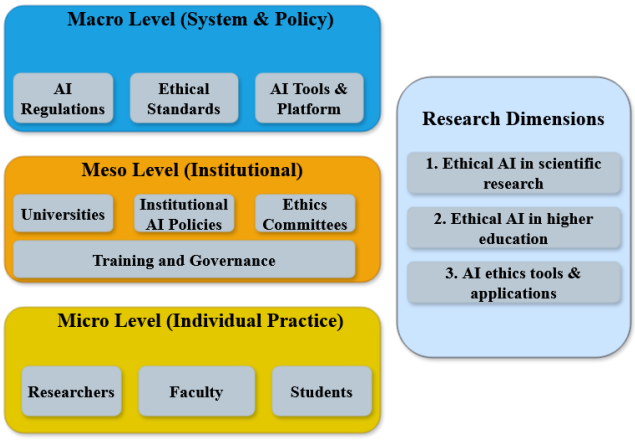

Figure 2: Conceptual framework illustrating ethical considerations of AI use in academia across micro, meso, and macro levels.

descriptions, and duplicate publications reporting identical findings. The inclusion and exclusion criteria applied during study selection are summarized in Table 2.

Inclusion Criteria	Exclusion Criteria
Studies explicitly examining ethical dimensions of AI use in academic or scientific research contexts	Studies focusing exclusively on commercial, industrial, or non-research AI applications
Empirical studies, theoretical frameworks, or well-defined illustrative research examples	Opinion pieces, editorials, or commentaries without substantive analytical depth
Publications written in English	Studies lacking clear, reproducible, or transparent methodological descriptions
Published in peer-reviewed journals or established conference proceedings	Duplicate publications reporting identical findings or results

Table 2: Inclusion and exclusion criteria for study selection

Study Selection Process

The screening procedure constituted three cyclical stages directed by the research framework. A total of 606 records were initially identified in the databases, and 542 duplicate entries were eliminated by automated reference management tools. After manual duplication and removal of 36 records with incomplete metadata, 28 studies proceeded to the abstract screening phase. This process excluded 6 papers for irrelevance since they focused on AI ethics in healthcare delivery rather than academic research. The remaining 22 full-text articles were assessed for eligibility, but six were excluded because they did not meet the inclusion criteria;

four lacked empirical data, and two were centered on non academic settings.

As illustrated in Figure 3, the ultimate corpus consisted of 16 studies subjected to quality appraisal with an adapted Critical Appraisal Skills Programme (CASP) checklist. The study of AI ethics in academic research is still in its early stages. Most publications appeared after 2023. This final dataset of 16 studies reflects the highly specific scope of our study on the ethical implications of AI adoption within academic research contexts. By concentrating on these 16 papers, we ensure comprehensive coverage of bias, explainability, accountability and data privacy. This is also consistent with systematic-review best practices that prioritize relevance and soundness of methodology over sample size. CASP further assessed methodological rigor, thoroughness of ethical reflection, and alignment with the research objectives. Potential biases in this study include database selection bias, including an overrepresentation of STEM fields, and publication bias, which tends to favor positive outcomes regarding the role of AI in research. To mitigate these biases, we intentionally sought out opposing viewpoints and incorporated research that critiques the adoption of artificial intelligence. The diverse methodologies employed in the included studies—encompassing qualitative, quantitative, and mixed-methods approaches—enhanced the analysis but presented challenges in terms of direct comparability. These challenges were addressed through thematic synthesis rather than statistical meta-analysis.

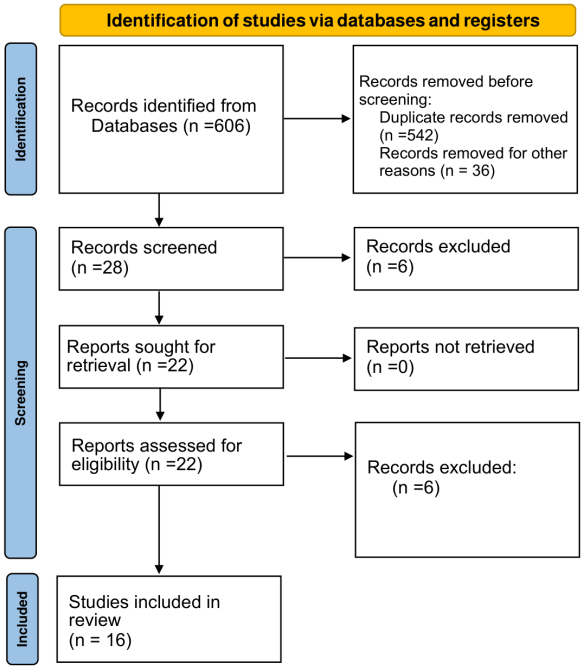

Figure 3: PRISMA flowchart of the study selection process

Results

Recent Research Trends in Ethical AI Adoption

Research publications about AI Ethics have increased exponentially since 2023. During this period, research on AI ethics experienced substantial growth doubling from four published articles in 2023 to eight in 2024 as shown in Figure 4. This rapid growth can be attributed to the ever-increasing usage of generative AI within learning environments. Therefore, based on our observations of the global distribution of research on AI Ethics, AI Ethics is transforming from an isolated area of study into a mainstream discipline. Furthermore, there appears to still be a lot of research being generated around AI Ethics in 2023 and 2024; however, much of the work published to date predominantly focuses on generative AI technologies.

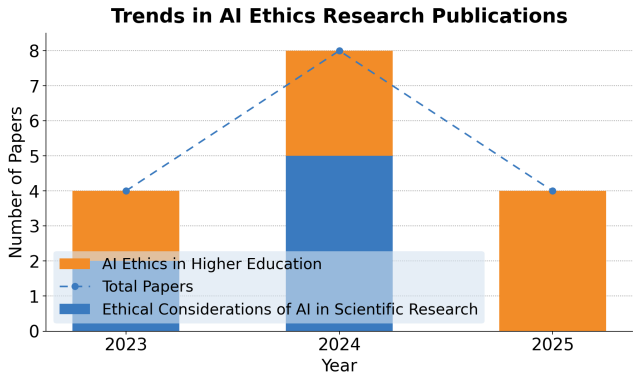

Figure 4: Research trends in the domain of ethics in using AI tools for research

In literature, two of the largest publication groups are:

1. Ethical considerations of using AI in the field of scientific research
2. Ethical implications of AI in higher education

The first group makes up approximately 50% of the total publications with 7 out of total of 16 published works. There has been continuous growth in this area and ongoing focus on bias in AI algorithms, and issues related to legitimate scientific work, since 2023. The second group has been gaining momentum over the last year with all relevant studies being published in 2024 or later. This shift indicates a growing state of consciousness among institutions as to their obligations to support the development of ethically produced AI products by future generations of researchers. Notably, none of the studies cited in this paper reported on all three research dimensions simultaneously, illustrating a lack of coherence and a need to rectify this disjointedness of research in the field.

The increasing number of scientific research ethics publications reflects the growing importance of AI as these tools are becoming more widely integrated into laboratory practices and data analysis systems. Conversely, the slower research pace related to higher education may indicate that institutional perspectives on AI ethics are still developing.

Absence of articles prior to 2023 suggests that the rapid evolution of AI technologies has only recently been mirrored in broader discussions surrounding digital research ethics.

Ethical Considerations of AI in Scientific Research

The use of AI in scientific research introduces ethical challenges that affect multiple disciplines and research contexts. The reviewed literature identifies four main areas of concern: (i) bias and fairness (ii) transparency and explainability (iii) accountability and responsibility and (iv) data privacy and security. These areas form the basic ethical framework for evaluating AI-supported research, while allowing differences based on disciplinary context and research practice.

Bias and fairness are the most frequently discussed issues. Studies indicate that AI systems can reinforce existing biases when training data lacking in demographic and contextual diversity, potentially leading to unreliable research outcomes (Hosseini, Resnik, and Holmes 2023; Feng 2024). Such problems are reported in both biomedical and social science research, particularly when models trained mainly on European data are applied to other populations (Limongi 2024). These limitations become critical when AI-generated results are used in policy or clinical decision-making without proper validation across contexts (Saif et al. 2024).

Transparency and explainability present additional challenges. Many AI models operate as opaque systems, limiting researchers' ability to interpret automated decisions (Limongi 2024; Feng 2024; Ganguly and Pandey 2024). The lack of standardized documentation further weakens reproducibility and complicates peer review (Saif et al. 2024; Khan, Osmonaliev et al. 2023). This reduces confidence in AI-assisted findings, especially in research areas where transparent methodology is essential (Chauke et al. 2024).

Accountability and responsibility remain unclear in AI-assisted research. Ongoing debate focuses on authorship and liability when AI-generated outputs contain errors or biases (Hosseini, Resnik, and Holmes 2023; Ganguly and Pandey 2024). However, uncertainty persists over whether responsibility lies with developers, data providers, or researchers using the systems (Limongi 2024; Feng 2024). These concerns are closely linked to data privacy and security, as AI analysis often involve sensitive datasets that may be reused beyond original consent agreements (Saif et al. 2024; Khan, Osmonaliev et al. 2023). Risks of re-identifying anonymized data are particularly serious in longitudinal and vulnerable-population studies (Hosseini, Resnik, and Holmes 2023; Ganguly and Pandey 2024).

Figure 5 summarizes the frequency with which these ethical concerns are addressed in the reviewed studies. This imbalance suggests that some ethical risks remain insufficiently explored. Differences in disciplinary norms and governance further complicate the development of shared ethical guidelines (Irfan and alQahtani 2023), indicating the need for coordinated approaches that respect disciplinary context while maintaining consistent ethical standards.

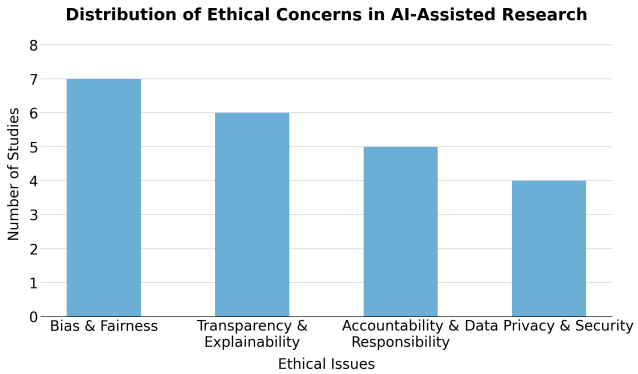

Figure 5: Distribution of major ethical concerns addressed in AI-assisted scientific research.

AI Ethics in Higher Education: Policy Development and Student Perceptions

Incorporating AI tools into higher education has introduced distinct ethical dilemmas that intersect with teaching methods, institutional regulations, and student growth. As shown in Table 3, the primary ethical concerns center on academic integrity, policy formulation, and the educational benefits of AI tools, with particular emphasis on postgraduate research contexts.

(Chauke et al. 2024) identify favorable views among graduate students regarding AI technologies such as ChatGPT in improving scholarly achievement, while also emphasizing the critical necessity for moral governance structures. This twofold viewpoint highlights a conflict between the tangible advantages of AI implementation and the threats to scholarly honesty amid the unguided employment of these technologies. The study explicitly urges organizations to create novel frameworks that set moral limits for AI in graduate-level research, noting that existing protocols frequently fall short of keeping pace with technological advancements.

Policy formation stands as a pivotal area for action, with proposing standards to tackle attribution, clarity, and suitable applications of AI in scholarly endeavors. Lacking such policies results in uncertainty regarding permissible practices, especially in research-focused programs where AI tools can greatly influence literature reviews, data analysis, and manuscript preparation. This policy gap grows more evident as AI capabilities progress, while students and faculty frequently face ethical dilemmas in the absence of institutional guidance. The research's emphasis on graduate-level education underscores the elevated ethical concerns in higher-level academic inquiry, where inappropriate application of artificial intelligence might undermine intellectual thoroughness and novelty.

Student views recorded in (Chauke et al. 2024) show recognition of both the benefits and moral dilemmas associated with AI technologies. Although acknowledging the improvements in research efficiency, participants expressed apprehension about upholding scholarly rigor when including AI-produced material. This subtle comprehension indicates students do not passively accept technology but actively en-

Ethical Concern	Implementation Level	Key Findings
Ethical use of AI tools	Policy development for postgraduate education	Need for clear ethical guidelines governing AI tool usage in academic research
Academic integrity	Student perceptions	Recognition of AI's benefits for academic success alongside concerns about scholarly rigor
Educational equity	Institutional governance	Potential disparities in access to AI tools and AI literacy across institutions

Table 3: Ethical Considerations of AI Use in Higher Education Contexts

gage in forming moral standards concerning AI applications. The results suggest higher education institutions should shift from banning AI tools to promoting thoughtful interaction with them by educating students and jointly developing policies.

The moral framework within academia encompasses not only personal application but also broader institutional concerns of fairness and availability. Disparities in AI tool availability across many institutions and student populations across institutions and student populations could exacerbate existing inequalities in research capacity and output quality. As artificial intelligence grows more deeply integrated into scholarly processes, universities must address the twofold task of guaranteeing fair availability alongside upholding strict moral principles. The research conducted by (Chauke et al. 2024) establishes a basis for comprehending these dynamics, yet additional investigation is required to examine disciplinary distinctions and cross-national disparities in the adoption of AI ethics.

AI Ethics Tools in Research

The use of AI in academic research has led to the development of tools intended to address ethical risks related to fairness, transparency, responsibility, and data protection. Table 4 summarizes the main categories of AI ethics tools identified in the reviewed studies.

Bias detection tools are widely used to examine training data and identify demographic imbalances that may influence research results. Algorithmic auditing frameworks allow researchers to detect unequal data representation and biased model behavior, particularly in health sciences and social science research (Mishra et al. 2024; Mujtaba 2024). The scale of this challenge is reflected in (Ghosh and Wilson 2025) which found that bias in AI systems remains persistent and incompletely addressed. These bias detection tools are therefore especially important where biased outputs may affect sensitive decisions or conclusions.

Transparency enhancement tools focus on improving the clarity of AI-assisted research methods. Model documentation standards require detailed reporting of data sources, model settings, and validation procedures, which supports reproducibility and peer evaluation (Nguyen 2025; Irfan and alQahtani 2023). However, the effectiveness of such tools is contingent on consistent adoption, which remains limited. (Hutson 2018) documented that many published AI studies could not be reliably replicated due to insufficient methodological reporting. This is a problem that transparency tools are designed to address but have not yet resolved at scale, particularly outside computational disciplines.

Accountability tools address questions of responsibility and authorship in AI-assisted work. Attribution tracking systems record the role of AI in producing research outputs, helping to clarify contribution sources and responsibility for errors. (Mishra et al. 2024; Graham, Alyanak, and Valente 2025) found widespread use of AI tools in manuscript preparation yet inconsistent disclosure practices. This suggests that accountability mechanisms exist in principle but face significant adoption barriers in practice.

Privacy protection tools aim to reduce risks related to sensitive data use. Differential privacy techniques prevent the identification of individuals within research datasets and are mainly applied in clinical and behavioral studies (Mujtaba 2024). While privacy tools are available within surveyed higher education contexts, researcher awareness and uptake remais low. (Irfan and alQahtani 2023) Figure 6 shows the alignment between ethical risks and corresponding tools, indicating that most tools are designed to address specific issues rather than multiple risks simultaneously. The reviewed studies also show uneven adoption across disciplines, with greater use in technical fields than in the humanities and social sciences.

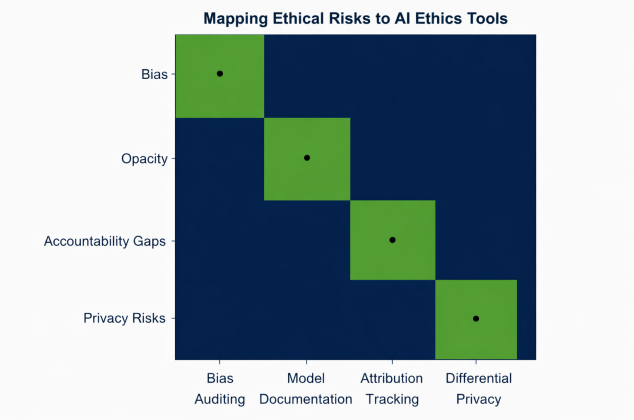

Figure 6: Mapping between key ethical risks in AI-assisted academic research and corresponding AI ethics tools used for risk reduction.

Discussion

The findings of this review align well with prior research indicating that rapid AI integration into academic work-

Tool Category	Tool / Approach	Primary Function	Application Domain	Sources
Bias detection	Algorithmic auditing frameworks	Identification of demographic and representational biases in training data	Health sciences and social science research	(Mishra et al. 2024; Mujtaba 2024)
Transparency enhancement	Model documentation standards	Improvement of reproducibility and interpretability of AI-assisted research	Computational and data-driven research	(Nguyen 2025; Irfan and alQahtani 2023)
Accountability mechanisms	Attribution tracking systems	Documentation and traceability of AI contributions within research outputs	Multidisciplinary research workflows	(Mishra et al. 2024; Graham, Alyanak, and Valente 2025)
Privacy protection	Differential privacy tools	Protection of sensitive research data against re-identification risks	Clinical and behavioral research	(Mujtaba 2024; Irfan and alQahtani 2023)

Table 4: Taxonomy of AI ethics tools and their research applications

flows has increased ethical scrutiny across all academic disciplines. Existing studies consistently identify bias, transparency, accountability, and data privacy as the primary ethical risks associated with AI-assisted research (Hosseini, Resnik, and Holmes 2023; Feng 2024; Limongi 2024). Our synthesis supports this consensus, as these concerns appeared most frequently across the reviewed studies and constitute the core ethical framework guiding contemporary discourse on responsible AI use.

The reviewed literature shows a clear pattern in the ethical use of AI in academic research. While AI tools improve research speed and analytical capacity, they also raise ethical concerns that affect research quality, academic integrity, and fairness. These concerns appear across disciplines, although their expression differs between technical fields and humanities. The findings indicate that ethical challenges are not isolated technical issues but are closely linked to research practices and institutional norms.

Overall, institutions' approaches for governing AI in academic research vary across universities. Broadly, three governance models emerge. The first is a policy-driven model, where institutions develop formal regulations outlining acceptable uses of AI tools in research workflows. This emphasizes compliance and accountability but struggles to keep pace with rapidly evolving AI technologies. The second model involves ethics-based oversight, in which institutional review boards or ethics committees evaluate AI usage within research projects. While this framework provides strong ethical scrutiny, it may introduce procedural delays and variability in interpretation across committees. Third is guideline-based governance, where institutions issue advisory recommendations or best-practice documents for responsible AI use rather than strict regulations. This model offers greater flexibility and encourages researcher autonomy but may lack enforceability. Comparative analysis suggests that institutions should adopt hybrid governance structures to balance innovation with responsible AI.

The results highlight the need for clear and shared ethical guidelines for AI-assisted research. Persistent problems related to bias and lack of transparency suggest that existing practices are insufficient to support responsible AI use across diverse research settings. Interdisciplinary ethical guidelines could help reduce the current fragmentation by offering common reference points for researchers, while still allowing flexibility for discipline-specific needs.

The findings carry important implications for both academic researchers and practitioners responsible for safeguarding research environments. The findings can be interpreted to provide a practical roadmap for institutions adopting AI in academic research. Initially, they should focus on establishing foundational governance including formal AI disclosure policies, ethics training for researchers, and designated oversight responsibilities. As maturity develops, they should embed AI ethics criteria into existing review mechanisms such as grant application processes. At an advanced stage, sustained maturity is achieved through periodic auditing of AI tool usage, iterative policy refinement based on observed gaps, and active engagement with broader national and international governance initiatives. For researchers, the persistence of bias and transparency challenges highlights the necessity of critically evaluating training data, documenting AI-assisted methodologies, and validating outputs across diverse contexts. Researchers should move beyond discipline-specific guidelines toward shared ethical frameworks capable of supporting responsible AI use across heterogeneous research settings.

Limitations in Research

Several limitations should be considered when interpreting the findings of this review. Although multiple databases were consulted, the literature is dominated by studies from STEM fields. Our database selection and search strategy naturally prioritized repositories such as IEEE Xplore, ACM Digital Library, and arXiv, where AI research is most actively published. As a result, perspectives from the social sciences and humanities may be underrepresented. The lack of an interdisciplinary view that maps ethical challenges

across diverse research areas was identified as a gap. In addition, rapid changes in AI technologies mean that some ethical challenges discussed in earlier studies may already be evolving. The largely qualitative nature of the reviewed work also limits generalization across institutions and regions.

Future research should focus on tracking ethical challenges over time as AI tools become more deeply integrated into research workflows. Comparative studies of institutional policies across higher education systems will provide a more balanced and interdisciplinary perspective. would help identify effective governance approaches. Inclusion of high quality studies from disciplines such as the social sciences, arts, and humanities will provide a more balanced and interdisciplinary perspective. This will enable a more robust comparative analysis of institutional governance approaches as policy implementations may vary across disciplinary contexts. In higher education, greater attention should be given to ethical AI literacy, as postgraduate students recognize both the advantages and risks of AI tools but often lack formal guidance.

Conclusion

This systematic review has synthesized the current discourse on ethical considerations in AI-assisted academic research, addressing three core dimensions: scientific research practices, higher education contexts, and emerging ethics tools. The analysis reveals that while AI offers transformative potential for research efficiency and innovation, it simultaneously introduces complex ethical challenges that demand interdisciplinary solutions. Key findings highlight persistent concerns about algorithmic bias, transparency deficits, and accountability gaps, which vary in manifestation across disciplines but collectively threaten research integrity.

The theoretical contribution of this work lies in its integrative framework, which bridges previously fragmented discussions of AI ethics across academic domains. Practically, the research shows the urgent need for institutional policies that balance innovation with safeguards, particularly in postgraduate education where AI tools are increasingly embedded. Future research will prioritize longitudinal studies of ethical challenges in evolving AI systems, comparative analyses of governance models, and empirical evaluations of ethics tool efficacy. The academic community must foster ethical AI literacy while developing adaptive accountability mechanisms to maintain scholarly rigor in this rapidly changing landscape.

References

Ayling, J.; and Chapman, A. 2022. Putting AI Ethics to Work: Are the Tools Fit for Purpose? *AI and Ethics*.

Berdejo-Espinola, V.; and Amano, T. 2023. AI Tools Can Improve Equity in Science. *Science*.

Chauke, T.; Mkhize, T.; Methi, L.; et al. 2024. Postgraduate Students' Perceptions on the Benefits Associated with Artificial Intelligence Tools on Academic Success. *Journal of Curriculum Studies*.

Comunale, M.; and Manera, A. 2024. The Economic Impacts and the Regulation of AI: A Review of the Academic Literature and Policy Actions.

Dessimoz, C.; and Thomas, P. 2024. AI and the Democratization of Knowledge. *Scientific Data*.

Feng, G. 2024. Best Practices for Responsibly Using AI Tools in Social Sciences Research. *Cogent Social Sciences*.

Ganguly, S.; and Pandey, N. 2024. Deployment of AI Tools and Technologies on Academic Integrity and Research. *Bangladesh Journal of Bioethics*.

Ghosh, S.; and Wilson, K. 2025. AI Bias Is a Technical Problem: A Ten-Year Literature Review of AI and LLM Bias Research. In *Proceedings of the AAAI/ACM Conference on AI, Ethics, and Society*.

Graham, M.; Alyanak, O.; and Valente, J. 2025. Reflection AI: Feeding the Machine—The Hidden Labour Behind AI Tools and Ethical Implications for Higher Education. *Frontiers in Communication*.

Hosseini, M.; Resnik, D.; and Holmes, K. 2023. The Ethics of Disclosing the Use of Artificial Intelligence Tools in Writing Scholarly Manuscripts. *Research Ethics*.

Hutson, M. 2018. Artificial Intelligence Faces Reproducibility Crisis. *Science*.

Irfan, M.; and alQahtani, Y. 2023. Ethics and Privacy in Irish Higher Education: A Comprehensive Study of AI Tools Implementation. Technical report, University of Limerick.

Jo, A. 2023. The Promise and Peril of Generative AI. *Nature*.

Jobin, A.; Ienca, M.; and Vayena, E. 2019. The Global Landscape of AI Ethics Guidelines. *Nature Machine Intelligence*.

Khalifa, M.; and Albadawy, M. 2024. Using Artificial Intelligence in Academic Writing and Research: An Essential Productivity Tool. *Computer Methods and Programs in Biomedicine*.

Khan, N.; Osmonaliev, K.; et al. 2023. Pushing the Boundaries of Scientific Research with the Use of Artificial Intelligence Tools. *Nepal Journal of Science and Technology*.

Knowles, B.; and Richards, J. 2021. The Sanction of Authority: Promoting Public Trust in AI. In *Proceedings of an International Conference*.

Limongi, R. 2024. The Use of Artificial Intelligence in Scientific Research with Integrity and Ethics. *Future Studies Research Journal: Trends and Developments*.

Mishra, T.; Sutanto, E.; Rossanti, R.; Pant, N.; Ashraf, A.; et al. 2024. Use of Large Language Models as Artificial Intelligence Tools in Academic Research and Publishing Among Global Clinical Researchers. *Scientific Reports*.

Mujtaba, B. 2024. Clarifying Ethical Dilemmas in Sharpening Students' Artificial Intelligence Proficiency. *Business Ethics and Leadership*.

Nguyen, K. 2025. The Use of Generative AI Tools in Higher Education: Ethical and Pedagogical Principles. *Journal of Academic Ethics*.

Page, M.; McKenzie, J.; Bossuyt, P.; et al. 2021. The PRISMA 2020 Statement: An Updated Guideline for Reporting Systematic Reviews. *BMJ*, 372: n71.

Prem, E. 2023. From Ethical AI Frameworks to Tools: A Review of Approaches. *AI and Ethics*.

Saif, M.; Iqbal, F.; Sheaikh, R.; Ilyas, A.; Farid, G.; et al. 2024. Ethical Considerations Regarding the Use of Artificial Intelligence Tools in Research and Publication. *Kurdish Studies*.

United Nations Educational, Scientific and Cultural Organization (UNESCO). 2023. Recommendation on the Ethics of Artificial Intelligence. Accessed: 17 March 2026.

Wiese, L.; Patil, I.; Schiff, D.; and Magana, A. 2025. AI Ethics Education: A Systematic Literature Review. *Computers and Education*.

Yan, Y.; Liu, H.; and Chau, T. 2025. A Systematic Review of AI Ethics in Education: Challenges, Policy Gaps, and Future Directions. *Journal of Global Information Management*.