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## Legality vs Legitimacy: Can AI-Written Papers Uphold the Spirit of Academic Integrity?

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#### **Abstract**

The recent, explosive assimilation of generative artificial intelligence (AI) technologies, like ChatGPT, Gemini, and Claude, into academic settings has led to the inextricable problematization of the fundamentals of authorship, academic integrity and the rules of ethical practice. Although these assistants are competent to perform relatively complicated linguistic tasks, such as the writing of a complete academic piece of work, the practice of their application has significantly exceeded the creation of the legal and institutional frameworks. The main question that the current paper aims to answer is whether the growing use of AI as a tool to create academic material is compatible with values and principles of academic integrity. Particularly, the paper will put into question the legality of AI-generated content and find analogies with the greater moral concept of legitimacy in the academy.

Legally, there is no idea of AI as a writer in most jurisdictions. The regimes of copyright in the United States, United Kingdom, and European Union confirm that only human beings can be granting owners of original texts, and the written texts generated by AI, unless substantially changed by a human, are not subject to coverage by copyright protection. Nevertheless, AI usage without disclosure remains wide-spread among students and even those conducting studies, as it resides in a grey area of the law where action can be taken only in rare circumstance and where institutions have varied or no policies to guide them. Although this might not amount to a legal breach in the strict sense it brings with it considerable moral questions of intellectual integrity, disclosure and the genuineness of academic work.

It is perhaps more urgent ethically than legally. Academic integrity has to do not just with plagiarism or with the technical rules, but with establishing habits of critical thought, original communication, and integrity with knowledge. When AI-written work is passed on anonymously, this compromises the educative purpose of academic writing and transform assessment into a performance project, instead of a learning project. In addition, the unacknowledged use of AI tools in the research setting damages the credibility of the record of scholarship, in particular when the tools create content that pays no regard to precision, context, or source integrity.

The present paper holds that whether the use of AI in academia is legitimate or not, has nothing to do with whether or not the use of AI should be granted in academia; instead, what matters is whether the use of AI is in accordance with the letter and the spirit of academic values. The responsible eosinophilic framework of AI use should also comprise open declaration, a precise definition of the human effort of mind, and the responsibility of the end product. The issue of AI authorship and the active discussion going on concerning its possibility are also discussed in the paper, the conclusion is that the propositions on AI authorship should be declined because AI lacks consciousness, agency of morals, and responsibility to take towards the scholarly statements.

To sum up, the given research states that not even legality can be seen as a factor defining whether AI-generated academic writing can be considered appropriate or not. Enhancing the academic integrity of research needs a wider cultural and institutional reinstatement similarly to the preservation of genuineness, justice, and pedagogical integrity of research in an era where scholars are being increasingly influenced by algorithmic ways.

# Introduction

The development of generative artificial intelligence (AI) infrastructure like ChatGPT, Claude, and Gemini has changed the way academic research and writing is done. Based on the minimal human input, these systems are capable of providing essays, abstracts, and literature reviews as well as complete research papers. Although the practicability of these tools has introduced new

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frontiers to developing knowledge, the usefulness has raised fundamental fears of authorship, originality, intellectual integrity and corruption of academic standards.

The legal environment AI-generated contents are still developing and they are ambiguous in most jurisdictions. On the one hand, there is no worldwide understanding on how to point out the ownership of AI-generated scholarly texts. Conversely, on the one hand many institutions lack in updating the level of codes of conduct to take into consideration these new forms of authorship, which creates a grey zone between what is legally acceptable and what is academically acceptable. Here, the norm of academic integrity is pressured, to say the least. Is it permissible that students and researchers present AI-generated text as their own? Can they, should they?

This article aims at examining the conflict between lawfulness and validity in terms of academic use of AI-crafted documents. The situation with the legal status of the use of AI in the creation of academic work is unstable according to different jurisdictions, but the ethical one, based on academic integrity, transparency, and intellectual responsibility, offers a stricter position. The important legality of academic activity, however, does not exist only in what is lawful but what is conducive to the life of study as well as the ideals of higher education.

Already, first empirical research indicates that submissions generated with the assistance of AI are skyrocketing in universities, with some response in the form of straight bans to more controlled incorporation. These responses indicate wider fears of automation of the mind and elimination of human judgment and critical thinking. This inquiry, therefore, not only reflects a disciplinary concern but also forms part of a larger societal reckoning with automation, authorship, and authenticity in the digital age. Human and machine authorship is also in-blurred presenting novel issues of institutional structures of misconduct, attribution and originality. In this sense, the academic integrity has transcended to be a matter of copy paste; rather it is a matter of who or what has come up with the ideas being presented.

### The Legal Status of AI-Generated Academic Work

Who owns and is responsible when it comes to the content produced by the AI is an unsettled and complex question. Currently, the majority of legal frameworks fail to explicitly identify AI systems as the people who can have a copyright or intellectual ownership right. Rather authorship is mostly surrendered to those who utilize physical work in the action of intellectual division and originality of thoughts produced by the human being. This creates a dilemma in an event where students or researchers submit posts that were created or created mostly by AI: no traditional creativity has been exerted, but they often will be considered the ones to copyright.<sup>6</sup>

In such jurisdictions as the United States and the United Kingdom, the copyright has clearly stated that a work is to be authored by a human being to warrant the protection. As an example, the U.S. Copyright Office has consistently rejected copyright protection of AI-created material that does not contain much human input reinforcing the belief that under the existing law, machines cannot be included as creators. Therefore, the academic papers authored purely by AI lack legal authorship unless they are significantly edited, curated or transformed by the human user, which the definition is legally unclear.

In the educational setting, legal implications are even more complicated with university codes of conduct being vastly different and typically saying nothing about the use of AI tools. Certain organizations are beginning to amend their policies, adding official AI-use prohibitions or

<sup>&</sup>lt;sup>1</sup> Trung T. Nguyen et al., "How to Detect Al-Generated Texts?," 2023 IEEE 14th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON), October 2023, 0464–71, https://doi.org/10.1109/UEMCON59035.2023.10316132.

<sup>&</sup>lt;sup>2</sup> "Automation and Utopia — Harvard University Press," accessed October 17, 2024, https://www.hup.harvard.edu/books/9780674984240.

<sup>&</sup>lt;sup>3</sup> "Principles Alone Cannot Guarantee Ethical AI by Brent Mittelstadt :: SSRN," accessed October 17, 2024, https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=3391293.

<sup>&</sup>lt;sup>4</sup> "Page against the Machine: The Death of the Author and the Rise of the Producer? In: Queen Mary Journal of Intellectual Property Volume 13 Issue 3 (2023)," accessed October 17, 2024, https://www.elgaronline.com/view/journals/qmjip/13/3/article-p275.xml.

<sup>&</sup>lt;sup>5</sup> "Academic Integrity: Author-Related and Journal-Related Issues – Тема Научной Статьи По Языкознанию и Литературоведению Читайте Бесплатно Текст Научно-Исследовательской Работы в Электронной Библиотеке КиберЛенинка," accessed October 17, 2024, https://cyberleninka.ru/article/n/academic-integrity-author-related-and-journal-related-issues.

<sup>&</sup>lt;sup>6</sup> "From Infringement to Innovation: Reimagining Copyright for AI Training Datasets by Yehuda Leibler :: SSRN," accessed October 17, 2024, https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=4986763.

<sup>&</sup>lt;sup>7</sup> "Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence," Federal Register, March 16, 2023, https://www.federalregister.gov/documents/2023/03/16/2023-05321/copyright-registration-guidance-works-containing-material-generated-by-artificial-intelligence.

<sup>&</sup>lt;sup>8</sup> Amy Whitaker, "Who Owns AI?," *Artivate* 13 (2024): 1–21.

disclosure information in their tests, and others are in a limbo state of being. When policies are not in place, it is virtually impossible to enforce the law and students act in a gray zone of what is okay to do and what is not.

The legal status of AI-made works on an international level is also rather uneven. The new European Union AI Act does not specify authorship or copyright, but simply aims at improving safety and transparency. In China and South Korea, the courts have at least started to recognize the contribution of AI to creativity, however, not providing it with an independent legal status. Global legal environment therefore indicates not only a difference in norms, but a wider confusion regarding the place of AI in structures of responsibility and possession.

#### Academic Integrity and the Ethical Dimension of AI Use

Academic Integrity and the Moral Aspect of the AI Use The legal implications of using AI in creating academic papers are uncertain and not as urgent as ethical concerns of such kind of writing. Academic integrity is not only based on obedience of institutional rules but also it rests on the higher There is a sense of honesty, responsibility and development of intellectual virtues. The prevalence of generative AI, particularly in cases where its use remains secret, contradicts this ethical pillar to its very core by putting into the question of whether the work is truly authored and whether the scholarship is even worth anything.<sup>11</sup>

In its essence, academic work is supposed to be one that incorporates the thoughts, the thinking process, the interaction of the person learning a piece of knowledge. Submitting AI-generated material without disclosure undermines this principle by presenting machine-produced text as if it were the product of a student's or scholar's own reasoning. It is an intellectual form of misrepresentation and whilst not technically duplicate an infringement of a copyright since it obscures the origin of the ideas and structure. <sup>12</sup>

In addition, the ethical aspect is more pronounced in studies where the principle of originality, disclosure of methods and possibility of reproduction is crucial. The authenticity of a scholarly record is threatened when the researchers employ AI tools to write literature reviews or analyze data, or even come up with conclusions, without disclosing that they have been done using the AI. This also generates inequality among students and scholars especially in institutions with less access to a complex AI tool, thus supporting global academic inequalities. <sup>14</sup>

The educational institutions have become deeply conscious of such risks and are currently trying to counter the challenges via new honor codes and ethical guidelines regarding AI. Others introduce a so-called disclosure model, according to which students would be obliged to disclose that their work is using AI instruments, and other supporters include an outright ban on the submission of AI-generated work.<sup>15</sup> Nevertheless, its implementation is still inconsistent, and moral understanding is still catching up with technology.

Overall, the ethical aspect of writing with the help of artificial intelligence in academic work is not just requiring a change of policy, but also a cultural renewal of the values of learning, originality, and transparency. Whether or not, AI work is allowable, the question also arises whether it is genuine, sincere, and educationally significant.

## Disclosure, Co-Authorship, and Responsibility in AI-Assisted Research

The urgency to be transparent in the application of generative AI has gained ground, as the latter is already getting deeply rooted in the academic workflow. Disclosure is a major ethical standard as it enables the institutes, the reviewers and the end readers to discern the authenticity and integrity of a scholarly publication in an accurate manner. In the case that there is no

<sup>&</sup>lt;sup>9</sup> James Ewert Duah and Paul McGivern, "How Generative Artificial Intelligence Has Blurred Notions of Authorial Identity and Academic Norms in Higher Education, Necessitating Clear University Usage Policies," *The International Journal of Information and Learning Technology* 41, no. 2 (2024): 180–93, world, https://doi.org/10.1108/IJILT-11-2023-0213.

<sup>&</sup>lt;sup>10</sup> Ecem Çebi et al., "The Influence of Artificial Intelligence on Copyright Law," *Interdisciplinary Studies in Society, Law, and Politics* 2, no. 2 (2023): 2, https://doi.org/10.61838/kman.isslp.2.2.5.

<sup>&</sup>lt;sup>11</sup> Robert Mulenga and Helvi Shilongo, "Academic Integrity in Higher Education: Understanding and Addressing Plagiarism," *Acta Pedagogia Asiana* 3, no. 1 (2024): 1, https://doi.org/10.53623/apga.v3i1.337.

<sup>&</sup>lt;sup>12</sup> "Academic Integrity in the Age of Artificial Intelligence (AI) Authoring Apps - Yeo - 2023 - TESOL Journal - Wiley Online Library," accessed October 17, 2024, https://onlinelibrary.wiley.com/doi/abs/10.1002/tesj.716.

<sup>&</sup>lt;sup>13</sup> "Full Article: Using AI to Write Scholarly Publications," accessed October 17, 2024, https://www.tandfonline.com/doi/full/10.1080/08989621.2023.2168535.

<sup>&</sup>lt;sup>14</sup> "The Digital Divide and AI in Education: Addressing Equity and Accessibility | Journal of AI Integration in Education," accessed October 17, 2024, https://researchcorridor.org/index.php/jaiie/article/view/259.

<sup>&</sup>lt;sup>15</sup> "Artificial Intelligence with American Values and Chinese Characteristics: A Comparative Analysis of American and Chinese Governmental AI Policies | AI & SOCIETY," accessed October 17, 2024, https://link.springer.com/article/10.1007/s00146-022-01499-8.

straightforward recognition, it becomes difficult to define where human contribution ends and where the machine contribution takes its place, and put under threat the correct distribution of intellectual credit and liability. <sup>16</sup>

Recently, these policies have been adopted at several academic publishers and research agencies that require authors to provide information about the usage of AI when preparing the manuscript. As an example, the journal Nature directly specifies that the large language models cannot take authorship and their usage should be recommended in the section with methods or acknowledgments. This is an embodiment of an increasingly common realization that although AI can help in writing, it cannot interpret the output in the same way that the material may require moral and legal responsibility, or the ability to address accountability, or conflict of interest statement, or chance to respond to a peer review, which is the key to co-authorship. 18

Whether AI can become a co-writer or not is a controversial question. Some have argued that attributing co-authorship to AI tools trivializes the meaning of authorship and introduces an ontological confusion about what it means to "create." Others have proposed revision of authorship conventions to accommodate the hybridization of current academic production in which humanity and machine are working collaboratively more and more closely. Nonetheless, the majority of institutions advocate that the authorship speaks of intellectual contribution, responsibility, and the message delivery or intention; none of these is true about AI systems.

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Finally, the responsible AI utilization in the academic field simultaneously requires two pledges: to be honest with technological help as well as to take responsibility over the intellectual rigor of the study. Below honors the norms of authorship that make scholarly communication possible.

## Institutional and Policy Responses to AI in Academia

Across their overall response to the use of AI-generated content across academic settings, there has been a degree of sensitivity in terms of the kinds of responses institutions take. Institutions of higher learning, scholarly journals, and education organizations around the globe must figure out how to control the adoption of generative AI tools in the classroom and evaluation as well as academic publishing. These reactions indicate the differences in the concern about such erosion of academic integrity, the blurring of authorship standards, and the possible upsetting of past pedagogical paradigms.

In the immediate aftermath of ChatGPT's public release in late 2022, many universities issued temporary bans on the use of AI in student assignments. Schools like Sciences Po in France or various universities in Australia and U.S. regarded the tool as a type of automated cheating and updated their honor codes to reflect it.<sup>21</sup> Such initial reactions were inclined to define AI use as something necessarily unethical, with the emphasis turning more on the ban than on inclusion. Although blanket bans have been effective in conveying seriousness to the institution, blanket bans have also received some criticism as being impractical, hard to police, and educationally short-sighted.<sup>22</sup>

Conversely, other academic organizations have assumed a more protracted view. As an example, the University of Cambridge has taken what has been described as a "guided use" approach,

<sup>16 &</sup>quot;Human- and Al-based Authorship: Principles and Ethics. | EBSCOhost," accessed October 17, 2024, https://openurl.ebsco.com/EPDB%3Agcd%3A7%3A31863639/detailv2?sid=ebsco%3Aplink%3Ascholar&id=ebsco%3Agcd%3A164879664&crl=c&link\_origin=scholar.google.com.

<sup>&</sup>lt;sup>17</sup> Adhari AlZaabi et al., "ChatGPT Applications in Academic Research: A Review of Benefits, Concerns, and Recommendations," preprint, bioRxiv, August 18, 2023, 2023.08.17.553688, https://doi.org/10.1101/2023.08.17.553688.

<sup>&</sup>lt;sup>18</sup> Carmen Tamara Ungureanu, "The Ghostwriting in the Context of the Global Digital Transformation," *Revista Romana de Drept al Afacerilor* 2023 (2023): 155.

<sup>&</sup>lt;sup>19</sup> Michael Jay Polonsky and Jeffrey D. Rotman, "Should Artificial Intelligent Agents Be Your Co-Author? Arguments in Favour, Informed by ChatGPT," *Australasian Marketing Journal* 31, no. 2 (2023): 91–96, https://doi.org/10.1177/14413582231167882.

<sup>&</sup>lt;sup>20</sup> "Safeguarding Knowledge: Ethical Artificial Intelligence Governance in the University Digital Transformation | SpringerLink," accessed October 17, 2024, https://link.springer.com/chapter/10.1007/978-3-031-71530-3\_14.

<sup>21</sup> "Frontiers | Reflection on Whether Chat GPT Should Be Banned by Academia from the Perspective of Education

and Teaching," accessed October 17, 2024,

https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2023.1181712/full.

 $<sup>^{22} \ &</sup>quot;Testing of Detection Tools for Al-Generated Text \mid International Journal for Educational Integrity," accessed October 17, 2024, https://link.springer.com/article/10.1007/s40979-023-00146-z?trk=public_post_comment-text.$ 

whereby AI may be used in research or writing aids so long as there is exposure of the fact that this has been done.<sup>23</sup> In the same regard, academic publishers such as Elsevier and Springer Nature have revised their institution guidelines, necessitating that authors clearly state artificial intelligence aids during manuscript writing. More prominently, they state that AI tools cannot be mentioned as a writer, as being an author has connotations of accountability, decision-making, and moral responsibility, that is, what AI has not.<sup>24</sup> It is an effort to save the sanctity of academic authorship and it takes note of the increasing influence of machine aids in the research workflows. Nonetheless, there has always been a major vacuum in the way of policy adoption and enforcement that had to be filled. A 2024 comparative study of higher education institutions (the sample included 50 higher education institutions) said there is a broad variation in the strategies of creating Al policies, including a high degree of procedural documentation and no regulation at all.<sup>25</sup> In addition, the policies do not always draw an accurate line between AI applications that are not that concerning (grammar correction), and those which are more dubious (generation of arguments, or, more generally, whole sections of a paper). Without further clarifications, students and researchers will remain in a state of limbo; not knowing what is allowed, what ought to be discouraged or what is strictly prohibited.

Many institutions have implemented detection tools to detect AI-generated works, including the AI Writing Detector provided by Turnitin or GPTZero. These tools have however not been reliable in high stakes academic settings, in many cases giving false results or being easily circumvented by simple manipulation of the text. This has raised wider questions of due process, fairness and the danger of over-surveillance in schools.

At the moment, the reactions to the AI in academia are still disjointed and reactive. We require urgent but clear, transparent, ethically sound policies that acknowledge some of both the dangers and the opportunities of generative AI. Appropriate and considered regulation should simultaneously support the principles of academic integrity and innovation entrenched with establishment of standards, principled educative and fair enforcement processes.

# Recommendations and Framework for Responsible AI Use

Since integration of generative AI into the academic practices is complex, a principled and enforceable structure should be developed. It is not a matter of whether we want to prohibit the use of technological tools, it seems to matter how we want to shape their use in a way which is consistent with the values of academia; with the values of honesty, accountability, and equity. In this section, the author suggests a multi-level plan with a focus on responsible usage, ethical openness, and institutional openness.

To start with, disclosure of AI help must be made mandatory and part of an academic submission. No matter whether AI will be utilized in the drafting, paraphrasing, or editing procedures, students and researchers should be forced to either disclose the imperativeness of the mentioned support in a specific form (e.g., in an article, under a section title such as the one called the "Use of AI Tools" utilized in theses or essays). This is a method already implemented by dominant publishers and organizations and is transparent, but not guilty of excessive punishment.<sup>26</sup> Notably, disclosure is not an issue of ethics alone, but a tool of maintaining trust to academic products.

Secondly, an established typology of admissible and inadmissible uses will have to be constructed and inserted into the institutional policies. This typology ought to differentiate between lighter, helper applications, e.g. grammar correction, summarization of known information, or polishing language, and more substantial applications, e.g. drafting arguments, or complete drafts. There should be clear ban on use of AI to replace independent thinking or original contribution. Such ambiguity causes students to render the ethical limits arbitrarily, and this may result in them being confused or acting without ethical intentions.<sup>27</sup>

Third, education about AI literacy and academic integrity should be part and parcel of education in every level. Educators, learners, and researchers should know about the possible options and

<sup>&</sup>lt;sup>23</sup> Benjamin Luke Moorhouse et al., "Generative AI Tools and Assessment: Guidelines of the World's Top-Ranking Universities," *Computers and Education Open* 5 (December 2023): 100151, https://doi.org/10.1016/j.caeo.2023.100151.

<sup>&</sup>lt;sup>24</sup> "Can Artificial Intelligence Help for Scientific Writing? | Critical Care," accessed October 17, 2024, https://link.springer.com/article/10.1186/S13054-023-04380-2.

<sup>&</sup>lt;sup>25</sup> Daniel Kim and Jue Wu, "Artificial Intelligence in Higher Education: Examining the AI Policy Landscape at U.S. Institutions," *Proceedings of the 25th Annual Conference on Information Technology Education* (New York, NY, USA), SIGITE '24, Association for Computing Machinery, December 8, 2024, 68–73, https://doi.org/10.1145/3686852.3687076.

<sup>&</sup>lt;sup>26</sup> "Guidance for Authors, Peer Reviewers, and Editors on Use of AI, Language Models, and Chatbots | Medical Journals and Publishing | JAMA | JAMA Network," accessed October 17, 2024, https://jamanetwork.com/journals/jama/fullarticle/2807956.

<sup>&</sup>lt;sup>27</sup> Amy Jackson, "Research Guides: Artificial Intelligence (AI) in Education: AI and Academic Integrity," accessed October 17, 2024, https://libguides.unm.edu/AIinEducation/integrity.

the weaknesses of AI systems, and their ethical side of the coin. Instead of the policing of AI usage based on the use of detection software, the institutions ought to arm the learners with the tools necessary to operate the emergent technologies with accountability.<sup>28</sup> It is possible to create a culture of integrity, which is not easily destabilized by technology change, using a proactive and educational approach.

Fourth, author qualifications need to be strengthened and polished with the rising role of AI. The ICMJE authorship criteria, the Vancouver Protocol, and the like already put emphasis on intellectual input, responsibility and manuscript acceptance which machines would not fulfill.<sup>29</sup> Institutions and journals should remind once again that authorship entails actions, moral responsibility and communicative intention and that including AI on a co-author list contravenes those fundamentals. Such position not only leads to the preservation of the integrity of academic attribution, but also makes it human-centered, in the sense of responsibility in claims and error. Last but not least, to avoid creating conflicts and confusion regarding AI use in higher education, international academic organizations and accreditation agencies should work to determine the bare minimum global standard regarding its use. Similarly to the current guidelines concerning plagiarism, data security, or experiments on human subjects, rules on the usage of AI must be on the global level as well as obligatory. The global harmonized effort would reduce fragmentation of policies and also have a fair expectation among the institutions that have different degrees of access to technological materials.<sup>30</sup>

To sum up, the ecologically apt inclusion of AI in higher learning is not an ethical or a technical problem, it is a normative and pedagogical problem. Through embracing transparency, through strengthening authorship, and through promoting ethical literacy, and through emphasizing ethical literacy institutions can be responsive to the age of AI without damage to the basic principles of scholarship.

#### Conclusion

To sum up, the ecologically apt inclusion of AI in higher learning is not an ethical or a technical problem, it is a normative and pedagogical problem. Through embracing transparency, through strengthening authorship, and through promoting ethical literacy, and through emphasizing ethical literacy institutions can be responsive to the age of AI without damage to the basic principles of scholarship.

The idea of legitimacy associated with academic integrity is not merely a set of rules or laws that need to be followed: it involves the principles of transparency/critical thinking/ honourable integrity. Plagiarism of AI-generated work is not only counteracting these ideals, but it also introduces the risk of converting education into a performance-based process with no skills learned and no mind being put to creative thinking. The unethical application or the lack of proper citation of the AI tools in academic processes can also pose a threat to the integrity of academic footprint and the trust that's based around academia.

However, the academic application of AI is not necessarily inappropriate. When sensibly disclosed and critically managed, AI can become an assistive device as opposed to the false short way. Our ability to set and practice the standards that govern the line between assistance and authorship and efficiency and authenticity, and legality and legitimacy, will determine the future of academic integrity in the age of artificial intelligence, not the categorical rejection of or blind acceptance of technology.

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<sup>&</sup>lt;sup>28</sup> Johny Karam, "Reforming Higher Education Through AI," in *Governance in Higher Education: Global Reform and Trends in the MENA Region*, ed. Nehme Azoury and Georges Yahchouchi (Springer Nature Switzerland, 2023), https://doi.org/10.1007/978-3-031-40586-0 12.

<sup>&</sup>lt;sup>29</sup> "ICMJE | Recommendations | Defining the Role of Authors and Contributors," accessed October 17, 2024, https://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html.

<sup>&</sup>lt;sup>30</sup> "(PDF) Ethics in the Age of AI: Research of the Intersection of Technology, Morality, and Society," accessed October 17, 2024,

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