AI vs Human: Academic Essay Authenticity Challenge

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***Abstract*—The "AI vs Human: Essay Authenticity Challenge" examines the ongoing debate between artificial intelligence-generated content and human-authored essays. In the age of generative AI technologies such as ChatGPT, preserving authenticity and originality in academic and artistic writing has become paramount. This challenge contrasts AI versus human-generated texts in terms of creativity, depth, coherence, and ethical consequences. The study's purpose is to develop a framework for assessing the authenticity of written content by identifying its strengths and faults. The study also investigates the consequences of AI-assisted writing on education, intellectual property, and human creativity, and suggests strategies for balancing AI assistance with the preservation of true human expression.The study explores the complexities of authenticity in written communication by comparing essays written by humans with artificial intelligence systems. It also investigates the challenges that educators, academics, and legislators face in identifying AI-assisted content, maintaining ethical standards, and finding a balance between employing AI as a tool and preserving authentic human creativity. Furthermore, the paper proposes practical strategies and frameworks for recognizing AI-generated content, protecting intellectual property, and encouraging critical thinking in an increasingly AI-driven world.**

***Index Terms*—Authenticity, originality, generative AI, creativity, coherence, ethical consequences, academic integrity, intellectual property, detection framework, ethical standards, education, AI-driven world.**

I. INTRODUCTION

It is Rapid advances in artificial intelligence (AI) have altered numerous fields, including education and creative writing. Generative AI models, such as ChatGPT and GPT-4, have emerged as effective tools for creating
essays, articles, and other written content that is both fluid and coherent. While these technologies have many benefits, such as supporting non-native speakers,generating ideas, and automating repetitive tasks, they also raise fundamental concerns about originality, authenticity, and the diminishing importance of human creativity. The "AI vs Human: Essay Authenticity Challenge" aims to address a serious issue of our time: how can this project tell the difference between essays authored by humans and those manufactured by AI? The challenge looks on the influence of AI-generated content on education, academic integrity, and the creative industries. Essays, formerly viewed as a means of showcasing human intellect, creativity, and expression, are now being supplemented— or maybe replaced—by AI- driven content. This trend puts into question the fundamental concept of originality, as well as the ethics of writing and intellectual property.
Furthermore, as schools and institutions rely increasingly on AI-assisted technologies, they must evaluate the validity of textual inputs, which is a difficult task. Traditional plagiarism detection methods usually fail to identify AI-generated material, leaving a significant gap in academic integrity. At the same time, society must address the broader implications of this shift, such as the impact on human cognitive skills, the value of creative endeavor, and the appropriate balance of human and machine collaboration.
This introduction lays the groundwork for a thorough examination of AI and human-authored essays, focusing on their distinct features, strengths, and limitations. By studying the problems and opportunities given by AI- generated writing, this study hopes to shed light on how we might manage the junction of technology and human creativity while retaining the authenticity and uniqueness that distinguish us as individuals.

II. LITERATURE REVIEW

Recent advances in artificial intelligence (AI) and natural language processing (NLP) have transformed content creation and detection technologies, notably

in academic and professional settings. As machine-generated writing becomes more similar to human-authored content, academics are working on approaches to recognize AI- generated content and evaluate its influence on authenticity, learning, and creativity.

Chowdhury et al. (2024) present a complete challenge titled "GenAI Content Detection Task 2," which assesses the capacity to distinguish between human and AI-generated academic writings. The paper underlines the growing threat to academic integrity posed by generative AI models, as well as the significance of better detection approaches for ensuring authenticity [1]. Similarly, AL-Smadi (2025) uses ELECTRA models and stylometry to identify machine- generated writings in English and Arabic. This dual- language approach emphasizes the worldwide breadth of the problem and the need for language-specific detection tools[4].Werdiningsih et al. (2024) investigate the use of AI tools such as ChatGPT in academic writing, with an emphasis on English as a Foreign Language (EFL) students. Their qualitative study suggests that such tools have a dual nature: they improve creativity and fluency while also challenging originality. The literature frequently discusses the need to strike a compromise between maximizing the potential of AI and maintaining academic integrity [2].

Ahmed et al. (2023) advance the area by developing a bilingual corpus for studying argumentative writing among Arabic and English learners. This site provides insights into language-specific style elements that are critical for constructing effective AI detection algorithms [3]. Similarly, Alfaifi and Atwell (2013) propose an Arabic learner corpus, which lays the framework for studying Arabic language acquisition and stylistics, while also enriching resources for AI content analysis [5].

Guo et al. (2023) investigate the usefulness of AI in generating authentic-sounding content by comparing ChatGPT's capabilities to those of human experts. Their findings show that the gap between AI and human authorship is decreasing, necessitating advanced standards like as RAID [12], which Dugan et al. (2024) developed for evaluating detection methods. RAID provides a common framework for rigorous assessment, emphasizing the importance of joint efforts to handle the issues posed by generative AI [9].

Bhattacharjee et al. (2023) offer a new domain adaption method, ConDA, for detecting AI-generated text across domains. Their methodology emphasizes the relevance of transfer learning and domain adaptation in ensuring that detection methods stay effective as AI capabilities evolve [6]. Gallé et al. (2021) investigate unsupervised approaches for recognizing machine-generated text, emphasizing distributional differences. This unsupervised approach provides an alternative to typical supervised learning models, broadening the toolkit for content detection [10].

III. OVERVIEW

Rapid developments in generative AI technologies, such ChatGPT and GPT-4, have fundamentally changed how material is created in a variety of fields, including creative writing and teaching. By contrasting articles written by humans and those produced by artificial intelligence, this paper, "AI vs. Human: Academic Essay Authenticity Challenge," investigates the current debate about authenticity in academic writing.

Technological Developments in Detection: To effectively distinguish between human and artificial intelligence- generated information, the study discusses state-of-the-art methods such as linguistic pattern analysis, stylometry, and metadata evaluation.

Multilingual and Cultural Inclusivity: In order to ensure the framework's scalability and inclusivity, the research examines the difficulties in identifying AI-generated content across a variety of languages and cultural contexts, acknowledging the worldwide nature of academic writing.

Legal and Ethical Implications: The study explores difficult moral conundrums, such as authorship attribution, intellectual property protection, and preventing possible abuse of AI to spread false information or

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Future Directions: In order to maintain authenticity and originality as essential components of academic and creative writing activities, the study presents a vision for developing detection tools that develop in tandem with AI technology.

Human-AI Collaboration: Rather than replacing genuine human expression, the article offers strategies to use AI as a supplementary tool to boost human creativity, productivity, and innovation.

To give a more thorough and forward-looking assessment of the paper's importance and contributions, these ideas can be incorporated into the overview.

IV. TASK AND DEFINITION

A. Task and definition

The goal is to discern between AI-generated and human- written candidate essays. Given the input essay, the task is

Create a text detector D(e) that can identify between AI- generated and human-authored content. We created this edition's job as a binary classification problem.

B. Datasets

The objective is to develop a system for identifying AI- generated content in academic works. The collection comprises articles written by both native and non-native speakers, as well as AI-generated content. This is an enormous task.

*The goal was to collect authentic academic writings while protecting author privacy, obtaining informed consent, and ensuring ethical content sources. Additionally, essays were authored by human authors without using artificial intelligence or plagiarism.

* Collecting articles from a variety of academic levels an

cultural backgrounds to assure their inclusion in the dataset.

C. Development Phase

During the development process, we delivered training, validation, and development tests. During this phase, we gathered human-authored essays and essay themes. We carefully created the data splits.

To eliminate overlap between training, validation, and development test datasets, each set was built with unique essay subjects.

We carefully categorized essay themes inside each division based on subject similarities. This classification assigns subjects for LLM-generated writings, while the remaining categories are designated for human-authored essays.

D. Evaluation Phase

Created a novel dataset, the Generated and Real Academic Corpus for Evaluation (GRACE), for evaluation purposes.

Essays in English can be written by humans or created by AI.

E. Data Collection

To build the human-authored dataset, carefully aligned test set essay statements with development phase subjects.

Produced multiple essay sentences for each type.

The subjects covered are social influence and technology, lifestyle choices and preferences, cultural and global perspectives, environmental and societal responsibility, and personal growth and experience.

V. RESULTS

To distinguish between academic essays authored by humans and those produced by artificial intelligence, a web- based application called the "AI vs. Human: Academic Essay Authenticity Challenge" was created. A machine

learning model that has been trained on a dataset of texts written by humans and by artificial intelligence is used by the tool.

How It Operates:Input: Users type a scholarly essay into a specific text field.

Analysis: The machine learning model of the tool assesses the input text by looking at a number of linguistic characteristics, including sentence construction, vocabulary difficulty, and stylistic subtleties.

Prediction: The tool analyzes the essay and makes a

prediction on whether it was written by an AI or a human. The web page shows the forecast outcome.
Potential Uses:There are numerous possible uses for this instrument in educational settings, including:
Identifying AI-generated plagiarism: Teachers can utilize the program to find out when pupils might have turned in work that was created by AI under false pretenses.
Evaluating essay quality: The tool can be used to evaluate student writing and pinpoint areas in need of development. Enhancing AI writing models: By pinpointing the models' shortcomings and potential areas for development, the tool can be used to assess and improve AI writing models.

VI. OBJECTIVES

The following objectives outline the key goals of the project:

1. Comparative Analysis:
Evaluates works written by AI and humans based on a variety of criteria, including creativity, coherence, emotional depth, originality, and factual correctness.
Highlights differences in structure, style, tone, and content between AI-generated and human-authored writings.

2. Promote Authenticity and Originality:
Raise awareness about the importance of individuality in academic and creative writing.
Advocate for the adoption of ethical AI tools in order to prevent undermining human innovation and intellectual labor.

3. Evaluate AI's Capabilities and Limitations:
Analyze AI's strengths and drawbacks in essay generation, including its capacity to match human originality, emotional depth, and contextual comprehension.
Highlight the gaps in AI-generated information, such as personal insights, abstract reasoning, and cultural nuances.

4. Explore Educational Impacts
Evaluate the impact of AI-generated writing tools on education, particularly in terms of developing critical thinking, creativity, and ethical ideals among students.

5. Examine Ethical Implications:Develop or improve approaches and tools for identifying AI-generated writings.Test and assess the effectiveness of existing AI- detection systems, and suggest improvements for greater accuracy

VII. PROPOSEDMETHOD

The proposed method for the "AI vs. Human Essay Authenticity" challenge involves a multi-step procedure that integrates AI tools with human evaluation. An AI detection program would first analyze the essay to search for patterns—such as repetitive terminology, odd sentence structures, or overly formal language— that would indicate machine-generated content. Human evaluators, who are subject-matter experts, would then review the essay to determine its degree of originality, comprehension, and engagement with the topic. They would also consider the tone and style of the text, looking for signs of human creativity, subtlety, and emotion that are sometimes difficult for AI to replicate. AI and human judgment guarantee a more accurate and nuanced evaluation of the essay's legitimacy.
Additionally, the strategy would incorporate a peer-review procedure wherein papers written by AI and humans are evaluated based on a common rubric that takes into account a variety of criteria, including as coherence, reasoning, evidence, and innovation. AI-generated essays might have a propensity to rely too much on facts or lack nuanced opinions, whereas human articles might have more unique ideas and personal touches. To properly authenticate the challenge, any copied or plagiarized text would be detected by a plagiarism detection tool. The essay's writing style would be compared to a database of recognized AI-generated texts and human-authored works as a last validation step to guarantee a thorough cross-examination process.

VIII. LIMITATIONS

One key barrier is the dynamic nature of AI-generated content. As AI models like GPT-3 and GPT-4 improve, their writing gets more sophisticated and human-like, making it hard for current detection

tools to tell the difference between human and machine-generated writing. Furthermore, the quality and diversity of training data are critical for the system's accuracy. If the dataset does not include representations of different writing styles, cultural situations, or academic levels, the detector may struggle to classify. Another issue arises from minor differences between AI-generated and human-authored information.

IX. ETHICAL CONSIDERATIONS

The datasets used in the shared activity may represent the essay authors' preconceptions or viewpoints, even if they followed the guidelines. The datasets do not contain any personal information, and no such information was obtained during the curation process. This project does not anticipate any ethical difficulties around privacy. The dataset was only available to individuals who signed an agreement.

X. FUTURE SCOPE

The future focus of the "AI vs. Human: Authenticity Challenge" will be on how AI continues to impact human originality, creativity, and trust. The distinction between genuine human expression and machine-generated output may become increasingly hazy as AI gets better at producing content that is indistinguishable from human creations, posing serious queries regarding the worth and uniqueness of literature, art, and media. This subject also touches on ethical issues, including when AI is abused to produce false information or deepfakes that undermine public confidence. The essay might also look at ways to protect authenticity while accepting the coexistence of human and AI contributions in creative and professional fields, such as AI-detection tools and laws.

Furthermore, authorship and intellectual property concerns will become increasingly important as AI develops. When AI is able to create novels, music, and artwork, ownership and credit issues will become more complicated. Who is the owner of stuff produced by AI? Is it the AI itself, the user, or the AI's creator? Philosophical and legal rethinking will be necessary to address these difficulties. Furthermore, as AI develops, the limits of human-machine interaction will be pushed, forcing us to reevaluate how AI functions in defining "authenticity" in a world where everything is digitally connected and how AI affects personal identity and expression. Maintaining trust will be difficult, but so will creating structures that encourage human creativity to work together.

XI. CONCLUSION

The "AI vs. Human: Authenticity Challenge" concludes by highlighting the intricate connections between human creation, trust, and identity and technology advancement. The development of artificial intelligence (AI) is upending traditional ideas of originality and posing significant moral and legal questions regarding authorship, intellectual property, and the possibility of false information. Even though AI can boost and supplement human creativity, careful consideration needs to be given to how to preserve the integrity of human expression while incorporating AI technologies in a way that is open, moral, and advantageous going forward. In the end, this project emphasizes the necessity of constant discussion and creativity to guarantee that the contributions of both artificial and human intelligence are recognized and appreciated in a society where technology is becoming more and more common.

Furthermore, as we proceed, it will be essential to establish frameworks that not only resolve ethical dilemmas but also encourage the growth of AI responsibly. Maintaining authenticity and trust across a variety of channels, such as social media and the creative industries, will require keeping AI systems in accordance with human values and societal norms. Additionally, as AI continues to play bigger roles in decision-making and problem-solving, it will be vital to maximize the collaboration between human knowledge and machine efficiency. The goal should be to enhance rather than replace human talents in order to guarantee that technology serves humanity's best interests while preserving the uniqueness of human creativity, emotions, and experiences.

REFERENCES

[1] Chowdhury, S. A., Almerekhi, H., Kutlu, M., Keles, K.E., Ahmad, F., Mohiuddin, T., ... & Alam, F. (2024). GenAI Content Detection Task

2: AI vs. Human-- Academic Essay Authenticity Challenge. arXiv preprint arXiv:2412.18274.

[2] Werdiningsih, I., Marzuki, & Rusdin, D. (2024). Balancing AI and authenticity: EFL students' experiences with ChatGPT in academic writing. Cogent Arts & Humanities, 11(1), 2392388.

[3] Abdelhamid M. Ahmed, Xiao Zhang, Lameya M. Rezk, and Wajdi Zaghouani. 2023. Building an annotated l1 arabic/l2 english bilingual writer corpus: The qatari corpus of argumentative writing (qcaw). Corpusbased Studies across Humanities, 1(1):183–215.

[4] Mohammad AL-Smadi. 2025. IntegrityAI at GenAI De- tection Task 2: Detecting Machine-Generated Academic Essays in English and Arabic Using ELECTRA and Stylometry. In Proceedings of the 1st Workshop on GenAI Content Detection (GenAIDetect),Abu Dhabi, UAE. International Conference on Computational Linguistics.

[5] AYG Alfaifi and ES Atwell. 2013. Arabic learner cor- pus v1: A new resource for arabic language research. In Second Workshop on Arabic Corpus Linguistics.

[6] Amrita Bhattacharjee, Tharindu Kumarage, Raha Moraffah, and Huan Liu. 2023. ConDA: Contrastive domain adaptation for AI-generated text detection. In Proceedings of the 13th International Joint Conference on Natural Language Processing and the 3rd Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics (Volume 1: Long Papers), pages 598–610, Nusa Dua, Bali. Association for Computational Linguistics.

[7] Jiuhai Chen, Rifaa Qadri, Yuxin Wen, Neel Jain, John Kirchenbauer, Tianyi Zhou, and Tom Goldstein. 2024. Genqa: Generating millions of instructions from a handful of prompts. Preprint, arXiv:2406.10323.

[8] Kohinoor Monish Darda, Marion Carre, and Emily S. Cross. 2023. Value attributed to text-based archives generated by artificial intelligence. Royal Society Open Science, 10(2):220915

[9] Liam Dugan, Alyssa Hwang, Filip Trhlík, Andrew Zhu, Josh Magnus Ludan, Hainiu Xu, Daphne Ippolito, and Chris Callison-Burch. 2024. RAID: A shared benchmark for robust evaluation of machine- generated text detectors. In Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers), pages 12463– 12492, Bangkok, Thailand. Association for Computational Linguistics.

[10] Matthias Gallé, Jos Rozen, Germán Kruszewski, and Hady Elsahar. 2021. Unsupervised and distributional detection of machine-generated text. arXiv preprint arXiv:2111.02878.

[11] Rana Gharib and Ahmed Elgendy. 2025. RA at GenAI Detection Task 2: Fine-tuned Language Models for Detection of Academic Authenticity, Results and Thoughts.In Proceedings of the 1st Workshop on GenAI Content Detection (GenAIDetect), Abu Dhabi, UAE. International Conference on Computational Linguistics.

[12] Biyang Guo, Xin Zhang, Ziyuan Wang, Minqi J iang,Jinran Nie, Yuxuan Ding, Jianwei Yue, and Yupen Wu. 2023. How close is chatgpt to human experts? comparison corpus, evaluation, and detection. arXiv preprint arXiv:2301.07597.

[13] Rana Gharib and Ahmed Elgendy. 2025. RA at GenAI Detection Task 2: Fine-tuned Language Models for Detection of Academic Authenticity, Results and Thoughts. In Proceedings of the 1st Workshop on GenAI Content Detection (GenAIDetect), Abu Dhabi, UAE. International Conference on Computational Linguistics.

[14] Biyang Guo, Xin Zhang, Ziyuan Wang, Minqi Jiang, Jinran Nie, Yuxuan Ding, Jianwei Yue, and Yupeng Wu. 2023. How close is chatgpt to human experts? comparison corpus, evaluation, and detection. arXiv preprint arXiv:2301.07597.

[15] Hans WA Hanley and Zakir Durumeric. 2024. Machine- made media: Monitoring the mobilization of machine-generated articles on misinformation and mainstream news websites. In Proceedings of the International AAAI Conference on Web and social media, volume 18, pages 542–556.

[16] Xuanli He, Qiongkai Xu, Lingjuan Lyu, Fangzhao Wu, and Chenguang Wang. 2022. Protecting intellectual property of language generation apis with lexicalwatermark. Proceedings of the AAAI Conference on Artificial Intelligence, 36(10):10758–10766.

[17] Vijayasaradhi Indurthi and Vasudeva Varma.

2025. Tesla at GenAI Content Detection Task 1: LLM Agents in Multilingual Machine-Generated Text Detection. In Proceedings of the 1st Workshop on GenAI Content Detection (GenAIDetect), Abu Dhabi, UAE. International Conference on Computational Linguistics.

[18] Jiao Kaijie, Yao Xingyu, Ma Shixuan, Fang Sifan, Guo Zikang, Xu Benfeng, Zhang Licheng, Wang Quan, Zhang Yongdong, and Mao Zhendong. 2025. CMIAIGCX at GenAI Detection Task 2: Leveraging Multilingual Proxy LLMs for Machine-Generated Text Detection in Academic Essays. In Proceedings of the 1st Workshop on GenAI Content Detection (GenAIDetect), Abu Dhabi, UAE. International Conference on Computational Linguistics.

[19] John Kirchenbauer, Jonas Geiping, Yuxin Wen, Jonathan Katz, Ian Miers, and Tom Goldstein. 2023. A watermark for large language models. In International Conference on Machine Learning, pages 17061–17084.