

Title: Letter content generation in a government site using AI

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Summary of research papers

Paper 1

Paper title: *A Deep Learning Approach to Classify AI-Generated and Human-Written Texts*

In this paper, they used a robot trained on LSTM to train a robot to generate a Turkish text for academic search by building a balanced dataset of 4000 labeled statements, then trained a TensorFlow framework based on an LSTM model. They reached 97.28% accuracy and $F1 \approx 0.97$ after 20 epochs, with 19 misclassifications out of 698 test samples (around 2.7%).

In my opinion, the strength of the study is more practical than theoretical, and it achieves a great accuracy in non-English languages. On the one hand, cause of the dataset scale there is no guarantee that the particle can my implemented correctly in all academic fields.

(Kayabas, Ayla, Ahmet Ercan Topcu, Yehia Ibrahim Alzoubi, and Mehmet Yıldız, 2025)

Paper 2

Paper title: *Artificial intelligence, text generation tools and ChatGPT – does digital watermarking offer a solution?*

It discusses watermarking as a conceptual solution to detect AI-generated texts, especially from ChatGPT. IT's focused on theoretical, not experimental, and focuses on the technical limitations, privacy concerns.

In my opinion, the strength of the paper is the awareness of the risks of relying on watermarking. On the one hand, the disappearance of experimental results makes it hard to evaluate how watermarking performs under real editing conditions or across different platforms.

(Lancaster, 2023)

Paper 3

Paper title: *Exploring AI Generated Texts vs. Human Written Texts in EFL Academic Writing: A Case Study of Qassim University*

This paper studies the AI-generated and student-written texts in academic writing at Qassim University. They collected and analyzed samples to study the way of writing sound to detect AI settings in the academic search in KSA.

In my opinion, the strength of this study is that it is relevant to a local practical comparison, but the sample size makes it hard to apply the results to all academic writing. (Mohammed AbdAlgane, Rabea Ali, Khalid Othman, Intisar Zakariya Ahmed Ibrahim, Mohamed Kamal Mustafa Alhaj, Ezzeldin M. T. Ali, Faris Salim Allehyani, 2024)

Paper 4

Paper title: *Artificial intelligence assisted academic writing: recommendations for ethical use*

This paper suggests ethical guidelines for using AI in academic writing, like human supervision and organization policies. The study isn't experimental and focuses on other expert guidelines and policy recommendations.

I see that the strong point of this paper is about applying the structured ethical framework, but it doesn't provide any real case studies to show how these rules work in practice. On the one hand, the recommendations are clear, but without experimental testing, it's not easy to know the effective or acceptance can be applied to academic writing. (BioMed Central, 2025)

Paper 5

Paper5: *University Students' Insights of Generative Artificial Intelligence (AI) Writing Tools* (Gasaymeh et al., 2024)

The paper used a survey to understand how the students use AI writing tools and what they think about them. The results of this survey show limitations in students' knowledge of ethical concerns.

In my opinion, the strength of the study is in capturing students' thoughts directly, so that the sample may not be completely trusted. (Gasaymeh et al., 2024)

Paper 6

Paper6: *Exploring the power of generative AI: enhancing business email writing skills for L2 learners*

In this paper, the author focuses on how AI tools help students to write better business emails. They used a pre-/post test design and learner feedback and found that AI support improved clarity, tone, and writing speed.

The strength of this study is in show it shows short-term gains in a real classroom setting, but it does not measure long-term effects or how students transfer these skills without AI. The results are promising, but without follow-up, it is hard to know if the improvements last. (Latisha Asmaak Shafie, Aidura Aiyub, Nurul Alia Nafis Najmi, 2024)

Critical Analysis

Across the six papers, the papers show different ways of dealing with AI-generated texts, like classification models or ethical guidelines. Some papers are practical, and others are more theoretical.

The strength of this collection shows how AI affects writing in different contexts, but the lack of experiments or long-term follow makes it hard to apply the results widely or trust them fully.

Connections

There are some connections between the papers in point of how they deal with AI writing. Paper 1 and Paper 3 both focus on detecting AI-generated texts, but Paper 1 uses deep learning and Paper 3 uses stylistic analysis in a local case.

Paper 2 and Paper 4 are more about the ethical and technical limits, with Paper 2 talking about watermarking and Paper 4 giving policy rules.

Paper 5 and Paper 6 focus on students, but in different ways. Paper 5 talks about what students think about AI tools, and Paper 6 tests how AI helps them to write better emails.

AS a conclusion, the connection between all papers they are trying to understand how AI affects academic writing.

Conflicts between findings

There are conflicts between those papers in how they see AI writing tools. for example:

Paper 1 shows high accuracy in detecting AI texts using LSTM and with non-English languages, while Paper 5 shows that students do not fully understand AI tools.

Paper 6 says AI helps students create better emails, but Paper 4 is concerned about using AI without rules.

Also, Paper 2 supports watermarking as a solution, but Papers 3 and 1 focus on style and machine learning instead.

Synthesis Matrix for Literature Review

Study	Authors	Year	Research Design	Key Findings	Results	Methodology
A Deep Learning Approach to Classify AI-Generated and Human-Written Texts	Kayabas, Ayla, Ahmet Ercan Topcu, Yehia	2025	Experimental	Achieves great accuracy in non-English languages	97.28% accuracy, 2.7% misclassifications in TensorFlow	Dataset of 4000 labeled statements TensorFlow LSTM

	Ibrahim Alzoubi, and Mehmet Yıldız					
Artificial intelligence, text generation tools and ChatGPT – does digital watermarking offer a solution?	Thomas Lancaster	2023	Theoretical	Awareness of risks of relying on watermarking	No experimental results	Conceptual analysis of watermarking limits and ethics
Exploring AI Generated Texts vs. Human Written Texts in EFL Academic Writing	<i>Mohammed AbdAlgane, Rabea Ali, Khalid Othman, Intisar Zakariya Ahmed Ibrahim, Mohamed Kamal Mustafa Alhaj, Ezzeldin M. T. Ali, and Faris Salim Allehyani</i>	2024	Case study	Relevant to local practical comparison	AI writing insights in the Saudi university	Experimental text collection and stylistic analysis
Artificial intelligence assisted academic	Adam Cheng,	2025	Study	Structured ethical framework	Policy suggestions	Reviewing policies and expert experiments

writing: recommendations for ethical use	Aaron Calhoun, and Gabriel Reedy					
University Students' Insights of Generative Artificial Intelligence (AI) Writing Tools	Al-Mothana M. Gasaymeh Mohammad A. Beirat, and Asma'a A. Abu Qbeita	2024	Survey	Gaps in ethical concerns	Students have limited knowledge of AI use	Survey of usage, attitudes, and motivations
Exploring the power of generative AI: enhancing business email writing skills for L2 learners	Latisha Asmaak Shafie, Aidura Aiyub, and Nurul Alia Nafis Najmi	2024	Experimental	Shows short-term gains in the result of email AI writing	Improved clarity, tone, and speed	learner feedback

References

- Kayabas, Ayla, Ahmet Ercan Topcu, Yehia Ibrahim Alzoubi, and Mehmet Yıldız (2025), *A Deep Learning Approach to Classify AI-Generated and Human-Written Texts*, <https://doi.org/10.3390/app15105541>
- Thomas Lancaster (2023), *Artificial intelligence, text generation tools and ChatGPT – does digital watermarking offer a solution?*, <https://edintegrity.biomedcentral.com/articles/10.1007/s40979-023-00131-6>
- Mohammed AbdAlgane, Rabea Ali, Khalid Othman, Intisar Zakariya Ahmed Ibrahim, Mohamed Kamal Mustafa Alhaj, Ezzeldin M. T. Ali, and Faris Salim Allehyani. (2024), *Exploring AI Generated Texts vs. Human Written Texts in EFL Academic Writing: A Case Study of Qassim University*, <https://www.sciedupress.com/journal/index.php/wjel/article/view/28097/17344>
- Adam Cheng, Aaron Calhoun, and Gabriel Reedy (2025), *Artificial intelligence assisted academic writing: recommendations for ethical use*, <https://advancesinsimulation.biomedcentral.com/articles/10.1186/s41077-025-00350-6>
- Al-Mothana M. Gasaymeh , Mohammad A. Beirat, and Asma'a A. Abu Qbeita. (2024). *University Students' Insights of Generative Artificial Intelligence Writing Tools*, <https://www.mdpi.com/2227-7102/14/10/1062>
- Latisha Asmaak Shafie, Aidura Aiyub, and Nurul Alia Nafis Najmi. (2024), *EXPLORING THE POWER OF GENERATIVE AI: ENHANCING BUSINESS EMAIL WRITING SKILLS FOR L2 LEARNERS*, https://www.researchgate.net/publication/382310869_EXPLORING_THE_POWER_OF_GENERATIVE_AI_ENHANCING_BUSINESS_EMAIL_WRITING_SKILLS_FOR_L2_LEARNERS