Computational Analysis and Literary Studies in the Era of AI: An Introduction

Yang Gexin
School of International Studies, Zhejiang University
Yuhangtang Rd. 668, Xihu District, Hangzhou, 310058, China
Email: ygx80080@163.com

Abstract In the era of artificial intelligence (AI), literary studies confronts profound challenges and opportunities as computational methodologies reshape both analytical practices and theoretical frameworks. This thematic column, titled "Computational Analysis and Literary Studies in the Era of AI," examines the dynamic interplay between traditional humanistic inquiry and AI-driven techniques, including machine learning, natural language processing, and text mining. The articles explore diverse themes: AI's impact on literary analysis, the revitalization of classical literature through digital platforms, speculative fiction's interrogation of the human-machine interface, and AI-driven literary tourism initiatives. Drawing on multidisciplinary perspectives, contributors grapple with the epistemological, ethical, and practical implications of integrating AI into literary scholarship. While AI offers novel pathways, such as "distant reading" for expanded discovery, it also raises questions about the erosion of interpretative depth and cultural authenticity. By fostering dialogue between computational methodologies and traditional hermeneutics, this column argues for a balanced approach to literary inquiry, one that harnesses technological innovations while safeguarding the core values of the humanities.

Keywords Artificial Intelligence (AI); Literary Studies; Digital Humanities (DH); Computational Analysis[1]

Author **Yang Gexin**, Ph.D. is Professor of English in the School of International Studies at Zhejiang University (Hangzhou 310002, Chian). His research interests include ethical literary criticism and British and American romantic literature.

1 This work is sponsored by the project of the National Social Science Fund of China, "The Compilation, Translation and Research of Literatures on Contemporary Western Ethical Criticism" (Project No. 19ZDA292).

In today's interconnected, hyper-digitalized world, advancements in artificial intelligence (AI) technologies have profoundly altered almost every aspect of human activity—from communication patterns and working lifestyles to political systems and educational paradigms. Among the diverse landscapes evolving rapidly, the field of humanities, especially literary studies, encounters an unprecedented transformation. The intersection between traditional humanistic inquiry and cutting-edge AI technologies compels scholars to redefine both the methods and theoretical foundations of literary studies. It illuminates new pathways to understand literature, culture, and the very essence of human creativity itself.

This special thematic column, titled "Computational Analysis and Literary Studies in the Era of AI," aims to explore the dynamic and sometimes contentious dialogue between digital technologies and literary scholarship. It seeks to examine how the infusion of AI-driven methodologies—such as machine learning, deep learning algorithms, natural language processing, and text mining—into the field of literary studies facilitates novel analytical approaches, newly sophisticated interpretative models, and richer, data-informed insights. Simultaneously, it questions what might be lost or obscured when computational methods supplant or overshadow traditional hermeneutic frameworks and introspective engagements with texts.

Before acknowledging contemporary relevance, it is crucial to situate the rise of Digital Humanities (DH) in historical and theoretical contexts. The movement toward integrating computational tools and methods into literary studies is neither entirely recent nor isolated. As early as the mid-20th century, literary scholars began to utilize computational analysis, initially through simple databases and later through progressively more sophisticated statistical analyses. However, the convergence of exponential growth in computational capacity, improved analytical algorithms, and vast textual databases accessible today is unique. AI technologies promise to shift Digital Humanities from a supportive analytical strategy into a foundational scholarly methodology. This transformative moment demands thoughtful analysis and critical reflection to optimize positives while assessing risks.

Meanwhile, on the theoretical side, embracing AI technologies within literary studies challenges existing assumptions about textuality, authorship, readership, and interpretation. Structurally, AI-assisted analytical procedures introduce new meta-perspectives on texts, highlighting previously invisible contextual patterns and thematic resonances. Theoretically, AI's capacity to analyze voluminous amounts of literature contributes fresh insights regarding literary genres, periodization, stylistic patterns, authorial attribution, and even conceptions of canon formation.

Yet, these technologically-enhanced perspectives require continuous critical contemplation. The allure of algorithmic objectivity could paradoxically distance literary interpretation away from nuanced human insights and cultural complexity—the very lifeblood of humane scholarship.

Central to the intent of this special column is the bridging of computational methodologies with traditional humanistic inquiry. AI analytical tools often provoke contradictory responses. While some scholars express enthusiasm about the emancipatory potentials of algorithms and computational power to uncover hidden connections in literature, others voice considerable skepticism or unease about delegating fundamental interpretive and evaluative responsibilities to machines.

Accordingly, it is crucial to acknowledge that DH practices—when thoughtfully balanced with critical awareness—can significantly expand humanistic inquiry. Machine learning algorithms are capable of tracking stylistic variations across hundreds or thousands of texts, discerning unnoticed shifts in linguistic patterns, thematic nuances, and genre developments. Such capacity dramatically enlarges the scope available to literary scholarship, enabling wider comparisons and deeper insights through computationally derived "distant reading," [1] a phrase coined by Franco Moretti. At the same time, these new computational competencies also amplify deep reading practices by highlighting neglected textual elements, thereby enriching close-reading approaches through integrated computational findings.

This column, therefore, invites multidisciplinary dialogues around balancing AI-driven "distant reading" and traditional "close reading." It examines ways computational analysis and fundamental hermeneutic practices might mutually enrich rather than displace each other, ultimately enhancing both scholarly efficiency and insightfulness.

At its core, this special cluster of six articles grapples with two overarching questions: How does literature mediate the dialectic between human agency and machine intelligence? What new epistemologies and practices emerge when literary studies embraces AI-driven methodologies? By synthesizing insights from these articles, this introduction maps the thematic contours of the issue, highlighting its contributions to redefining literary scholarship in an era of unprecedented technological flux.

A cornerstone of this special thematic column revolves around the transformative potential—and pitfalls—of digital humanities (DH) in literary

1 See Franco Moretti, *Distant Reading,* Verso, 2013.In this book, Moretti thoroughly articulates the theory of distant reading, discussing its implications and methods for analyzing literature on a larger scale.

studies. Contributions by Seo and Chung, Lee Seung-eun, and others demonstrate how computational tools like text mining, topic modeling, and network analysis are reshaping traditional close reading practices.

Seo and Chung's study of Miguel de Unamuno's poetry exemplifies the power of "distant reading" in the analysis of large text corpora for macroscopic patterns. By applying word-frequency analysis and semantic mapping to Unamuno's oeuvre, the authors trace the evolution of themes like "exile" and "identity" across his poetry and prose. Their computational approach reveals unexpected intertextual linkages, such as the recurrence of existential motifs in works previously studied in isolation. This methodology, they argue, enables scholars to move beyond canonical texts and reconstruct the "systemic structures" of literary history.

Similarly, Lee Seung-eun's research on Korean classical literature illustrates how AI can revive marginalized texts. Once obscured by archaic language and cultural dissonance, works like The Ballad of Princess Bari have found new audiences through webtoon adaptations. By analyzing reader comments and engagement metrics, Lee demonstrates that these digital adaptations prioritize emotional resonance over textual fidelity, transforming classical narratives into vehicles for contemporary empathy. For instance, the webtoon *Princess Bari* (2021) reimagines the protagonist's suffering as a metaphor for modern alienation, eliciting reflections on mental health and societal neglect. Lee's findings align with broader trends in DH scholarship, where data-driven methods are increasingly used to map the "cultural DNA" of texts across time and medium.

Yet this digital rebirth is not without tensions. As classical works migrate to platforms like TikTok and Webtoon, they undergo what media theorist Henry Jenkins terms "convergence culture"—a process where audiences actively reshape narratives through remixes, fan fiction, and crowdsourced annotations.[1] While this participatory turn fosters engagement, it also raises questions about authorship and cultural authenticity. For instance, a viral TikTok adaptation of The Tale of Genji might reduce Murasaki Shikibu's nuanced character studies to romantic clichés. Contributors to this issue advocate for a middle ground: leveraging digital tools to amplify classical literature's relevance while preserving its interpretive richness.

Meanwhile Several contributors caution against technological fetishism. Seo and Chung acknowledge that algorithms may overlook the nuances of metaphor

1 See Henry Jenkins, *Convergence Culture: Where Old and New Media Collide,* New York University Press, 2006. The concept "convergence culture" describes a shifting landscape in which various forms of media interact and transform in response to the proliferation of digital technologies.

and irony in Unamuno's high-density philosophical verse. Likewise, Lee warns that the commercial imperatives driving webtoon platforms—South Korea's webtoon industry was valued at 1.829 trillion KRW in 2022—risk flattening literary complexity into digestible tropes. These critiques echo Ted Underwood's admonition that DH must balance computational rigor with hermeneutic depth. The consensus emerging from this issue is clear: digital tools are most potent when integrated with, rather than replacing, humanistic interpretation.

The second theme of this special thematic column is Son's incisive analysis of Hao Jingfang's 2017 short story collection, *Mirror of Man* (人之彼岸), a luminary of Chinese "soft science fiction." Hao uses speculative narratives not merely to envision distant futures but to interrogate the existential dilemmas of the present. Her stories—such as "Where Are You?" and "The Problem of Love"—probe the ambiguous terrain where human desires intersect with AI's cold rationality. In Qiankun and Alex, for instance, an AI system's data-driven decisions clash with human emotional needs, culminating in its expulsion from society. This binary of "human versus machine" underscores Hao's central thesis: the indispensability of humanity—understood as emotion, free will, and subjective judgment—in an age of algorithmic determinism.

Son situates Hao's work within the framework of posthumanist theory, particularly N. Katherine Hayles' concept of "distributed cognition," which posits that human consciousness is co-constituted with technological systems. However, Hao diverges from Hayles' optimism about human-AI symbiosis. Instead, her narratives evoke a profound unease about AI's potential to erode the very qualities that define humanity. For example, in The Problem of Love, an AI therapist's flawless logic fails to console a grieving widow, exposing the limits of machine empathy. Son argues that Hao's fiction operates as "allegories of the present," forcing readers to confront urgent issues like data privacy, labor displacement, and the ethics of automated decision-making.

Hao's literary strategy also challenges the conventions of science fiction. By embedding AI within mundane settings—hospitals, counseling sessions, domestic spaces—she collapses the boundary between speculative fiction and social realism. This approach resonates with Stefan Herbrechter's call for a critical posthumanism that engages with technology's material impacts rather than abstract futurism.[1] Moreover, her work aligns with emerging ethical frameworks such as the ISO/IEC 29113:2023 standard, which emphasizes transparency and accountability in AI

1 See Stefan Herbrechter, *Posthumanism: A Critical Analysis,* London: Bloomsbury Academic, 2013.

design. Son concludes that Hao's fiction exemplifies literature's dual function: as a critique of technocratic hubris and as a repository of cultural meaning that resists reduction to binary code.

The Third theme broadens the scope to examine how different cultures narrate the AI condition through speculative fiction. Alongside Hao Jingfang's Chinese narratives, Nam and Yu's analysis of Japanese "Isekai" (alternate world) light novels reveals a starkly different approach. Unlike Hao's ethically charged scenarios, isekai stories like *Re:Zero* and *Sword Art Online* prioritize escapism, allowing readers to inhabit fantasy realms where technology's burdens are magically suspended. Nam and Yu attribute this divergence to Japan's "lost decades" of economic stagnation, arguing that isekai's popularity reflects a collective yearning for agency in a society plagued by precarity. Despite differing cultural contexts, both traditions deploy AI and magic as narrative devices to negotiate anxieties about autonomy and control. These cross-cultural comparisons underscore speculative fiction's dual role: as a reflection of localized techno-cultural anxieties and as a lingua franca for global audiences navigating similar existential uncertainties.

The final thematic strand bridges theoretical inquiry with real-world applications. Kwon and Lee's study of AI-driven literary tourism initiatives demonstrates how big data can enhance cultural sustainability. By analyzing visitor behavior patterns at sites like the Hemingway House in Key West, the authors propose adaptive algorithms that curate personalized literary itineraries. Such innovations, they argue, could revitalize local economies while fostering deeper engagement with literary history.

However, Kwon and Lee also warn against the commodification of literary spaces. When museums prioritize Instagrammable installations over scholarly depth, they risk reducing literature to a consumable "experience." This tension between cultural preservation and commercial imperatives echoes broader debates about AI's role in the creative industries. As literary studies increasingly intersects with tech entrepreneurship, the contributors urge a humanistic vigilance against the erosion of textual integrity.

The intersection of artificial intelligence and literary studies is a transformative frontier, reshaping not only the methodologies and tools available to scholars but also the theoretical frameworks underpinning the discipline itself. As this special thematic column demonstrates, AI technologies have the potential to amplify humanistic inquiry, uncovering hidden patterns, expanding textual archives, and revitalizing classical literature through digital transmediation. From Hao Jingfang's speculative fiction to computational analyses of poetry and participatory adaptations

of classical narratives, the articles in this issue collectively illustrate the diverse ways AI can enhance literary scholarship while simultaneously challenging its traditional boundaries.

Yet, this transformation is not without risks. The allure of algorithmic objectivity and the commodification of literature in the digital age threaten to dilute the interpretive depth and cultural richness that define the humanities. As contributors have cautioned, the integration of computational tools into literary studies must be accompanied by critical awareness and ethical reflection. Balancing AI-driven methodologies with traditional hermeneutic practices is essential to ensure that the humanities remain a space for nuanced exploration of human creativity, emotion, and cultural complexity.

Ultimately, this column underscores the necessity of a multidisciplinary dialogue that bridges technology and humanistic inquiry. By synthesizing insights from diverse cultural contexts and theoretical perspectives, it highlights the dual role of AI in literary studies: as a powerful ally in uncovering new epistemologies and as a force demanding vigilance against reductive interpretations. As literature continues to mediate the dialectic between human agency and machine intelligence, scholars must embrace this era of technological flux with both optimism and caution, ensuring that the humanities retain their vital role in understanding the essence of humanity in a rapidly evolving world.

Looking ahead, computational analysis and literary studies stand to become more inclusive, embracing diverse languages, lesser-known works, and marginalized voices that might have been overlooked. As AI transforms the landscape of literary scholarship, it will not replace the humanistic essence of the field but rather enhance it, fostering a richer, more interconnected understanding of literature and its enduring impact on humanity. The fusion of AI and literary studies holds the promise of a future where the past, present, and future of storytelling are interconnected in transformative ways.

Works Cited

Herbrechter, Stefan. *Posthumanism: A Critical Analysis*. London: Bloomsbury Academic, 2013.

Moretti, Franco. *Distant Reading*. Verso, 2013.

Jenkins, Henry. *Convergence Culture: Where Old and New Media Collide*. New York UP, 2006.