

AI Dehumanization of the Contemporary Research Community in Arts and Humanities: Reshaping or a Replacement?

Ibrahim Srou*

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Abstract

AI, a powerful tool, has made significant strides in various fields, including academia. However, the question remains whether AI can replace or play a role in the Arts and Humanities. AI's role in the discipline is implicit and inherent. It shapes researchers' thinking, views, and project considerations, such as in Applied Linguistics. This paper examines the threats and challenges posed by AI in the Arts and Humanities, highlighting possible rectifications and measures to be taken by AI academic users. This literature review provides a comprehensive understanding of how AI is an inherent threat to research in Arts and Humanities, molds academic identity, and informs the contemporary research community.

Keywords: AI, Research Community, Identity, Arts and Humanities

1. Introduction

The Humanities and Arts are among the many disciplines that artificial intelligence (AI) has the potential to profoundly influence. Even though AI tools are very good at processing and analyzing data, there is still a lot of debate about how these tools will impact these fields of study. As technology develops, new inventors, works of art, and concepts appear on a regular basis in the ever-changing

* Professor of Applied Linguistics & Literature (English Department - Faculty of Letters and Human Sciences I - Unesco)
ibrahim.srou@ul.edu.lb

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field of artificial intelligence. As a result, there is an extensive interplay transpiring between AI technology, society and academia in particular. AI applications in Humanities and Arts are becoming more and more varied, since they include creative works that are supported by AI as well as digital humanities initiatives. This investigation proposes ways to reduce potential risks while offering a thorough examination of how Artificial Intelligence impacts and shapes Humanities and Arts studies.

2. Methodology

This paper is qualitative in nature that is based on content and thematic analysis. Since it is a literature review in essence, it relies on accredited referential digital repositories in addition to tracing the most recent publications on the topic at hand. Accordingly, such a methodology enables the researcher to reveal the updated contributions to the field and examine the challenges and positive outcomes of AI use, in order to highlight how can scholars and academics surpass the challenges and keep the human touch dominant in this field.

3. Academics, Researchers and AI

AI is being developed by a community of scientists, researchers, and academics from different fields. To develop AI technologies, professionals in the fields of computational science, mathematics, biological sciences, language study, cognitive psychology, and engineering work together. They carry out studies, write scholarly articles, and add to the theoretical underpinnings of artificial intelligence. Institutions of higher education also have a significant influence on the standards and perspectives that their students bring to their professional lives. As a result, universities and industrial research facilities play a significant role in determining the diversity of the AI community (Hartmann and Henkel 2020; Mouta et al., 2023).

Furthermore, in line with the above scholars, Touretzky et al. (2019) are adamant that students enrolled in graduate and undergraduate programs at higher education institutions are essential to the development and advancement of artificial intelligence. They acquire the core knowledge and abilities required for AI development while also offering novel insights and suggestions. This is due to the fact that numerous colleges and other educational establishments provide specific AI curricula and research possibilities, fostering the next generation of AI innovators from an early age. Because it will assure transparency, equity, and accessibility, it is crucial that higher education institutions record the disciplinary variations across AI awareness and utilization across different fields of study (Barrot, 2023).

It is not a recent development that computer technology is used in the humanities. Machine Translation (MT), or the fully automated translation of spoken or written material by a computer, was

one of the earliest uses of computers in the area. Eventually, Example-Based Machine Translation (EBMT) took its place. Statistical Machine Translation (SMT) was quickly created by combining these with statistical techniques. Neural Machine Translation (NMT) is the focus of the field's most recent advancements. Artificial neural networks (ANNs), or machine learning models that mathematically simulate the arrangement of neurons in a brain, are used in this kind of machine translation. Therefore, according to Lukasik (2024), this technique is an example of an application of AI.

Molina (2022) claims that intelligent systems include things like intelligent computer-assisted language learning (ICALL), which enables individualized language acquisition without the need for much—if any—tutoring or teaching assistance⁸. These systems combine natural language processing (NLP) with intelligent tutoring systems (ITS), the latter powered by dynamic artificial intelligence (AI) that makes decisions, in contrast to the old static (i.e., preprogrammed) computer-assisted instruction (CAI) tools. Researchers began to gather electronic corpora, or machine-readable, organized text collections, in tandem with the advancement of machine translation. The goal of these collections is to enable a broad range of natural language studies and practical uses. Text corpora have been utilized in lexicography, terminology, forensic linguistics, language learning and teaching, lexicography examinations, and even psychoanalysis since their inception.

Counting in billions of tokens, modern corpora can reach sizes of up to 52 billion. Understanding corpora is essential to training, validating, and enhancing generative AI models. One area that has directly influenced the development of productive AI tools like ChatGPT is Natural Language Processing or NLP, which is a cross-disciplinary field that blends linguistics and computer sciences. It uses probabilistic machine learning techniques, such as neural networks, to handle linguistic data, such as text corpora. McEnery and Hardie (2012) highlight the significance of corpus data, stating that “corpus data are essential where machine learning algorithms are the basis for an NLP application. So, machine learning-based techniques to natural language processing will not function without them” (p. 96).

As a result, NLP techniques and tools have been extensively used in automated applications, including terminology extraction, text summarization, machine translation, machine understanding, text production, retrieval of data, speech detection, and language analysis and annotation (Lukasik, 2024). Generative AI is another computational approach. “From training data, computational approaches that may produce seemingly new and meaningful information, including text, images, or music, are referred to as generative artificial intelligence (GenAI)” (Feuerriegel et al, 2024, p. 126). This computational method is based on transformer-based deep neural networks (DNN), which have led to the development of particular models, including text-to-image and large language models (LLMs). Fundamentally, GenAI produces the result based on a user's prompt.

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In actuality, prompts are instructions written in plain language that tell the model how to perform a particular task (provide output). Chatbots powered by are the systems that have aroused the public interest in AI the most recently. A computer program that mimics human dialogue with a user is known as a chatbot²¹. AI-powered chatbots have been developed as a result of recent developments in the field; two of the most well-known examples are Google's Gemini and OpenAI's ChatGPT (IBM, 2023). Consequently, ChatGPT—whose acronym, which refers to Generative Pre-trained Transformer and discloses the technology behind the service—became the first AI-powered software that received widespread public interest, amassing 100 million users in just two months following its launch (IBM, 2023).

4. The Humanities and Generative Artificial Intelligence

Since the end of 2022, when the alleged AI surge commenced, people in general have been heavily utilizing technology, particularly GenAI. Researchers from various scientific disciplines have experimented with and used AI in their studies, in addition to the general public. Either the viability of including generative AI into the research was assessed, or generative AI was already utilized in the studies. For instance, in answer to a question concerning the application of generative AI in the humanities, Lukasik (2024) investigates the viability of ChatGPT. In response, the automated tool provided a list of ten potential applications of AI in the humanities as follows: “Content Creation and Analysis, Language Translation and Preservation Research, Data Analysis, Education and Pedagogy, Ethics and Philosophy, Cultural Analysis and Critique, Historical Simulation and Modeling, Accessibility, Collaborative Projects, and Preservation and Restoration” (ChatGPT, Lukasik, 2024, p. 8).

Despite the list's stunning appearance, Lukasik (2024) considers that it should be treated cautiously because some of the potentials and capabilities might not be as readily reachable as they could be. For instance, given the limitations of the context that the software receives, it is currently not possible to analyze enormous amounts of text using generative AI. This, for the author, is revealed in dictionary building and the work of terminology.

Moreover, as for AI in academia, and teaching in particular, Aljuaid (2024) considers that “Artificial Intelligence may improve academic writing but is unlikely to replace traditional courses. So, a balanced approach integrating Artificial Intelligence support while preserving core elements of academic writing. Education appears most effective in preparing students for diverse writing challenges” (p. 26).

Contrary to Lukasik (2024), Lew (2023) and Anthony (2023) consider that five beneficial tasks can be effectively completed by ChatGPT when utilizing the GPT-4 model. First, determine the

domains that certain text snippets belong to. Second, determine the domains that individual phrases belong to. Third, write terminological corpus entries that include the following information: a list of units of phraseology containing the term, indicative sentences that use the term, translations of the term into Polish, German, French, Lithuanian, and Russian. Fourth, produce lengthy or brief definitions, superordinate lexis, and lists of subordinate key words along with associated terms. Finally, construct definitions, one for learners and the other for extremely complex knowledge such as equations as well as select terms from specialized sources at random.

5. Academia, Generative AI Tools: Challenges and Limitations

There are limitations to AI tools which reveal that the human aspect is indispensable in Humanities and academia. Such limitations can be summed up in the following notions. The restricted quantity of tokens in the context window and hallucinations, in which the model generates an output (response) which is illogical, are two limitations of AI technologies (Alaqlobi et al., 2024). This could occur due to the intricacy of the model, bias or gaps in the training set, or a failure to comprehend a trigger. When medical data is studied, for instance, or when the results could lead to bias, disinformation, and abuse and are thus unwanted, hallucinations could be hazardous (Biswas, 2023). Thus, the limited quantity of tokens in the context window, hallucinations, the restricted range of the experimental data, and the limited amount of inquiries and results created by paid accounts are some of the limitations of AI technologies (Lukasik, 2024). From the standpoint of using generative AI tools in academia, it is important to highlight that the main problems with their widespread application—of which data privacy is a crucial concern—are the lack of explainability and honesty regarding the information's source as well as the results' inability to be replicated (Bearman & Ajjawi, 2023).

The institutional policies that have been implemented in a particular institution determine whether or not to permit the use of AI in academia. Although the usage of AI technologies can increase productivity, it can also result in bias and other oversights and errors. Moreover, there are problems with authorship, copyright, and potential plagiarism. Accordingly, Lukasik (2024) emphasizes the notion that AI utilization for creative contributions is not subject to consent. So, the writers of academic research must accept full responsibility for the information produced by AI while also acknowledging the use of such technology. Also, the ability of learners to employ generative AI is another problem. However, most significantly, the new developments will undoubtedly help researchers in the humanities.

A technical review of AI's uses in Linguistics research is given by Groenewald et al. (2024), who concentrate on the technology's impact on language acquisition and analysis procedures. They

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look at how AI is changing how people perceive linguistic events. Because AI tools, especially NLP, ML, and DL, enable automated analysis of linguistic data, such tools have played an important role in advancing linguistic studies. Groenewald et al. (2024) present an optimistic picture, saying that researchers can evaluate theoretical models against empirical evidence and replicate the mental operations involved in language learning by using computational simulation and model-building tools. Furthermore, phonological, morphological, syntactic, and semantic study of language acquisition processes are also made possible by AI approaches. As a result, these methods shed light on the processes that underlie language learning.

In an interesting paper, Roe (2024) addresses a number of significant discoveries about Generative AI and its applicability to the field of Applied Linguistics. In addition to outlining some research projects for future investigation, the author looks ahead to the GenAI era and the *Journal of English and Applied Linguistics*. He states in an alarming manner that using GenAI as a research tool or helper presents some ethical challenges, such as copyright disputes, the carbon emissions associated with training language models, and the possibility that GenAI tools could reinforce structural discrimination and inequality. Regarding the relationship between academic capital and inequality, even employing GenAI tools for literature searches could expose researchers to algorithmic biases that would serve to reinforce existing disparities and restrict their access to new academics.

The potential and practicality of AI technologies for guiding different pedagogical techniques of education are assessed by Ali et al. (2024). In order to assess the primary obstacles influencing the consequences of using AI models in the education sector, the authors examine the body of published literature. The efforts they present are both pro- and anti-AI applications. “Five unique dimensions: user, operational, environmental, technological, and ethical challenges are used to present a classification framework” (Ali et al, 2024, p. 10). Therefore, Ali et al. (2024) suggest using ChatGPT as an additional teaching-learning aid, with the condition that educators must be able to finance tailored and enhanced versions of the tool. Hence, a variety of AI-related effects on learning are covered in the study of Ali et al. (2024), which include the requirements for innovative instructions, training teachers on a variety of datasets and genres, incorporating human input, maintaining data security, and removing bias. The authors conclude by summarizing strategies that promote broader adoption of ChatGPT and other AI technologies in the education sector and offer strategic answers to the developing difficulties that have been discovered.

6. Recommendations

According to what has been exhibited in the above sections, the paper presents the following recommendations:

1. AI must be trained in algorithms that encompass the collective qualities, social values, and ethical issues incorporated in the development of AI technology.
2. There is the necessity for creating AI technologies that are equal, readily available, and egalitarian, which benefit all societal segments.
3. The AI sector must base its advancement on the expertise of humans.
4. AI programmers and developers must be cultivated in the ethics and values of academic research and its development. This would eliminate or at least lessen AI bias.
5. There must be an encouragement of increased inclusion and involvement in the field of Artificial Intelligence with respect to training and preparing academics, researchers, and students.
6. AI creators must be held accountable for ethical breaches and biases. This would ensure a safe human-AI inclusion and a safe environment for academic practitioners.
7. Practical inclusion of AI analytical instruments in Applied Linguistics, research, and interdisciplinary studies while preserving the human perspective.
8. Responsible usage of AI tools guided by a continuous human supervision, especially when utilizing such tools in linguistic studies, research, and education.
9. The conduction of more in depth studies that help in understanding the complexities of AI usage in Academia as well as Arts and Humanities. This would secure a sustainable human control over AI and technological practices in such domains.

7. Conclusion: Mitigating Solutions

The AI wave is dominating every aspect of our life, whether in our daily chores, communication, or academic practices. Thus, in order to lessen the threat of AI, we stress what Tadimalla and Maher (2024) propose, which is the notion of AI Identity. AI identity is formed by individual awareness, societal influence, and external cultural standards. Such perspectives affect the conversation surrounding AI technology in diverse cultural contexts, shedding emphasis on the important role that diversity and inclusion play in influencing the academic and public views in the understanding of AI. Academics and authors should promote a more encompassing and responsible AI ecosystem by putting forth the AI identity structure, which illustrates the implications of multiple social structures like “diversity, fairness, inclusion, bias, sense of belonging, and accountability across the creators, creations, and consequences of AI” (Tadimalla & Maher, 2024, p. 531).

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