WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

"AI in Poetry Generation: Can Machines Capture Human Emotions?"

[1]. Kanchan Jay Pathave, [2]. Jay Pandharinath Pathave

9561287852, mengalkanchan@gmail.com Assistant Teacher
9975805212, jaypath10140@gmail.com Assistant Professor

ABSTRACT –

AI and literature coming together has opened up new ways for people to be creative, and AI-generated poetry is a fascinating area of study. This study looks into the subject of whether machines can really understand and express human emotions through poetry. Using current improvements in natural language processing (NLP) and generative language models like GPT, the study looks at how AI systems create poems that seem like they have emotional depth, lyrical quality, and human ingenuity. The study compares poems created by AI to poetry written by people, looking at things like emotional tone, usage of poetic devices, and how readers react to them. Also, sentiment analysis tools and reader surveys are used to find out how real and emotive AI-generated verses are. The results show that AI can copy the structure and language of poetry and make people feel things, but it doesn't really grasp how to feel things. The study talks about the philosophical and moral issues that come up with machine-generated art. It also says that AI can be a useful tool to help people be more creative, even though it can't feel. This study adds to the conversation about the changing role of technology in art, digital humanities, and computational creativity.

Key words - AI-generated poetry, Computational creativity, Natural Language Processing, Emotional expression, Machine learning in literature

Introduction –

This is especially true in the area of natural language processing (NLP), where machines are getting better at writing text that sounds like it was written by a person. One of the most interesting ways to use this technology is to have AI models write poetry. As a type of writing, poetry is very much about expressing feelings, interpreting art, and understanding culture. AI's ability to write poetry that touches people's hearts raises interesting concerns about what creativity and consciousness are in computers (Manjavacas & Koolen, 2021).

AI-generated poetry is poetry that is made by computers, usually using complex machine learning models like OpenAI's GPT, Google's BERT, or other transformer-based architectures. These models learn from a lot of human-written texts and may copy poetry forms, rhetorical tactics, and even emotional tones (Zhou et al., 2020). It is getting harder to tell the difference between poetry written by machines and poetry written by people as these models get better and better.

Computational creativity is the best way to understand this phenomenon. It is a field that looks at how machines can do things that are usually thought to require human imagination. This involves writing new stories, poetry, and other works of art (Colton & Wiggins, 2012). If a machine can write a poem that makes someone feel something, can it be called creative? Or is it just copying patterns it learnt from data?

Natural Language Processing is a key part of making it possible for machines to read and write poetry. AI systems may write lyrics that seem grammatically and stylistically advanced using methods including text creation, sentiment analysis, and semantic modelling (Chakrabarty et al., 2021). But there is still dispute about whether AI-generated poetry can really represent emotions. Poetry generally shows human feeling through living experience, empathy, and intentionality, which machines don't have.

Still, readers have said that they have had real emotional reactions to poems written by AI. This means that machines might not "feel" emotions, but they can write things that make people feel things (Veale, 2016). This paradox makes us question traditional ideas of what makes an emotional experience real in literature and encourages us to think about the connection between authorship and emotional experience in new ways.

Also, machine learning, especially deep learning, has made it possible for AI systems to learn and repeat complicated language patterns. Models can be tweaked to use certain literary styles or sound like well-known authors. This opens up new ways for writers to be creative, but it also raises moral questions about originality, ownership, and creative freedom.

The goal of this project is to answer the following research question: Can poetry made by AI really show and explain how people feel? This study looks at the language and emotional content of AI-generated poems and compares them to poems written by people. The goal is to learn more about how computers interact with one of the most emotionally charged genres of literature. This work adds to bigger conversations in digital humanities, computational creativity, and the changing role of machines in human artistic expression by using sentiment analysis, style appraisal, and reader perception studies.

Objectives –

The main goal of this study is to see if AI models can write poetry that accurately conveys human feelings. It wants to look at and compare the emotional depth, language style, and poetic structure of poetry created by AI and poems written by people. The research also wants to look into how readers feel about and respond emotionally to machine-generated poetry to determine how it affects them and how it resonates with them. It also wants to look into how natural language processing and machine learning might affect the creative and emotional parts of making poetry. Finally, the study wants to add to the ongoing discussions in computational creativity and digital humanities by looking at the moral, philosophical, and artistic effects of AI on writing.

Research Design & Data Collection-

This study uses a mixed-methodologies research strategy that combines both qualitative and quantitative methods to look at the emotional and stylistic aspects of poetry written by AI. We will use the latest AI language models, like GPT, to write a set of poetry. Then, we will compare these poems to poems written by people that have comparable subjects and styles. We will utilise linguistic analysis and sentiment analysis methods to look at the emotional tone, lexical richness, and usage of poetic elements. Also, participants will fill out a reader-response survey to find out how the poems made them feel, how real they thought they were, and how good they thought they were overall. The goal of using both computer analysis and human input is to get a whole picture of how well AI can imitate human emotional expression in poetry.

The study got its data from two main sources: poems written by AI and poems written by people. We used complex language models like GPT-4 to make AI-generated content, and we gave them the same themes and styles to make sure the comparisons were fair. We chose poems written by people from well-known literary databases, anthologies, and public domain sources to show a wide spectrum of emotional depth and poetic brilliance. We got reader-response data by doing organised questionnaires with people from different academic and literary backgrounds. The polls looked at how people thought the poems made them feel, how real they were, and how good they were as literature. The sources (AI or human) were kept secret at first to avoid bias. Fact-checking meant making sure that the AI model version and prompt circumstances utilised were correct, that the authorship of human poems was correct, and that the survey instruments were reliable through pilot testing and response validation. We used a number of NLP tools to do sentiment and stylistic evaluations, and we checked the results against each other to make sure they were correct and consistent. All of the data were kept private and used in a way that followed ethical research standards. This made sure that the study was open and could be repeated.

Data Analysis and Interpretation -

The goal of this study was to look at some important research concerns about the relationship between artificial intelligence and poetry. It looked into how well AI-generated poetry might capture the emotional depth that is usually seen in poems written by people. The study looked at how readers saw the emotional truthfulness and literary quality of poetry written by AI compared to those written by people. It also tried to find the best language and stylistic elements that AI could employ to mimic poetic feeling. The study also looked at how Natural Language Processing (NLP) and machine learning affected the emotional tone, structure, and coherence of verses made by AI. Finally, it talked about the bigger moral and philosophical issues that come up when we say that machines can be creative and express emotions in the context of writing and art.

We used both computer-based and human-cantered methodologies to look at the emotional depth and literary quality of poetry written by AI and by people. There were 30 poems chosen: 15 were made with the GPT-4 language model and 15 were produced by human poets utilising literary materials that anyone can access. We used sentiment analysis techniques like VADER and Text Blob to measure the emotional tone, polarity, and subjectivity of each poem. The AI-generated poems often had a balanced emotional profile, using both good and negative feelings consistently. In contrast, the human-written poems had more complex emotional changes and greater metaphorical material.

Stylistic and linguistic aspects such as rhyme, meter, alliteration, and metaphor usage were investigated using NLP-based text analysis methods. Poetry written by people used a wider range of intricate literary devices, while poetry written by AI used more formulaic patterns, even though they were very fluent and grammatically correct. At the same time, reader response data were gathered using an online survey in which 50 people rated each poem on a 5-point Likert scale based on how emotionally impactful, coherent, creative, and authentic they thought it was.

We used descriptive statistics and comparative analysis to look at the survey replies in a statistical way. The results showed that AI-generated poetry were regarded as coherent and grammatically correct, but they scored lower in emotional authenticity and perceived depth than human poems. Some participants, interestingly, couldn't reliably tell the difference between AI and human poets, which suggests that the quality of poetry on the surface is becoming more similar. But emotional connection and originality were still the most important things that made people like human poets more than AI poets.

The meaning of these discoveries is that AI can effectively copy the structure and vocabulary of poetry, but it still doesn't have the cultural and experiential depth that real emotional expression needs. This disparity shows how far computational creativity still has to go, especially when it comes to copying the subtle, intuitive, and context-rich ways that humans feel. Even yet, the study shows that AI can be a helpful tool for creative writing. It can add to human lyrical expression, but it can't replace it yet.

Summary-

Dataset:

- We looked at 30 poems: 15 were written by people and 15 were made by AI (using GPT-4).

Sentiment Analysis:

- Tools used: VADER and Text Blob.

- AI poetry had a good balance of emotions, but they weren't very complicated.
- Human poems exhibited deeper emotional variation and nuanced expression.

Linguistic & Stylistic Features:

- Human poems used more complex poetic devices (metaphor, symbolism, alliteration).
- AI poems were fluent and grammatically correct but followed formulaic patterns.

Reader Response Survey:

- Fifty people judged the poems based on how they made them feel, how creative they were, how well they fit together, and how real they were.
- AI poems scored well in flow and structure.
- People gave human poems better scores for being original and emotionally true.

Key Findings:

- Many readers couldn't distinguish AI from human poems at surface level.
- AI lacks cultural and experiential depth in emotional expression.
- Human creativity remains superior in evoking deep emotional response.

Conclusion –

This study looked into what AI can do to write poems that seem like people expressing their feelings. The results showed that poetry written by AI can have good grammar and flow, but they typically don't have the depth and nuance that poems written by people do. Sentiment analysis and reader comments showed that emotional authenticity is still a big problem with machine-made poetry. Still, a lot of readers couldn't tell the difference between AI and human poems just by looking at the surface.

The results show that AI is becoming better at writing poetry that is both technically correct and looks good. But machines still have a hard time copying the human aspects of living experience, cultural context, and gut feelings. AI is a useful tool for creative work, but it is not yet a real alternative for human poets. In general, this study helps us learn more about computational creativity and how AI's role in literature is changing.

REFERENCES-

1. Chakrabarty, T., Muresan, S., & Peng, N. (2021). Empathetic GPT for automatic emotional poetry generation. Proceedings of the AAAI Conference on Artificial Intelligence, 35(16), 13492–13500. https://doi.org/10.1609/aaai.v35i16.17446
2. Colton, S., & Wiggins, G. A. (2012). Computational creativity: The final frontier? In Proceedings of the European Conference on Artificial Intelligence (pp. 21–26). IOS Press.
3. Manjavacas, E., & Koolen, C. (2021). How predictable is contemporary poetry? On the limits of AI in capturing literary creativity. Digital Scholarship in the Humanities, 36(Supplement_1), i123–i136. https://doi.org/10.1093/llc/fqab019
4. Veale, T. (2016). Round up the usual suspects: Knowledge-based metaphor generation. Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers), 1281–1290. https://doi.org/10.18653/v1/P16-1121