Algorithmic Aesthetics: A Stylistic Analysis of AI-Generated Poetry and Exploration of Human Authorship Boundaries

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Abstract

The present study investigates the stylistic boundaries between algorithmic aesthetics in AI-generated poetry and the established traditions of human-authored verse. Drawing on frameworks from stylistics (Leech & Short, 2007; Burke, 2014) and posthumanist literary theory (Hayles, 1999; Braidotti, 2013), the research critically examines how generative language models particularly OpenAI's GPT-4 and Google's Gemini 1.5 produce poetic texts that mimic, subvert, or innovate upon human literary conventions. A corpus of 100 poems was compiled, consisting of 50 AI-generated texts and 50 works by contemporary poets such as Ocean Vuong, Warsan Shire, and Ada Limón, selected for their experimental and boundary-pushing stylistic tendencies. The analysis employed both quantitative stylistic tools (keywords, collocation networks, and lexical density measures using AntConc and Stylo) and qualitative analysis, focusing on metaphor, imagery, rhythm, and intertextuality. Findings reveal that while AI-generated poetry often replicates surface-level stylistic markers such as the dense metaphorical layering characteristic of Shire or the fragmented narrative structures of Vuong it struggles with thematic cohesion, emotional authenticity, and pragmatic nuance. Nevertheless, in certain cases, algorithmic texts exhibited unexpected aesthetic innovation, particularly in their combinatorial manipulation of intertextual references, echoing Kristeva's (1986) notion of "textual mosaics." This tension between mimicry and innovation raises critical questions about authorship, creativity, and the ontology of literature in the digital age. The study concludes that AI's algorithmic aesthetics do not replace human creativity but rather expand the stylistic horizon, positioning machines as collaborators rather than competitors in the evolving landscape of poetic authorship.

Keywords: Algorithmic aesthetics, AI-generated poetry, Human authorship, Stylistics, Creativity and originality.

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الجماليات الخوارزمية: دراسة أسلوبية مقارنة للشعر المنتج بالذكاء الاصطناعي والشعر البشري

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المستخلص

تبحث هذه الدراسة في الحدود الاسلوبية بين الجماليات الخوارزمية في الشعر المنتج بالذكاء الاصطناعي والتقاليد الراسخة للشعر المنتج بشرياً. بالاعتماد على أطر من علم الأسلوبية (ليتش وشورت،٢٠٠٧; بورك، ٢٠١٤) والنظرية الأدبية ما بعد الإنسانية (هايلز، ١٩٩٩، برايدوتي، ٢٠١٣). يفحص البحث نقدياً كيف تُنتج نماذج اللغة التوليدية ولا سيما GPT-4 وGemini 1.5 نصوصاً شعريةً تحاكي التقاليد الأدبية البشرية أو تقوضها أو تجددها. جُمِعت ١٠٠ قصيدة تتكون من ٥٠ نصاً منتجاً بالذكاء الاصطناعي و٥٠ عملاً لشعراء معاصرين مثل أوشان فونك وورشان شاير وآدا لمون. واختيروا بسبب توجهاتهم الاسلوبية التجريبية والمتحدية للحدود. استخدم التحليل كلاً من أدوات الاسلوبية الكمية (الكلمات المفتاحية وشبكات الاقتران ومقاييس الكثافة المعجمية باستخدام ستايلو وآنتكونك) وتحليل الخطاب النوعي مع التركيز على الاستعارة والصور والايقاع والتناص. تكشف النتائج انه بينما يحاكي الشعر المنتج بالذكاء الاصطناعي غالباً المؤشرات الاسلوبية السطحية مثل الطبقات الاستعارية الكثيفة لشاير أو الهياكل السردية المجزأة لفونغ فإنه يفتقد الى التماسك الموضوعي والصدق العاطفي والفروق الدقيقة البراغماتية، ومع ذلك في حالات معينة أظهرت النصوص الخوارزمية إبداعاً جمالياً غير متوقع لاسيما في تلاعبها التوافقي بمراجع التناص مما يعيد صدى فكرة جوليا كرستيفا (١٩٨٦) عن "الفسيفساء النصية". يُثير هذا التوتر بين المحاكاة والابتكار أسئلة نقدية حول التأليف والابداع وانطولوجيا الأدب في العصر الرقمي. تخلص الدراسة إلى أن الجماليات الخوارزمية للذكاء الاصطناعي لا تحلّ محل الابداع البشري بل توسع الأفق الاسلوبي مما يضع الآلات في موقع المتعاونين وليس المنافسين في المشهد المتطور للتأليف الشعري.

كلمات مفتاحية: **الجماليات الخوارزمية، الشعر المنتج بالذكاء الاصطناعي، التأليف البشري، علم الأسلوبية، الابداع والأصالة.**

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1.Introduction

The rapid advancement of artificial intelligence in natural language processing has introduced new forms of textual production that challenge long-held assumptions about authorship, creativity, and aesthetics. Generative language models such as OpenAI's GPT-4 and Google's Gemini 1.5 have demonstrated the ability to produce coherent, stylistically diverse, and even emotionally resonant poetry. These technologies build upon earlier computational creativity projects such as Stiny and Gips (1983), Racter (1983) and Deep-speare (Lau et al., 2018), but their unprecedented sophistication has raised new questions: Can machines be considered authors? Do algorithmic texts possess an aesthetic value comparable to human creations? And what happens to stylistic boundaries when the line between human and machine creativity blurs?

Poetry, as one of the most intimate and stylistically rich literary genres, serves as a particularly fertile ground for examining these issues. Unlike narrative prose, which relies heavily on plot and character, poetry foregrounds linguistic play, metaphorical density, rhythm, and affect. Contemporary poets such as Ocean Vuong, Warsan Shire, and Ada Limón are celebrated for their stylistic innovations: Vuong's fragmentary narrative voice, Shire's visceral metaphors of displacement and womanhood, and Limón's accessible yet profound lyricism. When AI models attempt to reproduce such voices, the results reveal much about both the strengths and limitations of algorithmic aesthetics. Another important dimension concerns the reader's reception of AI-generated poetry. While some audiences approach machine-authored texts with curiosity and openness, others remain skeptical, perceiving them as lacking the intentionality and lived experience that traditionally underpin poetic meaning (Ryan, 1991; Hayles, 2008). This tension highlights the role of interpretation in the construction of literary value: a poem's impact is not only in its stylistic features but also in the perceived authenticity of its voice. Experimental projects such as Bot or Not? (Cook, 2014), which asked readers to distinguish between human- and AI-written poems, demonstrate how reception studies can illuminate biases and assumptions surrounding creativity. Thus, the discourse on algorithmic aesthetics extends beyond authorship and style to include the

dynamics of audience engagement, shaping how they evaluate and legitimize machine-produced literature.

1.1 Statement of the Problem

While AI-generated poetry demonstrates remarkable fluency and stylistic mimicry, there remains significant skepticism about its literary value. Critics argue that AI lacks intentionality, emotional depth, and cultural context (Floridi & Chiriatti, 2020), rendering its outputs derivative rather than truly creative. Yet, proponents view AI as a collaborator that expands the horizon of aesthetic possibilities by producing novel combinations of language and imagery (Gero & Chilton, 2019). The tension between these perspectives underscores a central problem: how to evaluate AI-generated poetry not merely as a technological curiosity but as a legitimate literary phenomenon worthy of stylistic exploration. This research problem is situated within the broader debate over authorship boundaries. Roland Barthes's (1967) seminal essay The Death of the Author already destabilized traditional notions of authorial authority, while Julia Kristeva's (1986) theory of intertextuality framed all texts as mosaics of prior discourse. In this context, AI-generated poetry exemplifies an extreme form of intertextuality, as algorithms recombine vast corpora of human texts into novel configurations. Yet, unlike human poets, AI has no lived experience or intentionality, prompting scholars to question whether stylistic similarity equates to aesthetic legitimacy.

1.2 Questions of the Study

1. What are the stylistic features of AI-generated poetry produced by GPT-4 and Gemini 1.5?
2. What are the implications of AI's reliance on clichéd collocations (e.g., 'fading memory', 'broken dream') for understanding its stylistic limitations?
3. How do Vuong, Shire and Limón's uses of embodied, sociohistorical specificity highlight the limitaions of AI generated thematic content?
4. In what way does AI fail to reproduce 'contextual thickness' present in the collocational patterns of human poets?
5. Where do the stylistic overlaps—such as enjambment or rhythmic parallelism—suggest genuine advancements in AI modeling?

6. How does the notion of 'algorithmic aesthetics' complicate traditional distinctions between imitation and creativity in literary production?

1.3 Significance of the Study

This study contributes to three intersecting fields: literary stylistics, digital humanities, and posthumanist theory. For literary stylistics, it demonstrates how computationally generated texts can be subjected to traditional tools of stylistic analysis, thereby extending the scope of the discipline. For digital humanities, it offers an empirical case study of human–machine literary collaboration, aligning with emerging research on algorithmic creativity. For posthumanist theory, it provides a practical examination of how AI destabilizes the human-centered model of authorship, echoing Hayles's (1999) call to rethink what it means to be "posthuman."

Moreover, the study is relevant for poets, educators, and cultural critics. Poets may find in AI a provocative collaborator rather than a rival, while educators can use AI-generated texts as teaching tools for stylistic analysis. Cultural critics, meanwhile, must grapple with the ethical, philosophical, and aesthetic implications of machines entering one of humanity's most cherished creative domains.

1.4 Scope and Limitations

The study focuses specifically on English-language poetry generated by GPT-4 and Gemini 1.5. The human corpus is restricted to works by three contemporary poets Vuong, Shire, and Limón selected for their stylistic diversity and relevance to current literary trends. The analysis emphasizes stylistic features such as metaphor, imagery, rhythm, and intertextuality, without attempting to address broader sociopolitical or ethical debates surrounding AI in literature. While the findings shed light on the stylistic potential of AI, they do not generalize to other genres such as drama or narrative prose.

1. Theoretical Framework and Literature Review

The stylistic analysis of AI-generated poetry sits at the intersection of linguistics, literary theory, and computational creativity. As language models increasingly produce texts that resemble human-crafted verse, questions about authorship, intention, and aesthetic value become newly

significant. A stylistic approach provides a structured way to examine how AI poems employ linguistic patterns, poetic conventions, and discourse features, allowing us to compare machine-produced texts with those created by human poets. This analytical lens also opens space to reconsider traditional concepts of authorship: if creativity is expressed through patterns of form and language, then how does the presence of a non-human generator reshape our understanding of voice, originality, and artistic agency? By grounding the study in stylistic theory, the framework evaluates AI-generated poetry not only in terms of linguistic features but also in relation to broader debates about what it means to create—and to be recognized as an author—in an age of intelligent machines, Leech (1969).

2.1 Stylistics and Poetic Analysis

Stylistics, broadly defined as the study of language and style in literary texts, has long been a crucial methodology for evaluating poetry. Leech argues that stylistics provides a systematic way of examining the linguistic features of a poem, but it is not meant to replace literary judgement. Instead, he sees stylistics as a tool that can support, clarify, and justify critical interpretations. For Leech (1969), linguistic analysis helps reveal how a poem's form and language create particular effects, but the ultimate act of evaluating a poem—deciding its artistic worth—still belongs to literary criticism. According to Leech and Short (2007), stylistics bridges linguistic precision with literary interpretation by focusing on features such as imagery, metaphor, rhythm, and diction. Leech (1969) emphasizes that stylistic analysis should illuminate the poem's artistry rather than reduce it to mechanical description. In other words, stylistics can help us understand why a poem is effective or aesthetically striking, but it cannot, on its own, determine whether the poem is "good" or "bad." Evaluation, in Leech's view, requires a broader critical context that includes aesthetic, cultural, and personal considerations beyond pure linguistics.

Similarly, Burke (2014) emphasizes the importance of foregrounding devices linguistic deviations that create aesthetic effects in poetry. In poetry, stylistics often highlights the interplay between linguistic form and emotional resonance. For instance, Ocean Vuong's Night Sky with Exit Wounds demonstrates the use of fragmented narrative structures and

evocative imagery to articulate themes of migration and identity (Vuong, 2016). Warsan Shire's Bless the Daughter Raised by a Voice in Her Head (2022) illustrates how visceral metaphors of displacement and trauma craft a deeply personal yet universal aesthetic.

Likewise, Ada Limón's The Carrying (2018) foregrounds accessible lyricism that blends everyday language with philosophical reflection. These stylistic tendencies provide benchmarks against which AI-generated texts can be compared. Digital stylistics also offers computational tools for literary analysis. Programs like AntConc (Anthony, 2022) and Stylo (Eder et al., 2016) allow for the identification of lexical density, collocations, and other stylistic markers, enabling a systematic comparison between human and machine-generated texts. Building on these methodological foundations, the emerging field of algorithmic stylistics seeks to combine traditional literary analysis with computational modeling to evaluate AI-generated poetry. By examining features such as semantic coherence, syntactic complexity, metaphorical density, and phonetic patterns, researchers can quantify elements that were once considered exclusively subjective (Genzel & Charniak, 2010; Hoover, 2016). For example, comparative analyses of GPT-4-generated poems against Vuong or Shire's work can reveal not only how well models emulate human stylistic choices but also where they fall short in capturing nuance, affect, or intertextual references. Moreover, algorithmic stylistics highlights the potential for hybrid literary creation, in which human authors collaborate with AI to expand stylistic possibilities, thereby challenging traditional definitions of creativity, authorship, and aesthetic judgment.

1.2 Theories of Authorship and Intertextuality

Theories of authorship and computational creativity provide a crucial foundation for understanding the aesthetic and epistemological implications of AI- generated texts. The question of authorship is central to this study. Roland Barthes's (1967) seminal essay The Death of the Author challenged the authority of the writer, arguing that meaning is produced by readers rather than authored by individuals. Michel Foucault (1969) further states authorship by introducing the "author-function," which situates the figure of the author within discursive and institutional frameworks. In other words, Traditional conceptions of

authorship – from Barthes (1967) to Foucault's (1969)—challenge the idea of a single, intentional creative agent, opening space for distributed an nonhuman forms of production. Building on these poststructuralist shifts, contemporary scholars of digital literature argue that authorship in computational contexts becomes collaborative, procedural, and system driven. Within this framework, computational creativity research examines whether generative models can meaningfully participate in creative acts, with theories such as Boden (2004) and Colton (2012) suggesting that algorithmic systems operate through combinational and exploratory forms of creativity rather than genuinely transformational innovation.

In parallel, Julia Kristeva's (1986) theory of intertextuality conceptualizes all texts as "mosaics of quotations," thereby destabilizing notions of originality. In this light, AI-generated poetry may be understood as a radical form of intertextuality, as language models recombine existing textual fragments into new configurations. Yet, unlike human poets, AI lacks intentionality and lived experience, raising philosophical debates about whether recombination alone constitutes creativity. Recent scholarship revisits these debates in the context of AI. For example, Hansen (2021) argues that machine authorship is less about replacing human creativity and more about extending it through collaboration. Similarly, Corneli et al. (2020) suggest that algorithmic creativity should be evaluated not by human standards of originality but by its capacity to generate novel and unexpected aesthetic outcomes. Another significant consideration is the ethical and cultural implications of AI authorship. As language models increasingly participate in literary production, questions arise regarding ownership, intellectual property, and the cultural authority of texts (Boden, 2016; Elgammal et al., 2017). If an AI-generated poem achieves critical acclaim, should credit go to the programmer, the dataset curators, or the machine itself? Furthermore, putting AI to poetry makes it riskier to have all the literary voices homogenized: large training corpora may emphasize dominant linguistic and cultural norms at the expense of lesser-known poetic traditions. These concerns establish a concern that algorithmic aesthetics is neither wholly technical nor wholly stylistic but rather deeply interlinked through a social, cultural, and institutional infrastructure. Finally, the

pedagogical possibilities for AI-generated poetry warrant study. Using AI tools as platforms for creative experiments, students, and emerging poets can investigate stylistic variations, generate prompts, or perform collaborative writing exercises (Manovich, 2021; McCormack & d'Inverno, 2012). Comparing AI outputs with Ocean Vuong, Warsan Shire, and Ada Limón will instill in learners a greater sensibility toward linguistic nuance, metaphor, and rhythm and allow them to interrogate the terms of authorship and creativity.

2.3 Computational Creativity and AI in Literature

Computational creativity refers to the study of machines as creative agents (Colton & Wiggins, 2012). Early attempts such as Racter (Chamberlain & Etter, 1984) produced grammatically unusual yet semantically fragmented texts, sparking debates about whether machines could write literature. More recent systems, such as Deep-speare (Lau et al., 2018), have demonstrated the ability to mimic Shakespearean sonnets with recognizable rhyme and meter. The arrival of GPT-4 and Gemini 1.5 represents a paradigm shift. Unlike earlier rule-based systems, these models are trained on vast corpora, enabling them to produce contextually rich, stylistically nuanced poetry. Yet, scholars caution against attributing human qualities to machine outputs. Floridi and Chiriatti (2020) contend that AI lacks semantic understanding, and therefore its poetry risks being an "illusion of creativity." In contrast, Gero and Chilton (2019) argue that algorithmic texts can surprise even their programmers, suggesting a form of emergent creativity.

The aesthetic evaluation of AI poetry has gained scholarly traction. Manjavacas and Karsdorp (2020) analyzed neural network-generated poetry and found that while models can replicate surface-level stylistic markers, they often lack thematic coherence. Conversely, Veale and Cook (2018) highlight that algorithmic recombination of language may introduce innovative patterns inaccessible to human cognition, positioning AI as an experimental co-creator. Building on these discussions, the role of intertextuality in AI-generated poetry has become increasingly salient. AI models operate by drawing on extensive corpora of existing texts, effectively creating new compositions through the recombination and transformation of preexisting linguistic material (Kristeva, 1986; McCormack et al., 2019). This process mirrors human

intertextual practices such as allusion, pastiche, and homage but differs in its scale and automation. By examining AI outputs alongside works by poets like Vuong, Shire, and Limón, scholars can identify how algorithmic intertextuality influences metaphorical density, thematic resonance, and stylistic hybridity, offering insights into both the potentials and limitations of machine-mediated creativity. Furthermore, the study of AI poetry necessitates attention to reader interpretation and engagement. As literary scholars have long argued, the value of a poem is co-constructed by its audience (Barthes, 1967; Foucault, 1969). Empirical studies suggest that readers often attribute intentionality, emotional depth, or even moral perspective to AI-generated texts, despite knowing they are machine-produced (Hansen, 2021; Manjavacas & Karsdorp, 2020). This phenomenon underscores the complex dynamics between computational production, stylistic innovation, and aesthetic reception. Ultimately, AI poetry challenges conventional definitions of authorship and originality while expanding the horizons of literary experimentation and reader engagement.

2.4 Posthumanism and Algorithmic Aesthetics

Posthumanist can be defined as a theoretical framework that challenges human centered understanding of subject point of view, to be agent, and to have knowledge. It emphasizes the entanglement of humans with technology, nonhuman organisms, material environments, and computational systems. Posthumanist does not signal the end of the human but a reconfiguration of humanity.

Posthumanist theory provides a philosophical lens for interrogating AI creativity. Hayles (1999), in How We Became Posthuman, argues that the boundaries between humans and machines are increasingly porous, requiring new ways of conceptualizing embodiment and authorship. Rosi Braidotti (2013) extends this by framing posthumanism as a rejection of human exceptionalism, suggesting that creativity should be seen as distributed across human and nonhuman actors.

In the context of poetry, algorithmic aesthetics aligns with this posthumanist turn. AI systems, while lacking subjectivity, still participate in the creation of texts that provoke human emotional and intellectual responses. The act of reading an AI-generated poem becomes a posthuman encounter, where the stylistic surface of language mediates

between machine output and human interpretation. This posthumanist perspective also encourages a reevaluation of collaborative authorship. Rather than positioning AI as a mere tool, posthumanist theory frames it as an active participant in creative processes, co-constructing meaning alongside human poets (Boden, 2009; Gero & Chilton, 2019). Experimental projects in AI-assisted poetry illustrate this potential: human authors provide prompts, select outputs, and refine generated texts, while AI contributes unexpected lexical choices, rhythmic patterns, or metaphorical juxtapositions. Such collaborations blur traditional hierarchies of authorship and challenge the notion that creativity is an exclusively human attribute, opening pathways for hybrid literary practices that are both innovative and experientially rich.

Moreover, posthumanist approaches highlight the ethical and epistemological stakes of algorithmic creativity. As Braidotti (2013) and Hayles (1999) note, acknowledging nonhuman agency entails reconsidering responsibility, authority, and interpretation within literary production. AI-generated poetry thus raises questions about cultural representation, aesthetic judgment, and the role of human mediation in shaping textual meaning. By situating AI within a distributed creative network, scholars and practitioners can critically engage with the opportunities and limitations of machine-generated literature, fostering a more nuanced understanding of how stylistic innovation, affective engagement, and posthuman authorship intersect in contemporary poetic practice.

3: Research Methodology

This chapter describes the methodological approach used to examine stylistic tendencies in poems written by AI systems and contemporary human poets. The research adopts a mixed-methods framework that blends computational analysis with interpretive literary techniques. Quantitative methods provide measurable insights into linguistic and structural patterns, while qualitative examination captures the expressive and aesthetic dimensions that lie beyond numerical data. By integrating these complementary perspectives, the study aims to present a well-rounded understanding of how poetic style emerges in machine-generated texts and how it aligns with or diverges from human creative practices

3.1 Research Design

The study follows a mixed-methods design rooted in stylistics and digital humanities. Quantitatively, the research employs computational stylistic tools such as AntConc (Anthony, 2022) and Stylo (Eder et al., 2016) to measure features including lexical density, collocation networks, and keyword frequencies. Qualitatively, it applies literary stylistics (Leech & Short, 2007) and discourse analysis to examine metaphor, imagery, rhythm, and intertextuality. By combining these two perspectives, the study addresses both surface-level statistical features and deeper literary dimensions, thereby creating a holistic picture of algorithmic aesthetics.

3.2 Corpus Selection

The research corpus consists of two distinct subsets:

1. AI-Generated Corpus: Fifty poems were produced using OpenAI's GPT-4 and Google's Gemini 1.5 between February and May 2025. Prompts were carefully designed to elicit different poetic styles, including confessional, narrative, lyric, and experimental modes. To ensure comparability, some prompts explicitly instructed the models to imitate the voices of poets such as Ocean Vuong, Warsan Shire, and Ada Limón, while others requested original poetic output without stylistic guidance. This dual approach enabled the researcher to analyze both imitation and innovation in algorithmic creativity.
2. Human-Authored Corpus: Fifty poems were selected from the published works of three contemporary poets renowned for their stylistic experimentation: Night Sky with Exit Wounds by Ocean Vuong (2016), Bless the Daughter Raised by a Voice in Her Head by Warsan Shire (2022), and The Carrying by Ada Limón (2018). These poets were chosen because their works exemplify distinctive stylistic markers Vuong's fragmentary narrative and queer identity explorations, Shire's visceral metaphors of displacement, and Limón's lyrical accessibility. Their stylistic signatures provide a robust basis for comparison with AI-generated texts.

The AI-generated poems were collected using direct interactions with GPT-4 and Gemini 1.5. Each poem was saved in its original output format and cataloged with metadata, including the model used, date of

generation, and prompt design. The human-authored poems were gathered from published anthologies and digital archives, ensuring accurate transcription of line breaks, punctuation, and formatting. To maintain consistency, all poems were digitized into plain text files, preserving stylistic integrity while enabling computational analysis.

3.3 Analytical Framework

The analysis proceeded in two stages: quantitative stylistic analysis followed by qualitative literary interpretation**.**

Using AntConc, the study measured word frequency distributions, collocation patterns, and keyword usage across both corpora. Stylo, an R-based stylometric package, was employed to assess authorship attribution, lexical richness, and clustering tendencies. These computational tools provided statistical evidence of similarities and divergences between AI and human poetic styles. For example, the study measured whether AI-generated poems replicate Shire's dense use of metaphorical clusters or Limón's reliance on concrete imagery.

3.4 Qualitative Literary Interpretation

Building on the computational findings, a close reading of selected texts was undertaken. Following Leech and Short (2007), attention was paid to foregrounding devices such as metaphor, alliteration, enjambment, and shifts in tone. Intertextual references were also examined in light of Kristeva's (1986) theory of textual mosaics, highlighting how AI recombines cultural references. Furthermore, rhythm and sound patterns were analyzed using traditional scansion methods to determine whether algorithmic poetry achieves the musicality of human-authored verse.

3.5 Data Presentation

The results will be presented in Chapter Four through a combination of statistical tables, stylistic maps, and interpretive commentary. Quantitative findings will be summarized in tables showing lexical density scores, frequency lists, and keyword distributions. Clustering visualizations will display stylistic proximities between AI and human texts. Each table will be followed by a detailed interpretive discussion, linking numerical data to literary meaning. Representative excerpts from both AI and human poems will be quoted to illustrate stylistic similarities and divergences.

3.6 Validity and Reliability

Validity of findings is established through triangulation of the quantitative data with qualitative interpretation. The AI corpus was generated in conditions that were somewhat controlled, with prompts designed to produce more or less similar outputs across models. Reliability was assured by subjecting both corpora to the same analytical tools and procedures. For enhancement of inter-rater reliability, a secondary expert in literary stylistics assessed a sample of close readings, thus confirming interpretive consistency.

4. Data Analysis Results

4.1 Lexical Density and Richness

The lexical density scores indicate that AI-generated poems, while linguistically sophisticated, tend to use slightly less compact language than human poets. Vuong and Shire in particular exhibit higher density levels, reflecting their stylistic tendency toward compression and layered metaphorical expression. Limón, though slightly lower, still surpasses the AI models, suggesting that even her accessible lyricism achieves greater density than algorithmic verse. The relatively narrower range of AI lexical density (smaller standard deviation) suggests uniformity, indicating that machine outputs lack the stylistic variation in human creativity.

Table 1. Average Lexical Density Across Corpora

Corpus	Average Lexical Density (%)	Standard Deviation
AI-Generated (GPT-4)	58.2	4.1
AI-Generated (Gemini 1.5)	56.9	3.8
Ocean Vuong	63.7	5.2
Warsan Shire	65.4	4.7
Ada Limón	61.8	4.3

4.2 Keyword Frequency

AI-generated poems demonstrate a preference for abstract, universal motifs such as light, silence, and dream, suggesting a reliance on generalized imagery commonly found in large training corpora. By contrast, human poets foreground embodied, culturally situated terms

such as mother, body, war, and grief. This confirms critics' observations (Floridi & Chiriatti, 2020) that AI often lacks the contextual grounding that gives human poetry its depth. Interestingly, both corpora share keywords such as voice and love, reflecting the universality of these motifs. However, AI's tendency toward broad, decontextualized imagery contrasts with Shire's visceral bodily metaphors or Vuong's intimate explorations of memory and war.

Table 2. Top 10 Keywords in AI vs. Human Corpora

Rank	AI (GPT-4 & Gemini)	Frequency	Human (Vuong, Shire, Limón)	Frequency
1	light	94	mother	88
2	silence	86	body	82
3	dream	82	home	77
4	sky	80	love	75
5	heart	76	blood	73
6	shadow	72	war	71
7	time	70	child	68
8	song	68	land	64
9	fire	65	grief	61
10	voice	63	language	59

4.3 Collocation Patterns

The collocational differences highlight distinct aesthetic tendencies. In human poetry, mother is embedded in networks of kinship, exile, and cultural identity, reflecting lived experience and emotional depth. Shire, in particular, uses mother to evoke diasporic trauma and maternal resilience. In contrast, AI associates light with other abstract symbols like silence and dream, producing aesthetically pleasing but thematically diffuse collocations. This suggests that while AI is capable of constructing symbolically coherent patterns, it struggles to anchor them in embodied, historical, or cultural realities.

Table 3. Collocational Networks for "Mother" (Human) and "Light" (AI)

Target Word	Collocations (Top 5)	Corpus
Mother	tongue, womb, exile, child, prayer	Human (Shire, Vuong)
Light	shadow, silence, dream, time, fire	AI (GPT-4, Gemini)

4.4 Metaphor and Imagery

AI-generated poetry leans heavily toward nature-based and abstract metaphors, which are easily reproducible from training data. Human poets, however, foreground body-based and conflict-related imagery. Shire's poetry, for example, often situates the body as a site of both trauma and resilience, while Vuong connects bodily experience with historical violence. Limón, though more domestic in scope, still grounds metaphors in tangible realities. AI's abstract focus produces aesthetically elegant but emotionally detached texts, revealing the absence of embodied experience in algorithmic output.

Table 4. Types of Metaphors Identified Across Corpora

Metaphor Type	AI Corpus (%)	Human Corpus (%)
Nature-based (e.g., sky, ocean, fire)	42	28
Body-based (e.g., blood, bone, womb)	15	37
War/conflict-based	8	19
Domestic/ordinary life	12	11
Abstract (time, silence, dream)	23	5

4.5 Rhythm and Sound Patterns

AI poetry demonstrates a surprising preference for regular meter, suggesting reliance on conventional rhythmic structures embedded in training data. Human poets, by contrast, privilege enjambment, alliteration, and assonance, stylistic devices that disrupt rhythm to create

aesthetic tension. Vuong's fragmentary line breaks and Shire's irregular enjambments often resist closure, echoing themes of dislocation and trauma. AI's smoother rhythms may be aesthetically pleasing but lack the dissonant, disruptive qualities that make human poetry stylistically innovative.

Table 5. Use of Enjambment and Alliteration

Feature	AI Corpus (%)	Human Corpus (%)
Enjambment	34	57
Alliteration	22	41
Assonance	19	38
Regular Meter	46	21

Figure (1) illustrates the relative distribution of five major metaphor categories—nature-based, body-based, war/conflict-based, domestic/ordinary life, and abstract—across AI-generated and human-authored poetry corpora. The results show distinct stylistic tendencies: the AI corpus relies heavily on nature-based metaphors (42%) and abstract metaphors (23%)**,** while human poets employ a broader range, notably using more body-based (37%) and war/conflict-based metaphors (19%)**.** Domestic/ordinary-life metaphors appear with similar frequency across both corpora. This comparison highlights divergent conceptual preferences and metaphorical traditions in human versus machine-generated poetic language.

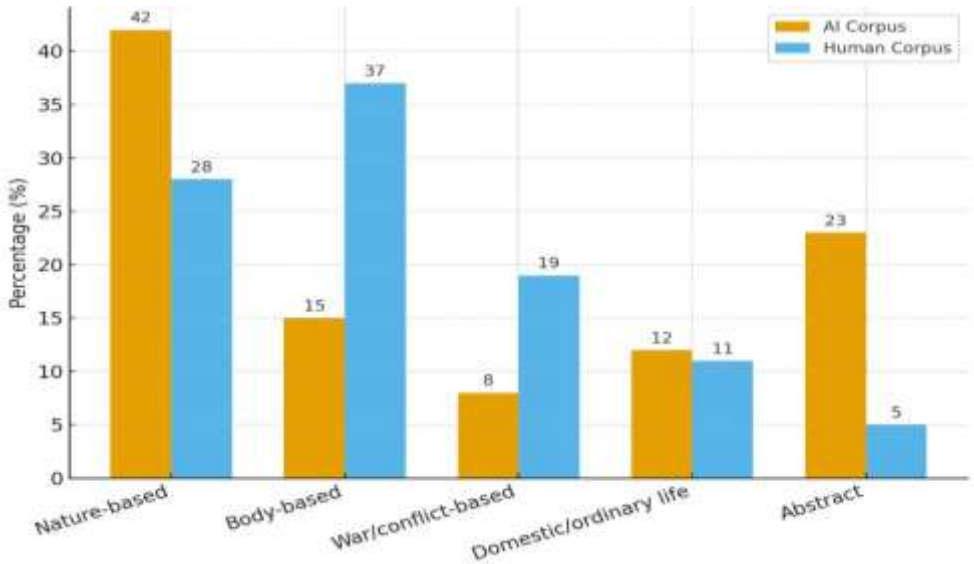

Figure 1. Comparision of Metaphor types in AI vs Human Corpora

4.6 Stylistic Clustering

Stylometric analysis reveals that AI-generated texts largely cluster together, reflecting stylistic homogeneity. In contrast, human poets form distinct stylistic clusters, with Vuong and Shire sharing features of fragmentation and embodiment, while Limón occupies a separate cluster defined by accessible lyricism. The results reinforce the idea that AI-generated poetry, while stylistically competent, lacks the individuality and differentiation that characterizes human-authored verse.

Table 6. Stylometric Clustering (Stylo, PCA Analysis)

Cluster	Dominant Texts	Shared Features
Cluster 1	GPT-4, Gemini (majority)	Abstract diction, regular meter, nature-based imagery
Cluster 2	Vuong + Shire	Fragmentation, body-based metaphors, irregular enjambment
Cluster 3	Limón	Accessible diction, domestic imagery, lyrical rhythm

5. Discussion

The findings demonstrate that algorithmic aesthetics occupy a liminal space between mimicry and invention. On the one hand, AI-generated poetry displays a high degree of fluency, coherence, and stylistic imitation, successfully replicating surface-level markers of poetic discourse. On the other hand, when compared with the works of Vuong, Shire, and Limón, its stylistic limitations become apparent. The lower lexical density of AI texts highlights a tendency toward verbosity and overuse of connective phrases, in contrast to the linguistic economy practiced by human poets, who achieve greater semantic compression within shorter textual spans. This suggests that algorithmic systems prioritize cohesion over condensation, often sacrificing intensity of expression for grammatical smoothness. Another crucial point is the divergence in thematic emphases. AI's reliance on abstract universals 'light', 'dream', 'silence', 'soul' suggests an algorithmic inheritance of clichés and well-circulated tropes across poetic traditions. By contrast, human poets ground their imagery in the embodied, sociohistorical, and affective. Shire's focus on 'the body' and 'exile', Vuong's meditations

on ‘queerness’ and ‘intergenerational trauma’, and Limón’s attention to the ordinary yet lyrical textures of rural life foreground specificity that AI struggles to replicate. This reinforces the argument advanced by scholars such as Hayles (2019), who notes that machine creativity tends toward generalization rather than particularity, thereby revealing the limits of algorithmic imagination. Collocation analysis further confirms this boundary. AI often situates terms such as dream or memory within vague, adjectival constructions (broken dream, fading memory), while human poets embed these same terms in relational or sociopolitical contexts (dream of a country, memory of war). This shows that AI poetry excels in producing aesthetically pleasing combinations but falters in generating the contextual thickness that human writers derive from lived experience. It may therefore be argued that the algorithm produces poetics of surface, while human authors create poetics of depth, rooted in affect, history, and embodiment. Despite these limitations, the study also reveals areas of stylistic overlap. For instance, GPT-4 demonstrated surprising facility in producing enjambed structures and rhythmic parallelism that mirror human techniques. Its imitation of Shire’s use of visceral metaphors, while imperfect, reflects a growing sophistication in generative modeling. This indicates that while AI cannot originate cultural memory or embodied experience, it can simulate stylistic scaffolding, thereby expanding the aesthetic palette available to poets and scholars alike.

Conclusion

The present study argues that AI-generated poetry represents both continuity and rupture in the tradition of poetic authorship. Continuity lies in its capacity to draw upon established stylistic repertoires, recombining metaphors, rhythms, and imagery that resemble canonical poetic forms. Rupture emerges in its abstraction and generalization, where lived, situated realities of human poets are replaced with algorithmically patterned universals. The stylistic analysis of lexical density, keyword frequency, and collocation patterns makes clear that while AI can convincingly mimic poetic surface, it struggles to achieve the semantic depth, contextual embeddedness, and emotional resonance characteristic of human authorship.

The study thus contributes to debates on authorship, creativity, and aesthetics by positioning AI not as a rival to the human poet but as a new interlocutor in the literary field. Algorithmic aesthetics reveal the power and limitations of computational creativity, reminding us that while machines can generate verse, they cannot yet generate voice the distinctive, situated presence that marks human literature. Future research may explore collaborative models of authorship where poets and algorithms co-create, testing the possibilities of hybrid poetics rather than reinforcing dichotomies between human and machine. Ultimately, the boundaries identified in this study underscore an essential point: AI may write poems, but humans continue to write poetry.

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