

Opening Keynote

Seeing, Reading, and Hearing Images: Expanding Distant Viewing Through Multimodal AI

Lauren Tilton

University of Richmond

How do computers interpret visual information? How can we extend distant viewing capabilities by integrating diverse forms of media such as photography and TV? What kinds of humanities insights are possible by analyzing computationally image, text, and sound?

This talk will introduce the foundational concepts and theory behind distant viewing, then demonstrate how multimodal Large Language Models (LLMs) expand our ability to interpret large-scale visual datasets and meaningful insights that inform research questions in media and visual culture studies. The presentation will conclude by showcasing the Distant Viewing Explorer—an open-access interface designed to facilitate multimodal distant viewing research and discovery.

Interactive Workshop 1 (Pre-registration required)

Text and Data Mining for Chinese Historical Texts

Donald Sturgeon

Durham University

This hands-on workshop introduces participants to a complete text and data mining workflow for material written in classical Chinese, from digital transcription and annotation of premodern works through to computer-assisted extraction of data from their contents. It consists of four parts:

1. Getting started: using the Chinese Text Project crowdsourced editing platform to create and obtain accurate, linked digital transcriptions of premodern Chinese texts.
2. Interactive text mining: extracting and visualizing statistical properties and relationships from transcribed texts. Types of analysis to be introduced include pattern matching of words and phrases, identification of text reuse, and

identification of patterns of vocabulary usage; visualizations include summarization via interactive networks, charts, and textual heatmaps. Techniques will be demonstrated using classical Chinese materials from ctext.org, however these can all be applied equally to materials from other sources, as well as in other languages.

3. Semantic annotation: disambiguating and linking explicitly references in texts to entities (such as names of people, places, and eras), connecting these references to authority databases, extracting knowledge claims about these entities (such as dates of birth, death, or appointment to a particular bureaucratic office) and contributing them to a crowdsourced knowledge base.

4. Interactive data mining: extracting and visualizing data from annotated texts and extracted knowledge claims. This includes querying a knowledge base for particular types of information, and summarizing results via networks, charts, and maps. This section will make use of the Chinese Text Project's Linked Open Data knowledge graph, containing data on people, places, dates, and many other historical entities covering a period of over 3000 years. A brief introduction to querying using the industry-standard SPARQL language will be provided; this language is also used by many other systems containing relevant data, in particular a wide variety of institutions in the GLAM [Galleries, Libraries, Archives, and Museums] sphere, as well as Wikidata, and (via Shanghai Library) the China Biographical Database (CBDB).

This workshop does not assume any prior background in digital methods, and requires only a computer with a web browser. Participants are encouraged to create a free account on ctext.org prior to the workshop:

<https://ctext.org/account.pl> .

Poster Presentation

Seeing with Algorithms: AI Visualizations of Chinese Classical Poetry

Xiyu Mao

The University of Hong Kong (HKU)

In the era of generative artificial intelligence, the boundaries of literary reading and interpretation are being fundamentally reconfigured. In this project, I investigate how state-of-the-art AI image generators—specifically MidJourney, DALL·E 3, and Stable Diffusion—“perceive” and visualize canonical Chinese

classical poetry, offering both a distant and close reading of poetic imagery across languages and modalities. My research addresses two core questions: How does machine vision transform poetic metaphor into visual representation? And what happens to meaning as it travels through translation, prompt engineering, and algorithmic interpretation?

Building on recent developments in digital humanities and computational literary studies, I select ten widely-anthologized poems, each paired with authoritative English translations, to serve as the corpus. Both Chinese originals and English translations are systematically used as prompts for multiple AI platforms, generating a diverse gallery of visual outputs. Each image set is analyzed through qualitative close reading and semiotic frameworks, revealing how machine-generated imagery reflects or departs from the poems' symbolic universe. I extend this analysis with quantitative tools: using the CLIP interrogator, I measure text-image alignment and employ embedding models (BERT, CLIP) to transform text and image into a shared semantic space. Through dimensionality reduction techniques (t-SNE, UMAP), I produce embedding maps that make visible the semantic "distances" and clusterings between poetic concepts, translations, and their algorithmic visualizations. A distinctive feature of my project is its commitment to public engagement and cross-cultural comparison. I design and deploy a bilingual interactive website, which hosts the AI-generated poetry-image gallery, embedding visualization, and an online audience study. In this study, participants from varied linguistic and cultural backgrounds are invited to match images to lines of poetry, rate the resonance and visual accuracy of each AI output, and share qualitative reflections. This large-scale, participatory "distant viewing" experiment foregrounds not only the machine's perception, but also the social imagination of AI-mediated aesthetics.

Preliminary results point to several significant findings. First, the translation and prompt language decisively influence the AI's visual "reading," sometimes preserving, sometimes transforming, and at times distorting traditional metaphors—particularly those grounded in Chinese-specific cultural and sensory contexts. Second, embedding visualization uncovers both expected convergences and surprising semantic gaps between human and machine perception, charting new territory for comparative and multimodal poetics. Third, audience responses reveal diverse pathways of interpretation, suggesting that AI-generated visualizations can both reinforce and productively disrupt conventional readings of classical poetry.

By bridging distant reading/viewing with close, qualitative analysis, my research

demonstrates the potential of multimodal digital humanities to expand the horizons of literary study. My methodology, combining generative AI, embedding visualization, and audience-centered analysis, provides a model for rethinking cross-cultural literary interpretation and human-machine collaboration in the age of artificial intelligence.

LLMs and the Translation of Culturally Loaded Words in Dream of the Red Chamber

Jiayuan Di

East China University of Science and Technology, School of Foreign Languages, Shanghai, China

This study examines how large language models (LLMs) handle the translation of culturally loaded words in Dream of the Red Chamber (《红楼梦》) from Chinese into Japanese, a task that epitomizes the challenges of cross-cultural knowledge transmission in the age of AI. Using the authoritative bilingual edition translated by Ito Shōhei, we constructed a dataset of 500 representative expressions categorized into five cultural dimensions: linguistic, material, social, religious, and ecological. Eight state-of-the-art LLMs—including ChatGPT-4.5, DeepSeek-V3, Claude Sonnet 4, Gemini-2.5, and Qwen3—were systematically evaluated through a mixed-method approach combining automatic metrics (BLEU, COMET, BERTScore) with human evaluation (MQM framework).

Research Process

This study adopted a mixed-method design to evaluate the performance of large language models in translating culturally loaded words from Dream of the Red Chamber into Japanese. First, we selected 500 representative sentences from the bilingual edition translated by Ito Shōhei, categorizing them into five cultural dimensions: linguistic, material, social, religious, and ecological. Second, we tested eight state-of-the-art LLMs—such as ChatGPT-4.5, DeepSeek-V3, Claude Sonnet 4, Gemini-2.5, and Qwen3—by prompting them to generate Japanese translations. Third, translation outputs were assessed through both automatic metrics (BLEU, COMET, BERTScore) and human evaluation based on the MQM framework, covering dimensions such as fluency, accuracy, cultural appropriateness, and stylistic consistency. This multi-layered evaluation allowed us to compare model performance across cultural categories and identify their translation strategies, strengths, and shortcomings.

Results

From the perspective of cultural categories, ecological and religious terms obtained the highest scores, indicating relatively stable cross-cultural semantics. Social and material terms ranked in the middle: the former often suffered from mismatches in honorific and etiquette systems, while the latter lacked adequate cultural annotations, leading to semantic loss (e.g., literal translations of terms such as silver-thread noodles). Linguistic terms received the lowest scores, as idioms, parallel expressions, and literary allusions frequently caused semantic drift and stylistic distortion, highlighting the models' limitations in handling highly condensed and culturally embedded language.

From the perspective of model performance, ChatGPT-4.5 and DeepSeek-V3 showed the strongest results, excelling in fluency and semantic alignment though still struggling with deep cultural fidelity. o4-mini and Gemini-2.5 performed at a moderate level, producing natural but often simplified translations. Claude Sonnet 4 remained steady but conservative, lacking cultural depth. By contrast, DeepSeek-R1 and Qwen3 models ranked lowest, with frequent mistranslations in linguistically and socially dense contexts. Overall, the results indicate that while LLMs demonstrate strong fluency in surface generation, their ability to faithfully convey cultural meanings remains limited.

Discussion and Implications

By situating literary translation within the framework of distant reading and computational evaluation, this study highlights both the potentials and limitations of AI in mediating classical Chinese culture across languages. The findings suggest that while LLMs can serve as powerful tools for cultural analysis and distant translation, the faithful transmission of culturally loaded texts still requires human interpretive intervention.

QL Study of Translator Identity Using LLM: Chinese Ver of My Brilliant Friend

Xu Shiyi

Xu Shiyi

This study adopts quantitative linguistics as its theoretical framework and employs the Gemini 2.5 model to perform multidimensional linguistic feature extraction and quantitative analysis on two Chinese translations of Elena Ferrante's novel *My Brilliant Friend*, translated by Chen Ying who is from Mainland China and Li Jingyi who is from Taiwan China, for the purpose of translator identity determination.

After text preprocessing, the study applies a hierarchical Prompt engineering approach, designing multi-level, task-oriented instructions to fully leverage the feature extraction capabilities of the large language model. At the lexical level, the model is guided to extract and count high-frequency words and key lexical chunks in both translations, analyzing lexical diversity, lexical density, and fidelity to the source vocabulary. At the syntactic level, the model quantifies sentence length, syntactic complexity, and the frequency of subordinate clauses. At the semantic and affective level, the model analyzes differences in emotional expression and tone handling between the two translators based on sentiment-related vocabulary and mood markers. At the discourse level, the model extracts cohesion devices, discourse markers, and paragraph structures to comprehensively characterize the translators' strategies in textual organization. To enhance transparency and interpretability, the study incorporates chain-of-thought reasoning, allowing the model to decompose its inference process step by step and explain the basis for its feature recognition at each stage, thereby avoiding "black-box" outputs. This approach not only increases the reliability of results but also provides theoretical support for fine-grained analysis of translation style differences.

After feature extraction, the study further applies clustering analysis and classification algorithms to statistically model and visualize the linguistic features of the translations. Dimensionality reduction techniques, such as principal component analysis (PCA) or t-SNE, are used to visualize the differences between the two translators in a multidimensional feature space, intuitively revealing style distributions. Quantitative indicators are then employed to assess the stylistic differences between the translators. Finally, machine learning algorithms are used to build a translator identity prediction model to identify and predict the corresponding translator for each text.

The results indicate that Chen Ying's translation tends to preserve the syntactic complexity of the source text, whereas Li Jingyi's version favors concise and fluent Chinese expressions. And complex sentence structures, alternation of long and short sentences, and selective translation of certain cultural terms in Chen Ying's translation contrast sharply with the simplified sentences and straightforward expressions in Li Jingyi's translation. Significant differences are also observed in lexical choices and emotional tendencies between the two translations.

Large language models provide a novel and efficient quantitative approach to translator identity determination, enabling rapid extraction and quantification of stylistic features from large volumes of text, and complementing traditional

manual analysis. And by analyzing the two translations of *My Brilliant Friend* using large language models, it is possible not only to reveal the translators stylistic and identity characteristics but also to provide an important empirical case and theoretical support for the development of language research in the era of digital intelligence. This study offers new perspectives and technical references for translator identity research.

Co-Reading: A Human–AI Co-Reader Media System for Poetry–Emotion–Color

Iro Lim^{1, 2}, Byungjun Kim^{1, 2}

¹ *Cultural Informatics, Graduate School of Korean Studies, The Academy of Korean Studies, Republic of Korea*

² *The Korean Association for Digital Humanities (KADH)*

This study proposes *Co-Reading*, a multimodal media system that functions as a Human–AI *Co-Reader*, enabling humans and artificial intelligence to share interpretive environments and transform literary texts into color-based visual representations.

Traditional close reading offers interpretive depth by attending to the linguistic and narrative layers of individual texts but is limited in scale, while distant reading analyzes large corpora to reveal macro-level literary patterns but risks neglecting the affective and sensory texture of single works (Moretti, 2013). This research introduces a third mode of reading that integrates the depth of close reading with the scalability of distant reading—a mode materialized and made tangible through the Co-Reading system.

While collaborative reading typically refers to multiple human readers sharing the same document, Pearson et al. (2012) demonstrated its extension into digital environments by developing a collaborative system that enables multiple users to navigate a text simultaneously. This study advances the notion of collaborative reading by extending it to human–AI interaction, shifting the focus from shared spatial navigation to shared interpretive experience. A system such as *Verse by Verse* (Uthus, et al., 2021), in which an AI reads a user-written line and computationally generates the next, suggests that AI has the potential to become both co-creator and co-reader. Building on this insight, the proposed system enables the user and the AI to read Korean modern poetry together, detect the emotions embedded in the text, and convert them into color imagery.

Central to this approach is treating datasets not merely as analytical tools but as media that enable new sensory experiences and interpretive possibilities. The dataset serves as a mediator that transfers human annotators' interpretations and provides an environmental condition through which humans and AI can share interpretation. This reframes McLuhan's (1964) notion that "the medium is the message" in light of Peters' (2015) concept of media as the environment that makes our very existence possible, situating the dataset as an environmental medium within the digital turn of Korean literary studies.

The system is implemented in three stages. First, the KPoEM dataset—7,662 lines of modern Korean poetry annotated by five human annotators with 44 fine-grained emotions (e.g., compassion, admiration, guilt) following KOTE (Jeon et al., 2024)—and its associated KPoEM emotion classification model (Lim et al., 2025) are used to map text to emotions. Second, the KCoEM (Korean Color Emotion Mapping) dataset is constructed, reflecting Korean color psychology and general color theory, to map emotions onto color palettes. Third, context engineering integrates the generative AI model, KPoEM, KCoEM, and the I.R.I Color Image Scale (developed in Korea by the IRI Color Research Institute and comprising over 100 emotion adjectives) into a real-time web prototype that transforms poetic emotion into dynamic visualizations. In this configuration, the system functions as media—a connective environment—linking medium to medium and enabling humans and AI to share in the experience of interpretation. Figure 1 illustrates the overall architecture of our Co-Reading system, highlighting the three-stage pipeline—from emotion classification to color mapping and real-time visualization—that underpins the proposed Emotion-to-Color framework.

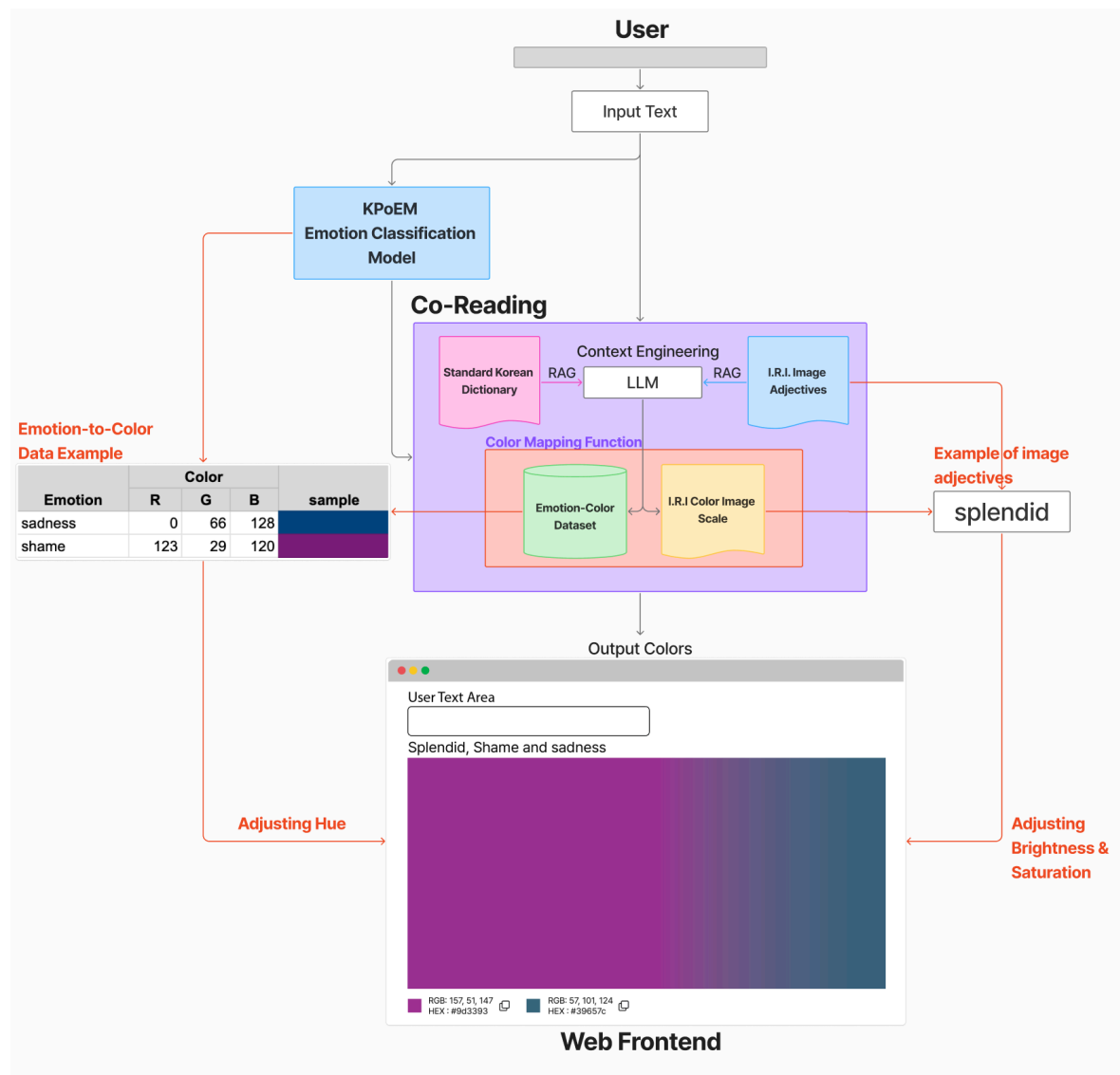


Figure 1. Overall architecture of the Co-Reading system for Emotion-to-Color mapping

This approach critiques conventional data visualization, which privileges quantification and efficiency, by repositioning visualization as a medium of humanistic resonance (Drucker, 2014). Poetry evokes distinct emotions and multilayered imagery for each reader (Wolfgang, 1972); accordingly, the system invites AI to choose an adjective from the I.R.I. scale and actively participate in the color-generation process. Here, AI hallucinations are not dismissed as errors but leveraged as creative interventions that intersect with human intuition. The study's contributions are threefold: (1) it expands human–AI interaction from mere information exchange to a new mode of literary appreciation as co-reading; (2) it renews data visualization paradigms by introducing emotion–color mappings as an alternative, affect-centered visual strategy; and (3) it provides an experimental research model that links dataset construction, context engineering,

and real-time visualization, contributing to interdisciplinary discourse in both digital humanities and AI studies. The resulting emotion-based color palettes have potential applications in exhibition design, publishing, digital archiving, emotion-based recommendation, and color design. Overall, this study positions datasets and systems as environmental media connecting academic research and cultural applications, thereby proposing a creative methodology for the digital humanities that transcends mere analysis.

Keywords

Co-Reading, Digital Humanities, Data Visualization, Emotion Dataset, Multimodal Media

Reference

- AKS-DHLAB. (2025). *KPoEM* [Computer software]. Hugging Face.
<https://doi.org/10.57967/hf/6301>
- AKS-DHLAB. (2025). *KPoEM* [Computer software]. GitHub.
<https://github.com/AKS-DHLAB/KPoEM>
- AKS-DHLAB. (2025). *KPoEM* [Data set]. Hugging Face.
<https://doi.org/10.57967/hf/6303>
- Drucker, J. (2014). *Graphesis: Visual forms of knowledge production*. Harvard University Press.
- Iser, W. (1972). The reading process: A phenomenological approach, *New Literary History*, 3(2), 279-299. <https://doi.org/10.2307/468316>
- Jeon, D., Lee, J., & Kim, C. (2024). KOTE: Korean online That-gul emotions dataset. In *Proceedings of the 13th Language Resources and Evaluation Conference (LREC 2024)* (pp. 17254–17270). European Language Resources Association. <https://aclanthology.org/2024.lrec-main.1499>
- Lim, I., Ji, H., & Kim, B. (2025). Decoding the poetic language of emotion in Korean modern poetry: Insights from a human-labeled dataset and AI modeling. *arXiv*. <https://arxiv.org/abs/2509.03932>
- McLuhan, M. (1994). *Understanding media: The extensions of man*. MIT Press.
- Moretti, F. (2013). *Distant Reading*. Verso Books.
- Pearson, J., Owen, T., Thimbleby, H. W., & Buchanan, G. (2012). Co-reading: investigating collaborative group reading. In: Boughida, K. B., Howard, B., Nelson, M. L., Sompel, H. V. D. & Sølberg, I. (Eds.), *Proceedings of the 12th ACM/IEEE-CS Joint Conference on Digital Libraries (JCDL '12)* (pp. 325-334). ACM. <https://doi.org/10.1145/2232817.2232876>
- Peters, J. D. (2015). *The marvelous clouds: Toward a philosophy of elemental media*. University Of Chicago Press.

Gender Representation in *Strong Female Protagonist* Internet Novels

Mozhuo Chen

University of Oxford

In recent years, *strong female protagonist* online fiction has gained wide popularity among Chinese women for its feminist narratives. It challenges patriarchal gender norms by featuring highly independent, powerful women and emphasizing their personal achievements over heterosexual romance, while also exposing tensions between individual success and collective empowerment. Current scholarship has offered qualitative accounts of its feminist tendencies, yet it has not systematically examined how this genre challenges or reproduces gendered norms through stylistic and narrative structures. To address this gap, this pilot study examines 60 *strong female protagonist* novels together with 60 romance and 60 male-oriented novels as reference corpora, all drawn from Tomato Novel, one of the most popular free online fiction platforms. The two reference corpora are regarded as embodying more traditional gender ideologies and serve here as baselines of gender conventions. Combining machine learning, corpus linguistics, and character network analysis, the study asks how *strong female protagonist* fiction reconfigures normative gendered dispositions in heroine characterization, and whether it elevates the collective status of female characters and fosters interactions among women.

The methodology consists of two parts. First, dependency parsing was used to extract words associated with protagonists, which were then employed to train a Nearest Shrunken Centroid classifier to distinguish *strong female protagonists*, romance heroines, and male-oriented heroes. The latter two were taken to embody conventional femininity and masculinity, respectively. The model achieved over 89% in both accuracy and macro-F1 score. Stability selection was subsequently applied to identify discriminative lexical items for each type. These items were qualitatively examined to compare inter-category differences, supported by collocate analysis and by a visualization generated with a pre-trained Word2Vec model to illustrate their relative proximity. Second, co-occurrence networks of the twenty most frequent characters were constructed for each novel, with gender manually annotated within a binary framework for

analytical consistency. Comparative analyses across three genres then analyzed gender differences along three dimensions: (1) character visibility, assessed by the gender distribution of characters and the relative mention frequencies of male and female characters; (2) character importance, measured through four centrality indices that capture how structurally important male and female characters are within the networks; and (3) interaction patterns, captured by the proportions of different gender pairings and supplemented with gender assortativity, which indicates tendencies toward same-gender connections. The results reveal three main patterns. First, verbs governed by *strong female protagonists* are more agentive and action-oriented than those of romance heroines, which stress emotion and passivity. While resembling male-oriented heroes, *strong female protagonists* enact a distinct mode of agency that is embodied and procedural, marked by tactical adjustment rather than outcome-driven dominance typical of male-oriented heroes. Second, the relative scarcity of heterosexual vocabulary sets *strong female protagonists* apart from the other two types while the prominence of 孩子 (“child”) differentiates *strong female protagonists* from male-oriented heroes. Third, although *strong female protagonist* novels do not raise female characters’ overall visibility and importance beyond the heroine and still privilege cross-gender interactions, they place comparatively greater emphasis on female–female ties, which potentially enable visions of female solidarity. Taken together, these findings illustrate the interplay of subversion and accommodation in *strong female protagonist* fiction. This study advances an empirical analysis of the multi-faceted feminist discourses in *strong female protagonist* fiction and the tensions it negotiates, particularly the discrepancy between protagonist empowerment and the marginalization of women as a group. It further contributes to the understanding of contemporary Chinese grassroots feminisms, especially the strand of neoliberal feminism in the Chinese context. Moreover, this research illuminates how gender dynamics in fiction operate through multiple intersecting mechanisms and provides a transferable framework for the multidimensional analysis of gender representation in Chinese fiction.

From Poetic Image to Algorithmic Vision: Re-Imaginations of Sima Guang’s Dule Yuan

Xiao Yang, Wen Liang

Tsinghua University

This study focuses on Sima Guang's Dule Yuan (Garden of Solitary Joy) in the Northern Song dynasty, a site that functioned both as a personal spiritual emblem for its owner and as a multivalent cultural metaphor in later ages. It presents an interdisciplinary exploration that combines data analysis, cultural interpretation, and AI-based visual experiments. While scholars have long examined the interplay among poetry, painting, and gardens in Song literati culture—revealing the spiritual pursuits, social practices, and historical contexts underlying them—previous studies have often treated such materials as relatively static cultural content, paying insufficient attention to their dynamic transformations across different social networks and historical contexts. This project instead approaches Dule Yuan as a cultural image dynamically constructed through multiple discourses over time—at once an expression of Sima Guang's personal experience and a case study of how Chinese classical cultural symbols acquire new meanings through transmission and re-contextualization.

Drawing upon a corpus of seventy-one poems related to Dule Yuan, the research constructs a three-tiered diachronic narrative: Sima Guang's own compositions, the poetic exchanges of his contemporaries, and the reinterpretations by later literati. At the quantitative level, the study employs word frequency analysis, topic modeling, and semantic network analysis to reveal the semantic migration of the garden's core imagery—for instance, its evolution from notions of "leisure" (xianshi) and "self-contentment" (zide) in Sima Guang's era to those of "moral virtue" (dexing) and "integrity" (fenggu) in later contexts. Subsequently, at the interpretive level, these data-driven patterns are contextualized through a hermeneutic reading of paintings, political history, and Confucian thought, elucidating the cultural drivers behind the garden's transformation into a potent symbol of political and moral significance.

The textual abundance yet lack of visual documentation of Dule Yuan makes it an ideal case study for examining and critiquing how text-to-image models translate complex cultural memory. Accordingly, the research utilizes these models to generate visualizations of Dule Yuan in different historical contexts. This process not only reveals the cultural "misreadings" caused by the limitations of contemporary visual corpora but also thereby confirms the biases of training data and the epistemological limits of the models, highlighting the necessity of humanistic intervention in interpretation and correction. In response, this study proposes a paradigm for AI prompt design rooted in the classical Chinese poetic concepts of xing (form), xiang (image), and yi (idea), aiming to explore an effective visual generation pathway for reproducing cultural memory and a novel model for human-machine collaboration.

In conclusion, this research not only illuminates the dynamic evolution of Dule Yuan as a cultural image but also advances a methodological paradigm that integrates quantitative analysis, cultural interpretation, and AI critique. Beyond offering a new interpretation of Dule Yuan, the project demonstrates how classical Chinese texts can enter into dialogue with global digital humanities, thus contributing to broader international discussions on cultural memory and re-contextualization at the intersection of historical tradition and digital futures.

Benchmarking Narrative Comprehension in Long-Context Large Language Models

Tong Li

The Chinese University of Hong Kong

The proliferation of Large Language Models (LLMs) with extended context windows has spurred the development of sophisticated applications, from multi-document analysis to repository-level coding assistants, all of which demand robust long-context understanding and reasoning capabilities. However, evaluating these capabilities remains a significant challenge. Existing benchmarks, while valuable, often suffer from critical limitations that allow models to achieve high scores through shortcuts, without demonstrating true comprehension. These shortcuts include leveraging memorized parametric knowledge from pre-training data, solving tasks with localized retrieval rather than global context integration, and relying on shallow reasoning or summarization techniques. To address these shortcomings, our team led by Yu, M., et al. introduces a novel benchmark designed to rigorously assess an LLM's ability to perform global comprehension and multi-step reasoning over long narratives. This poster at the HKADH conference shares my experience contributing to the construction and validation of our benchmark dataset. The benchmark formulates a unique task: given the full text of a novel, the model must determine whether a newly generated, hypothetical prequel story for a key character is consistent or contradictory with the established narrative. This prequel entailment framework inherently mitigates the flaws of prior benchmarks. Because the prequels are novel creations, they do not exist in any model's training data, thus neutralizing the memorization shortcut and forcing reliance on the provided context. The task is explicitly designed to require holistic understanding, as verifying consistency often involves aggregating subtle clues and tracking character arcs scattered across the entire book. Our analysis confirms this, revealing that 88% of

instances require evidence from multiple, non-local parts of the narrative to be solved correctly. Furthermore, the task necessitates deep, multi-step reasoning, as the implications of a prequel on the canonical story are often indirect and require causal inference rather than simple fact retrieval.

Our dataset was meticulously constructed to ensure quality, diversity, and challenge. We selected literary works spanning multiple genres (e.g., adventure, historical fiction, crime fiction) and languages (English and Chinese). For key characters across these books, we used state-of-the-art LLMs to generate a pool of candidate prequels. These generated prequels were then subjected to a human annotation process. Annotators each deeply familiar with the selected books labeled each prequel according to a detailed typology that distinguishes between different forms of consistency and contradiction (e.g., Local Contradict, Global Contradict, Consistent). This process yielded a high-quality dataset of more than seven hundred instances. The annotation was guided by strict principles to ensure objectivity, such as basing judgments solely on the original novel’s content and assuming direct continuity between the prequel and the story. The quality of this process is reflected in a substantial inter-annotator agreement, with a Kappa score of 0.7828. By focusing on prequel entailment, our task design moves beyond simple information retrieval and measures a form of fluid intelligence, the ability to reason and solve novel problems, within the natural language space, a significant departure from benchmarks that test crystallized knowledge.

We conducted extensive experiments on our benchmark using a suite of state-of-the-art open-source and commercial LLMs, including the Qwen, DeepSeek, and Gemini families. We evaluated models under several paradigms: vanilla few-shot in-context learning (ICL), Retrieval-Augmented Generation (RAG), in-domain fine-tuning, many-shot ICL, and commercial agentic systems like OpenAI’s DeepResearch. Our findings reveal a significant and persistent gap between machine and human capabilities in long-context reasoning: (1) Significant Human-Machine Performance Gap: The best-performing model, Gemini-2.5-Pro, still lags behind human performance by over 15% in F1 score, highlighting the profound difficulty of the task for current systems. (2) Flawed Reasoning Underlying Correct Answers: A critical contribution of our work is a manual human study on model reasoning. We found that LLMs frequently arrive at the correct binary answer (consistent or contradict) through entirely flawed or invalid reasoning. This creates a reasoning accuracy gap of over 30% compared to humans, who demonstrate consistent and valid reasoning paths. This result underscores the superficial nature of current models’ understanding and

demonstrates that answer accuracy alone is a misleading metric for evaluating true comprehension. (3) Ineffectiveness of Scaling and Advanced Methods: Our experiments show that simply providing more context via RAG does not guarantee improvement and can even degrade the performance of stronger models like Gemini-2.5-Pro, which may over-rely on their powerful parametric knowledge. Furthermore, neither in-domain fine-tuning nor many-shot ICL yielded performance gains, suggesting that the reasoning capabilities required by our benchmark are not easily elicited and represent a fundamental limitation of current architectures. (4) Resilience to Web-Based Shortcuts: Commercial DeepResearch systems performed poorly compared to RAG-based approaches, confirming that the problems in our dataset cannot be solved by retrieving existing literary analyses from the web. This validates our benchmark's design as a true test of reasoning based on the provided context.

Selected Reference:

- Yu, M., et al. (2025). PRELUDE: A Benchmark Designed to Require Global Comprehension and Reasoning over Long Contexts. ACL under review.
- Agarwal, R., et al. (2024). Many-shot in-context learning. The Thirty-eighth Annual Conference on Neural Information Processing Systems.
- Bai, Y., et al. (2024). Longbench: A bilingual, multitask benchmark for long context understanding. Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics.
- Karpinska, M., et al. (2024). One thousand and one pairs: A "novel" challenge for long-context language models. Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing.
- Kočiskỳ, T., et al. (2018). The narrativeqa reading comprehension challenge. Transactions of the Association for Computational Linguistics, 6, 317-328.
- Lewis, P., et al. (2020). Retrieval-augmented generation for knowledge-intensive nlp tasks. Advances in Neural Information Processing Systems, 33, 9459-9474.
- Xu, X., et al. (2025). DetectiveQA: Evaluating long-context reasoning on detective novels. Workshop on Reasoning and Planning for Large Language Models.

GraphRAG for Plant Knowledge Extraction from Chinese Local Gazetteers

Hui Li

Nanjing Agricultural University

Chinese Local gazetteers (a.k.a., difanghzi, Chinese 方志), are historical records that have been continually written or compiled by local officials and scholars, concerning a variety of topics such as local products, landscape, population, economy, and culture over time [Li & Li, 2022]. Jiangsu Province in the South of China has a history of over 2,000 years of compiling local gazetteers, and the gazetteer collections of regional products owned by Nanjing Agricultural University in Jiangsu is one of the largest gazetteer repositories in China. Nowadays, with the support of cutting-edge digitization technology, researchers are increasingly focusing on discovering valuable knowledge from large-scale local gazetteers via text mining strategies. Most of the previous studies dedicated to the extraction and organization of entity information in historical texts, particularly concerning mentions and descriptions of persons, plants, and locations. For example, Chen et al. [2020] developed LoGaRT, a suite of digital tools for the retrieval and analysis of Chinese local gazetteers; Liu et al. [2022] applied natural language processing techniques to extract names of individuals and locations, along with their relations. However, relatively few studies have attempted to further interpret and leverage the implicit knowledge about local products (e.g., plants and animals) within these gazetteers (Li, 2021).

Rice is a staple food in southern China, with paddy rice serving as the one of the primary crops in Jiangsu Province. The local gazetteers encompass a variety of rice cultivars across most rice-growing regions including Jiangsu Province in China [Xia et al., 2024]. Each record in this digitized collection mainly consists of a rice name, the local gazetteer where the rice is recorded, the time when the gazetteer was published, and the corresponding rice description. By extracting rice information in gazetteers can provide researchers with the unique attributes of special rice varieties and the cultivation history of our ancestors.

In this study, we develop a knowledge-based chatbot system utilizing Generative AI technologies based on rice records in 544 local gazetteers from Jiangsu province spanning over 8 centuries. This system aims to introduce rice knowledge to the public and serve as a valuable reference for specialized rice breeding. This system consists of three key components: “Rice History”, “Rice Chatbot” and “Land of Rice and Fish”. Each component is briefly introduced as follows.

Rice History : in this component, textual descriptions from local gazetteers, folklore records, and biographies are selected and displayed on the webpage. By reading these materials or listening to the corresponding AI-generated audios (click a mascot-figure of Nanjing Agricultural University) , users can gain a vivid understanding of Jiangsu rice history and culture.

Rice Chatbot: this component consists of two parts, i.e., the knowledge graph of rice cultivars and the retrieval augmented generation (RAG) boosted by the power of large language models to enhance users with an interactive and pleasant human-computer interaction. In graph module, nodes represent rice names and attributes, and edges represent relations between entities. When users raise a rice-relevant question, the chatbot quickly identifies the nodes and paths most closely associated with the query in graph, and then returns the targeted outputs to users. While in RAG module, the textual descriptions and the internal knowledge of LLMs enable the system to integrate general knowledge into the rice domain knowledge during the dialogue process. Thus this platform not only addresses specialized questions on rice cultivation, but also provides broader insights by incorporating the knowledge of other related areas.

Land of Rice and Fish: this component is composed of three elements, the “Rice Map”, “Rice Chart”, and “Rice Game”. While appreciating the beauty of data, users can gain an in-depth understanding of the rice-related knowledge. Rice Map is visualized using a fish-shape hex map, which simulates the geographical outline of Jiangsu province. Users can click on different hexagon grids to view specific rice varieties and read corresponding descriptions from local gazetteers, respectively. Rice Chart displays the key statistics of rice varieties in Jiangsu via visualized charts on animated painting scroll. Rice Game features an interactive game and players are guided through matching challenges which incorporates rice knowledge, such as key traits, cultivation environment and phenotypes. With a designed interface and simple rules, this game offers a delightful user experience, aiming to promote public awareness and interest in rice science, particularly among young users.

This system serves as an effective tool for the retrieval and analysis of plant knowledge within collections of Chinese local gazetteers. Users who are interested in traditional Chinese culture and/or domain experts in need of resources of local rice varieties, can find the information they need on this system.

Deterritorialized Ocularcentrism: AI-Generated Imagery's Haptic Potential

Mingyang Li¹, Yanlei Li²

¹ 华南农业大学珠江学院

² 香港浸会大学

In February 2024, the American AI research company OpenAI released Sora, its first text-to-video model, sending immediate shockwaves through the traditional film and television industries. Industry insiders feared that the technology could render conventional image-making techniques obsolete—little more than the "dragon-slaying skills" in a world of generative imagery. Ordinary audiences, however, greeted the tool not with anxiety but with Dionysian exuberance; cheap, frictionless access to image production has democratized visual creation. Behind this euphoria lies a deeper epistemic shift: AI-generated imagery deterritorializes the ocularcentric regime that has dominated moving-image art since the inception of the medium.

In the classical cinematic apparatus, a fixed viewing distance constructs an ontological gap between spectator and image; the audience is positioned as a passive, silent subject, consuming pre-programmed optical flows from afar. The apparatus thereby enacts an ideological capture that Laura Mulvey once termed "to-be-looked-at-ness." Recognizing this asymmetry, scholars have turned to Merleau-Pontian phenomenology to restore corporeal agency. Vivian Sobchack's "film's body" reconceives the cinematic apparatus as an embodied interlocutor that both sees and is seen, while Laura U. Marks's "haptic visuality" argues that certain images solicit a proximal, almost tactile gaze that scans surface rather than plunging into depth. Extending the paradigm to digital media, Mark Hansen demonstrates how virtual-reality environments enlist the viewer's body-schema, eliciting involuntary motor responses that blur the boundary between kinesthesia and touch. Yet these accounts remain phantasmatic: the "touch" they describe is either metaphorical or vision-mediated, and the darkened room of cinema, or VR headset, still subordinates the body to a luminous projection. Crucially, they treat touch as a unilateral sensation—something the recipient "has"—and overlook the bilateral metamorphosis produced by genuine contact, in which both image and observer are altered by the forces exchanged.

AI-generated imaging technology offers a material escape route from this impasse. First, the user operates in an illuminated, unconfined space; no headset or black box encloses the body. Second, the act of prompting, refining, and re-generating images activates real-time changes in proprioception, micro-gesture, and retinal stress—measurable somatic feedback that exceeds purely visual address. Most importantly, the image itself is subjected to force: latent vectors are redirected, pixels are re-weighted, and attention maps are re-calibrated under the affective pressure of the user's prompt. Image and observer enter a reciprocal modulation that satisfies the Deleuzian criterion of "becoming" rather than mere "viewing."

To theorize this emergent tactile economy, we must move beyond the residual visualism of Merleau-Ponty and enlist a conceptual lens that privileges mobility, multiplicity, and surface-to-surface contact. Gilles Deleuze's figure of the nomad provides such a lens. AI-generated imagery functions as a weapon of nomadic warfare: it converts sedentary spectators into data-navigating nomads, deterritorializing the striated, distance-based space of traditional projection into a smooth, data-intensive space centered on haptic relay. Within this smooth space, vision is no longer the sovereign sense; it is one vector among others in a field of tactile, affective, and algorithmic forces. The result is not the representation of touch but its actualization—an encounter in which both image and body are rewritten by the event of contact.

Where's the Fun?: Proposing for a digital repository for Cold War Hong Kong toys

Connor Ka Hei Au Yeung

Purdue University Department of History

This project explores the possibility of digitally curating toys manufactured during Cold War Hong Kong. Being a part of everyday life, seemingly innocent daily objects can display diverse forms of agencies in interaction with humans (Robles, 2024). The same certainly extends to toys, as "distinct forms of furniture, clothing, and playthings evolved in response to adult perceptions of children's changing needs" (Brandow-Faller, 2018). While global childhood studies have emphasised upon impacts of historical events on childhood experiences, and shifting notions of childhood over distinct cultures and time, toys remain understudied as a form of material culture acting as a conduit between individual children, the wider community and the "adult" social spaces that children are expected to grow into. Curiously, Hong Kong's recent history as a capital of toy manufacturing has also received less than due academic attention. Many of the extant publications concerning Hong Kong's toy industry history are published from an angle of hobby collection (Chan, 2017; Yeung et al., 2017), or through the lens of business history (Monks, 2010), leaving out significant gaps in the material culture of childhood, and socioeconomic histories.

A history of toys from Hong Kong, focusing on using toys as material agents that show stories of socioeconomic development, commercial trade and technological exchange, cannot be complete without faithful renditions of playing and making. Just as importantly, accessibility, particularly with the hindsight of the global

COVID-19 pandemic, proves the value of interactable virtual archives to maintain public education and research access in times of crises. Reviewing extant projects covering historical childhood in East Asia, the Hoover Institution's multimedia project, *Fanning the Flames: Propaganda in Modern Japan* demonstrates a valuable example to preserve access to experiencing past childhood material cultures, informed by historical context, in an interactable virtual format.

With these elements in mind, I propose the creation of a project dedicated to digitally curate toys made in Cold War Hong Kong, embedded within the context of Hong Kong's postwar developments, and provides historical contexts of technological transfer, capital flow, to the evolving consumption of Hong Kong-made toys as they gain global renown. I also aim to categorise individual toys by theme and manufacture materials, demonstrating evolving socioeconomic circumstances and manufacturing capabilities, in conjunction to downloadable 2D/3D scans of toys for object lessons, with an option of virtually playing with the toys through online UIs, or at minimum, a video recording showing how to operate a toy.

Bringing this early-stage project into this conference, I aim to discuss questions including but not limited to the following: Many toy companies in discussion still exist, and may hold copyright over their products. To what extent can this project allow educational access to replicate toys that may be private intellectual property? Moving on from legal issues, technical problems also abound. On a spectrum of accessibility and granularity, what considerations should be taken when conducting scans of toys? Compared to extant 3D replication projects, such as Mark Olson's Interactive Archive of Historical Medical Technologies, and the Virginia Commonwealth University's Virtual Curation Laboratory, what possible issues might 3D scanning processes face, such as brittleness of scanned objects, or the extent to which materials and paints could be replicated?

Application of Blockchain and AI Technologies for Sustainable Development

Ben Radhakrishnan, Nelson Altamirano

National University, San Diego, CA, USA

Over the last decade, business corporations and UN/Yale University have made various levels of commitments and investments for sustainable development and environmental tracking and reporting on the progress towards their goals. At the

global level, the Global Reporting Initiative (GRI) tracks corporations. UN tracks its progress towards its country 2030 Sustainable Development Goals (SDGs). Yale University, through its Environmental Performance Index (EPI), tracks some 180 countries' environmental issues.

This research proposes a combined model for utilizing modern technological tools, Blockchain and Artificial Intelligence (AI), to better track the accuracy of the collected data and the ability to predict the goals for the future. This new process will significantly help towards the achievement of sustainability goals at a lower cost.

Organizations such as GRI can implement a reporting framework for annual Corporate Social Responsibility Reports (CSR) with built-in Blockchain technology, where the data is immutable and traceable. This process and outcome are key to investors' confidence in sustainability index funds (e.g., ESG funds). Countries can use blockchain technology for SDGs and EPI data to increase reliability. This step could also benefit the integration of corporate and country-level data to achieve corporate and country goals.

The proposed model includes IBM Blockchain technology, IBM's LLM offering 'watsonx.ai,' and IBM's 'Learning AI Agent.' This combined IBM architecture can collaborate well with individual corporations' data center applications and country-level data centers to ensure accurate data tracking, immutable data storage, and predictive data analysis. This data analytics model helps with a more qualitative and quantitative outcome for all. Data Analysis and prediction can be continuous rather than annual. The reporting and analysis will be more effective (doing it right) and efficient (more cost-effective).

Many aspects of AI Agents are under research, and their real application will expand. AI agents will focus on a task execution, choosing the best outcome given the goals. With the noted above approach, AI Agents are expected to be more cost-effective since corporations or non-profits do not have to invest in large computer infrastructure, including LLM models.

Index terms: Sustainability, Blockchain, Artificial Intelligence, Architecture, AI Agent, Data Center

Hybrid Augmentation: Building a RAG-CAG Framework to Support Linguistic Research

Rui SHANG¹, Ke Wang²

¹ *Westlake University*

As large language models (LLMs) rapidly develop in supporting research, many institutions have already adopted commercial GenAI tools, such as ZJU's Deepseek and HKU's ChatGPT service etc. While these tools demonstrate certain capabilities in general tasks, they always fail to provide convincing answers to prompts related to a specific academic field (Singh et al., 2025). This defect may come from various reasons, such as everchanging knowledge, illusion, input truncation and poor reasoning from current LLMs (Kasneci et al., 2023). Consequently, the application of general LLMs in academic fields remains a significant challenge.

To address the limitations of off-the-shelf models, augmented generation have been invented and widely implemented, since they enable LLMs to produce more accurate and up-to-date responses by retrieving relevant resources from databases or retraining models with specialized materials. Common approaches include the latest retrieval-augmented generation (RAG) and cache-augmented generation (CAG). RAG dynamically loads context from storage sources (such as databases or object storage) while providing response after checking relevant content through queries, embeddings, and retrieval algorithms (Guo., 2025; Oche et al., 2025). Therefore, the performance of RAG applications depends not only on the quality of the context but also on the embedding and searching algorithms selected during system design. In contrast, CAG preloads the entire context into memory and uses key-value (KV) caches within the model's context window (Agrawal, 2025), which is also known as prompt-caching recently provided by ChatGPT and Claude. However, CAG is constrained by the model's token limits (typically ranging from 32k to 100k tokens). Although this capacity is substantial, it remains finite, restricting its scalability to extremely large datasets. To combine the advantages of both, hybrid methods that integrate RAG and CAG have emerged. For instance, initial simple queries can be immediately answered using CAG's preloaded cache, while subsequent in-depth queries leverage RAG's dynamic retrieval. This integration effectively manages memory constraints, optimizes the use of the limited context window, and prioritizes low latency in real-time applications.

While both RAG and CAG are highly dependent on high-quality, domain-specific knowledge, the practical application of these technologies has predominantly been limited to corporations and professional services. These implementations have typically involved publicly available data source or generic knowledge bases in certain professional industries, such as enterprises, discovery searching and medicine (Xu et al., 2024; Bevara et al., 2025; Gan., 2025). However, there is a

noticeable absence that combine these techniques with proprietary academic. Existing frameworks like RAGAS, DeepEval, and TruLens assess LLM performance, but evaluations of academic sources are scarce, despite their reliance on verifiable ground truth for accuracy and reliability. This paper aims to extend the integration of RAG and CAG pipelines with existing LLM, enabling them to offer more domain-specific and up-to-date responses within academic fields, and providing rational evaluation criterion. Meanwhile, it seeks to demonstrate the new possibilities of LLMs in academic services. Specifically, academic libraries or other similar technical agencies, as a hub of academic resource, have the potential to develop tailor-made, shared collaborative systems for researchers. In this particular study, we take a linguistics research project as an example, where we organize and address some of the controversial academic concepts within the field to serve as material for a hybrid RAG-CAG model built upon Deepseek LLM model provided by university library. The model is optimized to assist in cross-comparing and analyzing various scholars' definitions across a context of board literature, thus mitigating the common defects appeared in traditional large models, such as truncating relevant literature or making speculative judgments. Technically, the key literature corpus is preloaded into the model to integrate domain knowledge as CAG, while RAG dynamically loads the academic outcomes to facilitate knowledge updating without retraining. Finally, the hybrid RAG-CAG model demonstrates improved performance in handling domain-specific linguistic queries by combining CAG's efficient, preloaded context access with RAG's dynamic retrieval capabilities. In addition, this article also integrates various evaluation frameworks commonly used in general tasks, such as RAGAS, DeepEval and TruLens, and proposes the Research Evaluation For Augmentation Framework (REAF) to emphasize the ground truth and contextual relevance of academic sources to address the scarcity of specialized evaluations.

Keywords

Large Language Models (LLMs)

Retrieval-Augmented Generation (RAG)

Cache-Augmented Generation (CAG)

Academic Libraries

Domain-Specific Knowledge

Linguistics Research

Hybrid AI Models

Chinese Engineers Relational Database 2.0: A New Interface for Data Exploration

Thorben Pelzer

HKUST

to be provided

Glitch Revelations: AI, Trash Aesthetics, and the Dionysian Data-Self

Yanlei LI¹, Mingyang LI²

¹ *Hong Kong Baptist University*

² *South China Agricultural University Zhujiang College*

In the vast and exponentially growing digital landfill of AI-generated content, the technical pursuit of photorealism and narrative coherence is perpetually shadowed by its own failure. This failure, however, is not an end but a fertile beginning. The algorithmic struggle for character consistency and visual harmony inadvertently gives rise to a pervasive glitch aesthetics—a dynamic and generative form of "trash aesthetics" that is actively recalibrating contemporary sensory perception and aesthetic judgment.

Far from being dismissed as errors, these digital malfunctions and grotesque artifacts are curated and celebrated as a new form of social currency within decentralized, post-media tribes. This phenomenon fuels a distinctly Dionysian revelry in online spaces, where the daily, even hourly, iteration of content prioritizes the visceral thrill of the breakdown over the sterile achievement of technical perfection. Within this carnivalesque sphere, young creators strategically employ symbolic "trash" avatars-glitched, distorted, or otherwise imperfect digital bodies-to navigate a complete, ritualistic life cycle of identity performance. This cycle involves being celebrated as icons (deification) only to be subsequently dismantled or replaced (sacrifice), a process that mirrors the relentless consumption and disposal inherent to digital culture itself.

Moving beyond a purely techno-deterministic reading, this study adopts an interdisciplinary framework situated at the confluence of digital media art practice and contemporary cultural theory. It asks: how does the very materiality of AI-driven image production—its inherent instability and "noise"—reconfigure youth aesthetic preferences and, more profoundly, their existential sensibilities towards selfhood and community? By analyzing these glitches not as bugs but as

features, this research posits "trash" as a critical lens through which to examine the formation of identity within the algorithmic milieu.

Organised Panel I

Paradigm Shift: Creativity, Knowledge & Licensing in Dialogue

Elaine Chan¹, Roger Lin¹, Alex Au²

¹ *Hong Kong Chu Hai College*

² *Hong Kong Design Institute*

Enabling a Paradigm Shift: Intersections of Creativity, Epistemology, and Licensing Authority (Conference Panel Title)

convened by Elaine Chan

Paper Abstract (1)

Distant Reading of Musical Corpora: Generative AI's Role in Redefining Creative Structures

The emergence of generative AI tools such as Suno has fundamentally altered the way music is written and created. Illustrated by the AI generated band The Velvet Sundown topped the charts of Spotify in 2025. This situation is a direct challenge on the traditional model of humanistic music-making, making us reassess what constitutes artistic worth or novelty.

In light of this disruption, this study investigates the creative impact of AI by conducting a comparative analysis of tracks generated by Suno AI and a human-composed piece. Utilizing "distant reading"—a computational analysis of large-scale musical corpora—AI identifies and remixes prevalent patterns like chord progressions and song structures. However, this method raises a critical question posed by scholars such as Nick Collins: does composition using only pre-defined templates stifle or encourage creativity?

Our findings indicated that while AI excels at generating structurally coherent music by recombining learned patterns, it often lacks the nuanced originality of human composition. We therefore propose a hybrid model for creativity one that intersects AI's data-infused scalability with human capabilities for "close listening" and "intuitive innovation". We suggest a hybrid model. This paper argues that this synergy is not a replacement of the human artistry, but a conversion optimizer of the creative process. It gives evidence of such integration of data-driven insight and human imagination, and examines the new musical language created in the

era of AI.

Author: Alex Tin-yung Au

Affiliation: Hong Kong Design Institute

Email: alexau@vtc.edu.hk

Bio: Au Tin-yung, Alex was born in Hong Kong. He is an active composer, educator, and promoter of contemporary music. His works have been widely performed in different places such as the United States, China, Ireland, Taiwan, Italy, France, Sweden and the U.K. Au's works often explore the potential of the audible sonic spectrum by integrating computer technology with contemporary compositions. His work "Dao" has been selected as one of the three finalists in Duosolo Emerging Composer Competition in 2011 (Cortona, Italy).

Au received his Ph.D. in music composition at the University of Hong Kong with support from the University Postgraduate Studentship. His Ph.D. dissertation focuses on audio signal analysis and processing in music composition. This research involves the exploration of digital audio processing, sound synthesis, and spectral analysis of sounds in music composition. Au also received his Master's Degree (Distinction) in Composition at the University of York. In 2017, he studied computer music at IRCAM under the guidance of Mikhail Malt. He was a council member of Hong Kong Composers' Guild (HKCG). Au is currently a lecturer at Hong Kong Design Institute (Department of Digital Music and Media).

Paper Abstract (2)

Rethinking the Epistemology of AI in Filmmaking through the 'Kino-eye'

Since AI-powered media nowadays create images and moving pictures from human language prompts, the technical creative environment for text-to-image generation is based on the publicly available images on the internet. AI's ways to use pre-existing visual data and synthesize new content from learned statistical patterns problematize our understanding of film ontology. AI-generated videos often face challenges in controlling consistently the movements and actions of depicted personalities, especially over longer durations. The output videos frequently deviate from the intended contextual references, leading to inconsistencies in behavior, appearance, and scene continuity. Therefore, it appears that Orson Welles' film ontology, which conveys a sense of real-time progression through unobtrusive long takes, would no longer sustain as a creative practice in the digital age. Similarly, it seems that the neo-realist filmmaking approach, grounded in subtle portrayals of authentic human experience, can no longer be materialized through language prompts.

Epistemologically, the knowledge framework of AI that compiles images from the massive and diverse dataset may probabilistically manipulate images. Many

scholars like Charlotte Bird, Eddie L. Ungless, Atoosa Kasirzadeh, Leonardo Nicoletti & Dina Bass are critical of the ethics, authenticity and truthfulness of text-to-image generation. This paper offers an empirical analysis and critical review of the rapidly evolving ontology of filmmaking in the artificial intelligence era, arguing that while the AI-driven video revolution marks a regression, it simultaneously nurtures the potential for enriched machine-human co-creativity. This paper compares and contrasts the visual contents of a contemporary AI generated award-winning short film and Dziga Vertov's 'kino-eye' production to rethink the epistemology of AI in filmmaking.

Author: Kim-mui E. Elaine Chan

Affiliation: Hong Kong Chu Hai College

E-mail: kmchan@chuhai.edu.hk

Bio: Kim-mui E. Elaine Chan, assistant professor of Journalism and Communication Department at Hong Kong Chu Hai College, currently teaches communication and media studies. She received her Ph.D degree in film studies from University of Kent, United Kingdom. She taught film theory, film aesthetics, film history, and digital media culture in the MFA and MA degree programmes at Hong Kong Baptist University. Her monograph entitled *Hong Kong Dark Cinema: Film Noir, Reconceptions, and Reflexivity* was published by Palgrave Macmillan in 2019. The Chinese-language edition of this monograph received in 2019 the 15th Hong Kong Biennial Awards for Chinese Literature, Recommended Prize in the Category of Literary Criticism. Her academic journals and other journal articles appear in *Journal of Chinese Cinemas*, *International Journal of Cinema*, *Hong Kong Economic Journal Monthly*, *Ming Pao*, *Hong Kong Economic Times*, *Crossover*, and *Film Bi-weekly*. Her columns are published in *Tai Kung Pao* and *Master Insight*.

Paper Abstract (3)

Toward a Posthuman Aesthetics: Deconstructing Authorship and Ideology in AI Art

Jason M Allen's AI-generated artwork won the Colorado State Fair fine arts competition yet be deprived of copyright. It seems symptomatic of a profound crisis. It shows us how our aesthetic and ethical systems, being rooted in a romantic and human centered concept of authorship since the Renaissance, are seriously challenged by new technologies.

This paper posits that the transition of AI from a procedural tool (ANI) to a generative cultural agent (AGI) constitutes a categorical shift, moving beyond assisting human expression to actively constituting a new mode of cultural production. It represents an entirely new form of cultural practice, not merely a

technological advancement. As philosopher Alice Helliwell from Northeastern University London argues, “if we can consider radical and divergent pieces like Duchamp's urinal as art proper, how can something created by a generative algorithm be dismissed?” The critical question is no longer “Is it art?” but how to understand this new paradigm.

As poststructuralism's "death of the author" (Barthes, 1967) reveals our systems' outdated romanticism, while Critical Algorithm Studies (Noble, 2018) shows AI art is a socio-technical artifact that replicates its training data's biases. The paper makes two central claims.

First, it proposes replacing the myth of the lone artistic genius with a distributed model of agency that includes the programmer, the algorithm, the dataset, and the user. Second, and more crucially, it contends that AI art is a socio-technical construct, one that can disguise and perpetuate the biases and ideologies embedded in its training data under a false veil of neutrality. Uncovering this is an essential ethical task.

By reconceiving AI as an agent of culture, this paper brings forward a critical and original framework for understanding how we will produce, control and disseminate art in an increasingly machine-co-authored age.

Author: Roger Lin

Affiliation: Hong Kong Chu Hai College

Email: rogerlin@chuhai.edu.hk

Bio: Roger Lin is an educator, researcher, and creative practitioner with over three decades of experience spanning arts management, digital media, and sound production. He holds a Doctorate in Professional Studies (Arts Management and Technology) from Middlesex University, UK, and has taught at institutions including Hong Kong Chu Hai College, Hong Kong Design Institute, and Saint Francis University, where he has led courses on cultural production, digital transformation, and creative entrepreneurship.

As a practicing artist, Dr. Lin has contributed to more than two hundred film, television, and theatre productions as a producer, director, screenwriter, composer, and sound designer. His work has been featured at international festivals such as the Berlin Film Festival, Busan International Film Festival, and the Hong Kong Arts Festival. He was also the producer, director, screenwriter, and composer for the VIU TV drama *If Love Was Not Timeless*.

In the visual arts, Dr. Lin has curated over 60 exhibitions and published art criticism in various media. His research focuses on modernizing traditional performing arts through contemporary sound design and exploring cross-cultural narratives in popular media. Recent publications include *Ultraman v Superman*:

The Metaphors in American and Japanese Pop Culture (2024) and his doctoral thesis, *Modernising Cantonese Opera through Contemporary Sound Production Design* (2020).

Organised Panel 2

Reappraising Transformations in Modern China through the Lens of AI

Cécile Armand¹, Christian Henriot², [Thorben Pelzer](#)³

¹ *French National Centre for Scientific Research*

² *Aix-Marseille University*

³ *Hong Kong University of Science and Technology*

From Computation to Interpretation: Reappraising Transformations in Modern China through the Lens of AI

While a great deal of energy is currently invested in developing highly complex and sophisticated Artificial Intelligence (AI) models, these models are not always of immediate relevance to humanities scholars, nor do they necessarily produce interpretable results. This panel shifts the focus to a crucial yet often overlooked challenge: how can such methods be applied to concrete historical questions in order to generate substantively meaningful new knowledge? And how can historians integrate these unfamiliar tools into their traditional workflows?

Our testing ground is the study of modern China—specifically, the transformation of knowledge elites from the late Qing dynasty to the early People’s Republic (1850–1950s). This period was marked by profound upheavals: the abolition of the civil service examinations, foreign intrusion and the treaty-port system, the rise of nationalism and communism, and China’s contested integration into the “family of nations.” Against this backdrop, we address two interrelated questions: (1) How can we understand the resilience of Chinese elites in this turbulent era? (2) How can we conceptualize the complex participation of Chinese actors in an emerging global order beyond the dominant “nationalism versus imperialism” or “impact–response” paradigms?

The scattered nature of the documentation and persistent national historiographical divides have long posed challenges for historians of modern China. The dominant China-centred approach, which often fostered the paradigm of “Chinese exceptionalism,” has obscured a fuller understanding of China’s long-

term historical trajectory and its integration into the globalized world. At the same time, the growing but uneven availability of digitized corpora and artificial intelligence (AI) tools, combined with the rise of transnational and global history, offers new opportunities. Yet these developments also expose historians' methodological vulnerabilities: we often lack the training to harness such technologies and must grapple with issues of scale, complexity, heterogeneous source genres, diverse languages and scripts, as well as AI biases and opacity. This panel tackles these twin issues by combining epistemological and methodological reflection with concrete case studies. The two papers presented by Thorben Pelzer and Cécile Armand demonstrate how computational methods can illuminate social transformations in China across political regimes and national boundaries, while also overcoming the limitations of earlier approaches—whether group-based analyses or biographical studies centred on famous intellectuals and scientists. Christian Henriot introduces the digital ecosystem developed by the “Elites, Networks, and Power in modern China” (ENP-China) project, designed to bridge the gap between computation and historical hermeneutics, while also mapping the challenges and avenues opened by the incorporation of large language models into historical research.

Thorben Pelzer, “Imperial Governance in the Taishū jinji-roku: Data Mining the National Diet’s Next Digital Library.” An important source of understanding the personal and institutional makeup of the Japanese Empire and its colonial environs from a Japanese viewpoint is the Taishū jinji-roku, the “Records of Public Individuals.” Overall, 17 pre-war volumes of the Records are available, leading to roughly 400,000 biographical entries. The circa 20,000 individual biographies contained in the overseas volumes of 1940 and 1943 include numerous observations that help understand the imperial governance of East Asia, including transnational entanglements between Chinese and Japanese individuals active in the Japan-controlled Sinophone regions. Given the large quantity of contained information, the Records can only realistically be parsed via automatised data mining. The paper first discusses ways of segmenting and structuring the optically recognised data output of NDLOCR, an advanced model of the National Diet Library’s “Next Digital Library” service. In the second half, the paper provides a first prosopographic exploration of the mined data using clustering techniques and related digital means of distant reading.

Cécile Armand & Christian Henriot, “The Great Talent Divergence: A Computational Reassessment of China’s Doctoral Elite (1905–1962)”. This paper investigates the trajectories of more than 4,600 Chinese PhD holders trained abroad between 1905 and 1962, drawing on dissertation catalogues

compiled by bibliographer Yuan Tongli (1895–1965) and enriched with biographical data. Employing a mixed-method approach that integrates AI-assisted data extraction with established tools of statistical analysis, data visualization, and micro-biographical portraits, it explores how these scholars' educational paths and careers were shaped by shifting national priorities, geopolitical upheavals, and the rise of U.S. academic dominance. A central contribution lies in its empirical analysis of the Communist Revolution's impact on the diverging fates of these intellectuals. While some secured positions within the People's Republic of China, the majority experienced repression or remained in exile. By moving beyond nationalist narratives of intellectual return, this study highlights diasporic knowledge production, institutional displacement, and strategies of personal survival. Ultimately, it calls for a re-evaluation of transnational intellectual mobility and its entanglements with authoritarianism, academic freedom, and global hierarchies of knowledge. Methodologically, this paper advances a hybrid approach in which computational and manual methods mutually reinforce one another, with human validation and close reading of historical narratives used to evaluate and enrich AI-generated outputs.

Christian Henriot, “Taming the Digital Dragon: A Digital Ecosystem for the Study of Modern China” introduces a historian-centred digital infrastructure designed to address the “scale paradox” of modern research: the abundance of digitized sources and the enduring need for contextual interpretation. At the core lies the Modern China TextBase (MCTB), a curated repository of over 40 corpora—newspapers, reports, archival records—enriched with metadata and provenance information. Alongside, the Modern China Biographical Database (MCBD), the Modern China Geospatial Database (MCGD), and the HistText search interface provide structured environments for linking textual, biographical, and spatial data with computational methods such as natural language processing (NLP), topic modelling, and classification. Anchored in sustainable infrastructures and collaborative practices, this ecosystem ensures transparency, reproducibility, and long-term accessibility. More than a set of tools, it constitutes a methodological intervention, demonstrating how computational approaches can amplify historical interpretation and open new scales of discovery for the study of modern China.

Organised Panel 3

Extended Distant Reading: Translation, Multimodality, and Augmented Reading

Luis Damián Moreno García, Yao Song, Jenny C.Y. Kwok

Hong Kong Baptist University

Paper 1:

Abstract:

As artificial intelligence increasingly reshapes the ways in which texts, images, audiovisual materials and interactive experiences are created, translated, and analysed, the humanities face both unprecedented opportunities and challenges. This paper interrogates the intersection of AI-driven translation and the practices of distant reading, viewing, and perceiving, a triad of methodological lenses proposed by Franco Moretti (2013), Lauren Tilton, and Taylor Arnold (2019). The availability of large-scale linguistic and multimodal datasets, coupled with powerful generative models, enables researchers to explore materials across languages, media, and geographies at scales previously unimaginable (Arnold & Tilton, 2023). Such methods may offer new insights into how different audiovisual materials travel translingually and transmedially. Yet this expansion of scale is accompanied by pressing epistemological and ethical questions. The reliance on algorithmic systems for translation and research foregrounds long-standing debates over authorship, authenticity, and interpretation (Baker, 2025), while also introducing new anxieties about ethics, bias and opacity (Li, 2023; Saunders & Byrne, 2020; Prates et al., 2019). Moreover, as AI translation systems increasingly mediate media circulation between languages and audiences, questions of fidelity, creativity, culture and

agency come sharply into focus (Cao et al., 2025; Kirk et al., 2025; Tao et al., 2024).

Positioned within the emerging discourse of digital humanities, particularly in Asia and transnationally (Arnold & Tilton, 2024), this paper takes a kaleidoscopic view of distant

reading, viewing, and perceiving in the age of AI. Rather than treating AI solely as a tool, it is

becoming a collaborator, a mediator, and at times, a constraint that forces renewed reflection

on the limits of quantification and the necessity of human judgment (Smits & Wevers, 2023).

Drawing on case studies, the paper foregrounds both the transformative potential of AI for

enabling more plural, comparative, and accessible forms of linguistic and cultural transfer

study, and the critical need for ongoing ethical vigilance.

By examining how AI complicates and extends the practices of distant engagement

with audiovisual and multimodal creations, the paper contributes to debates at the intersection

of translation studies, media theory, and digital humanities (Frontoni et al., 2024).

In tracing

both the possibilities and the limits of AI-assisted translation research, it aims to demonstrate

how scholarly practice in the age of AI must negotiate the double demand of scale and

critique, mapping broader fields while maintaining reflexive awareness of the interpretive

stakes at hand.

Paper 2:

From Characters to Calligraphy: Multimodal Distant Reading of Chinese Poetry in the Age of AI

This paper examines how the convergence of large-scale cultural databases and multimodal AI analysis reshapes our understanding of Chinese poetry across history. Building on Franco Moretti's concept of distant reading and extending it toward visual and performative dimensions, I propose a framework for multimodal distant reading that allows poetry to be perceived not only as text, but also as sound, image, and embodied practice.

Drawing on the China Biographical Database (CBDB) and related digital corpora, I situate poetic texts within their broader social, cultural, and historical networks. At the same time, I employ natural language processing, image recognition, and handwriting analysis to examine how poems circulated through calligraphic manuscripts, anthologies, and performance. By integrating semantic, phonological, and visual dimensions, this approach attends to meaning, sound, and form together, bridging computational analysis with long-standing interpretive traditions in Chinese literary scholarship.

Case studies include stylistic shifts across dynastic transitions and the impact of political upheavals such as the An Lushan Rebellion. I also explore the visual features of poetic calligraphy and their relationship to textual meaning, showing how handwriting analysis and image recognition technologies can illuminate the material and aesthetic dimensions of poetic transmission.

In highlighting both the insights and the limitations of multimodal AI methods, this paper argues that large-scale cultural analytics must remain accountable to the ethical and epistemological challenges posed by cultural memory and aesthetic heritage. By combining methodological innovation with close engagement in Chinese literary culture, it demonstrates how multimodal distant reading can expand the scope of literary history while sustaining the critical reflexivity central to humanistic inquiry.

Paper 3:

Augmented Reading: Retrieval-Augmented Workflows for Literary Historiography in the Age of AI

In digital humanities, the metaphor of distance has shaped how scholars imagine the relationship between scale, evidence, and interpretation. Close reading privileges attention to singular texts; distant reading (Moretti) emphasizes patterns across large corpora; distant viewing (Tilton and Arnold) extends this to visual and media archives. Each has functioned not only as a method but as a conceptual touchstone, a way of asking what becomes visible — and what is lost — when mediation is scaled and reframed. Yet as artificial intelligence and large language models increasingly structure our engagement with cultural data, we are entering a new interpretive terrain that neither close, distant, nor viewing fully captures. This paper proposes Augmented Reading as a third mode of literary interpretation: a practice in which human analysis is scaffolded by retrieval-augmented generation (RAG) workflows that reshape the evidentiary surface of cultural materials.

Augmented Reading differs from earlier metaphors in three ways. First, rather than a question of proximity (close vs. distant), it names a relationship of

collaboration: the critic reads alongside and against machine-mediated retrieval, using AI systems not as authorities but as scaffolds that surface connections, contexts, and resonances. Second, it highlights the workflow dimension of contemporary AI research. In contrast to the one-off distant reading chart or visualization, augmented reading depends on a repeatable pipeline: retrieval of relevant archival fragments, generation of contextual interpretations, error audits to expose bias, and iterative refinement. Third, it insists on methodological accountability. Because retrieval systems are subject to selection bias, data imbalance, and opacity, augmented reading requires scholars to document how corpora are prepared, how retrieval is configured, and how interpretive claims are constrained by machine mediation.

To demonstrate the potential and limits of augmented reading, the paper presents a case study of Irish Troubles poetry (1960s–1990s). This corpus is uniquely situated for AI-assisted interpretation: its poems register deep layers of cultural trauma, memory, and political conflict, yet they are often entangled with paratexts, testimonies, and archival events that exceed the boundaries of the poems themselves. Using a prototype workflow (AR-TRACE: Augmented Reading via TRACE), the project retrieves materials from the CAIN archive of Northern Irish conflict, pairs them with poetic texts, and prompts LLMs to generate contextual framings of themes such as mourning, resistance, and community fracture. Rather than treating the model's outputs as interpretive truths, the workflow treats them as evidentiary scaffolds — points of entry for humanistic analysis. For example, a retrieved cluster linking a Heaney elegy to contemporaneous accounts of Bloody Sunday does not substitute for close reading of the poem, but it augments the reading by situating affective registers within a broader temporal and cultural frame.

The case study also foregrounds the risks of augmented reading. Retrieval bias may privilege certain events over others; generative summaries may flatten or distort affective nuance; and over-reliance on machine scaffolding can obscure the singularity of literary expression. These risks are not incidental but constitutive, raising urgent ethical questions about authority, authenticity, and the politics of cultural memory. Accordingly, the paper argues for embedding error audits and protocol documentation into augmented reading workflows, so that interpretive claims remain accountable and reproducible.

By formalizing augmented reading, the paper contributes to ongoing debates in digital humanities about the interpretive limits of machine-assisted analysis. It situates the proposal in dialogue with Moretti's call for distant reading, Tilton and Arnold's framework for distant viewing, and emerging discussions of "distant

perceiving” in the age of AI. In doing so, it makes three claims. First, that augmented reading provides a vocabulary for understanding how scholars might responsibly collaborate with AI without collapsing interpretive authority into the machine. Second, that retrieval-augmented workflows offer a method for bridging cultural analytics with literary historiography, allowing trauma narratives and cultural memory to be studied at scale while retaining contextual nuance. And third, that by aligning itself with the concordance tradition of Josephine Miles, augmented reading extends the genealogy of DH methodologies into the present AI moment, showing how longstanding practices of scaffolding human reading with machines can be reimagined today.

Ultimately, Augmented Reading is less a replacement for close or distant reading than a complement to both. It offers scholars a way to inhabit the new epistemological space opened by AI: a space where perception is mediated, where interpretation is scaffolded, and where the task of the critic is not to surrender judgment to machines but to document, contest, and reframe what machine-assisted perception makes visible.

Short Papers 1: LLMs as Critical Instruments in DH

Literary Canons and Algorithmic Framing: Analysis of LLM-Generated Paratexts

Mengyuan Zhou

Department of Translation, The Chinese University of Hong Kong

As large language models (LLMs) increasingly mediate how readers encounter literature through auto-generated summaries, keywords, and promotional descriptions, they begin to shape not only how books are discovered, but also how they are valued. These forms of AI-generated paratext, while often overlooked, now serve as the initial point of contact between global readers and literary works. In this context, the literary canon is no longer constructed solely by critics, institutions, or publishers, but also by algorithms.

This pilot project examines how LLMs participate in the framing of literary prestige. It focuses on a seemingly simple but culturally significant form of output: the book description. The central research question asks whether these machine-generated texts reflect existing cultural hierarchies or participate in reshaping

them when applied to different literary traditions. The study compares descriptions of two groups of contemporary novels. The first group includes works by Nobel Prize laureates in literature since the year 2000, representing texts that have been institutionally recognized at the highest level of global literary prestige. The second group includes works from the Global South that have received major national or regional literary prizes.

Although both groups are marked by literary recognition, they circulate through different mechanisms of validation. By comparing how LLMs describe these works, the study explores whether some novels are more likely to be framed in terms of universality, authority, and timelessness, while others are associated with locality, cultural specificity, or regional context. The project also considers how different input formats influence the model's output, including metadata-only prompts and platform-style prompts that more closely resemble commercial or public-facing summaries.

Rather than aiming for comprehensive coverage, this pilot study offers a focused, small-scale investigation designed to establish a reproducible method and to pose larger conceptual questions. Using a controlled set of twenty novels, the project generates multiple descriptions under two prompt conditions and analyzes the results using topic clustering, lexical framing indices, and consistency metrics. The analysis investigates whether thematic patterns and framing tendencies are consistent across generations, and how these patterns relate to the institutional or regional identity of the original works.

While the study is limited in scope, it establishes a flexible framework for future inquiry. It contributes to the growing body of research that combines cultural analytics with critical AI studies and introduces new ways of understanding how literary value is encoded and circulated through algorithmic systems.

Ultimately, the study argues that cultural sensitivity must become a central concern in the development and deployment of generative AI. As LLMs increasingly produce the paratexts that shape global reading experiences, we need better tools to understand how these systems frame literature, whose narratives are being amplified, and what implicit hierarchies are being reproduced. The literary back cover, once written by editors or marketers, has become a new site of algorithmic interpretation. As scholars, educators, and readers, we must ask what forms of knowledge and authority are embedded in these generated texts, and how they affect the way literature is encountered in a digital age.

Algorithmic Critique: Prompt-sensitive analysis of how LLMs deploy theories

Donghoon Jung

KAIST

This study examines LLMs' capabilities and inclinations as literary critics. It will address questions such as how AI-generated literary criticism is different from human practice, whether they have preferred schools of critical theory, and how their built-in critical biases shape their claims. We define prompt design as specifying the interpretive rules for evidence, warrants, and permissible claims, and we foreground output sensitivity to prompt variables as a central object of inquiry rather than a mere implementation detail. This approach offers a test case for how generative AI models operationalize interpretation and reexamines how the field understands critical authority, originality of perspective, and interpretive plurality. By comparing a corpus of human criticism with LLM-generated texts and combining distant and close reading, the study measures patterns, perspectives, and interpretations of AI models. It then proposes prompt-design guidelines based on our analysis and maps the possibilities and limits of AI criticism to suggest how literary criticism may be repositioned as AI tools enter the field. LLMs are capable of producing prose that constitutes literary criticism. They are known for surface-level polish and coherent structure, but still struggle with layered semantic work, while also showing a tendency to privilege Western theory and to reproduce disciplinary commonplaces such as recurring arguments and canonical citation chains. Yet we lack concrete evaluations of how these abilities operate and where their limits lie. To address this, we combine distant reading of macropatterns with close reading of textual detail. The research proceeds along four axes. First, it examines whether LLM criticism shows regularities in narrative mode, lexical choice, and theoretical reference that distinguish it from human criticism, thereby identifying an AI-specific interpretive frame. Second, it assesses under- or over-representation biases in the representation of feminism, queer theory, postcolonial and decolonial studies, critical race theory, ecocriticism, and disability criticism, and analyzes how issues of gender, sexuality, race, class, disability, and the environment are represented in the process. Third, it systematically varies prompt instructions for the same work to evaluate the consistency of claims and conclusions and to track shifts in tone and focus. Fourth, drawing on these results, it proposes prompt-design guidelines and tests the potential for complementary integration between human and AI criticism. The methodology follows a sequential pipeline: data construction, AI-critique

generation, distant analysis, and close reading. We fix the corpus at five English-language short stories from 1900 to 1922 (the modernist period featuring diverse style, with copyright clearance as an added merit), pairing two canonized works with three less mainstream Anglophone stories to diversify authorial and cultural vantage points: James Joyce, "The Dead" (1914); Katherine Mansfield, "The Garden Party" (1922); Sui Sin Far (Edith Maude Eaton), "Mrs. Spring Fragrance" (1912); Pauline E. Hopkins, "Talma Gordon" (1900); and Zitkala-Ška (Gertrude Bonnin), "The Soft-Hearted Sioux" (1901). For each work, the study collects journal articles, chapters from scholarly books, and single-authored monographs and book-length criticism. The theoretical lenses applied in each document are tagged as metadata to construct work $\times$ lens subcorpora. The target is at least thirty items per work, for a total of 150. We define prompt design as specifying the interpretive rules for evidence, warrants, and permissible claims. Because AI-produced criticism already circulates in scholarly discourse, output sensitivity to prompt variables is a central object of inquiry rather than an implementation detail. We therefore generate approximately 1,000-word AI critiques via API calls to snapshots of four models (claude-opus-4, gemini-2.5-pro, qwen-max, gpt-5). Prompts are implemented under three conditions that vary the degree and kind of interpretive constraint. In the basic condition, the model critiques the work as a whole without a specified theoretical lens and selects topics, structure, and citation strategy. In the direct-instruction condition, a theoretical lens is fixed as the analytic framework, within which topic selection, argumentative structure, and citation strategy proceed. In the implication-guided condition, we specify an analytic focus and an object of observation, omit explicit lens naming, require textual quotations as primary evidence, and require that concepts and categories be derived from that evidence. This design tests the stability, drift, and bias of interpretations across conditions and treats prompt sensitivity as a scholarly concern in its own right. In the distant reading stage, we compare human- and AI-criticism corpora to quantify biases in patterns and perspectives. For patterns, we cluster criticism texts using stylometry with most-frequent-words, extract seventeen linguistic features for identifying primary stylistic features, and use principal component analysis to visualize stylistic distribution and overlap. For perspectives, TF-IDF quantifies lexical overuse and avoidance and derives differential keywords, GPT-5 topic extraction generates document-level topics that we compare across work $\times$ lens combinations, and embeddings computed with text-embedding-3-large measure semantic distance and similarity among criticism texts. Together, these

procedures translate stylistic and topical regularities into testable quantities and make biases in patterns and perspectives measurable. In the close reading stage, we qualitatively examine how argumentation operates within the texts. For each work × lens × prompt condition, we excerpt representative and contrastive cases, and annotate the propositions, evidence, and the development of interpretation at the paragraph level. We trace the role of quotation selection and placement in supporting claims and where and how theoretical concepts are invoked. The basic, direct-instruction, and implication-guided modes are contrasted under consistent criteria to assess lens appropriateness, the suppression or recurrence of summary regression, the pathways of concept derivation, and shifts in tone and focus. By combining the results of distant and close reading, the study offers condition-specific prompt guidelines. For each prompt mode, we offer systematized lens specification, principles for constructing claims, quotation-level requirements, summary-limitation rules, and guidelines for articulating the connection between evidence and claims. Collectively, these materials aim to increase understanding of how LLMs behave as critics and to support more informed choices about their use in research, teaching, and publishing. Verifying the necessity of human criticism and assessing both the value and limitations of AI-human collaboration, this study contributes to redefining the role and orientation of literary criticism as AI reshapes the environment of scholarly knowledge production.

Extending scholarly databases with LLMs: opportunities and challenges

Donald Sturgeon

Department of Computer Science, Durham University

The advent of increasingly sophisticated deep learning models – in particular, practical generative Large Language Models (LLMs) capable of producing fluent, human-like text – presents opportunities and challenges for large-scale digital analysis of historical writing, as well as for digital libraries and other systems that mediate human access to historical primary source materials. Generative tasks starting with – but by no means limited to – translation, summarization, and question answering provide extensive opportunities for a variety of automated contextual assistance for navigation and reading, as well as for extraction of many types of information that would previously require human involvement and/or the training of special-purpose models to obtain.

This paper provides an overview of recent progress and ongoing work integrating a variety of modern AI techniques into the Chinese Text Project (<https://ctext.org>), a widely used digital library of premodern Chinese written works. Recent concrete applications of NLP and AI to this project include in particular: 1) augmentation of the content of a historical knowledge graph by extracting precise machine-readable data from natural language descriptions found in historical sources; 2) contextualization of the texts through automated and semi-automated annotation; 3) use of generative AI to provide precisely referenced multilingual natural language contextualization for historical entities leveraging primary source evidence; and 4) the application of embedding-based retrieval for concept and similarity search, as well as text reuse identification, across large volumes of text. Using concrete examples encountered during development, this paper considers how more traditional digital approaches can be productively combined with the use of modern AI techniques to improve outcomes and address limitations common to many contemporary LLMs. In particular, this paper explores the extent to which explicit contextualization can help reduce the degree of hallucination in content generation based on premodern primary source materials. By integrating data previously curated through primary source text annotation and knowledge graph construction into LLM text generation, this work demonstrates how reducing contextual ambiguity can help enable more reliable and trustworthy LLM-generated contextualization of historical primary source content.

LLM-Mediated Knowledge Graphs for Distant Reading of Urban Perception

Tong Shao¹, Lei Wang¹, Jiaxin Guo¹, Jie He²

¹ *School of Architecture, Tianjin University, Tianjin*

² *School of Architecture, Harbin Institute of Technology(Shenzhen)*

AI-Mediated Knowledge Graphs for Distant Reading of Urban Perception

Abstract This study advances urban spatial perception research by moving beyond conventional physical indicators to foreground public subjective experience, addressing the spatial bias and limited interpretability that characterize approaches reliant on user-generated content or static visualization. We propose a framework that integrates multimodal large language models with knowledge graphs within the digital humanities paradigm of distant reading, enabling large-scale, structural interpretation of urban perception narratives.

Using Beijing, a city rich in heritage and rapid modernization, as a case study, we generated structured perceptual texts from Baidu street-view imagery with an LLM and operationalized thirty perceptual indicators. After standardization, hierarchical clustering, DBSCAN, and K-means were used to segment the corpus into high, medium, and low perception categories. Texts underwent tokenization, domain dictionary mapping, and synonym normalization, followed by construction of co-occurrence matrices with a sliding window. Semantic networks were visualized in VOSviewer and Pajek and analyzed with community detection and centrality measures. The resulting knowledge graph reveals a multilayered semantic architecture in which core clusters of physical and spatial descriptors such as street view, architecture, and vegetation provide a descriptive backbone, while peripheral clusters extend into environmental and functional dimensions such as ecology and vitality and into aesthetic and emotional registers such as artistic and diverse; low-perception texts foreground discourses of lack and ordinariness, and marginal modules expose interpretive limits of LLMs under ambiguous imagery or contextual uncertainty. This framework advances digital humanities by demonstrating how distant reading of urban perception texts—operationalized through AI-mediated generation, clustering, and semantic graphing—can reveal macro-level patterns of how urban heritage spaces are cognitively framed. Conceptually, the framework treats LLM-generated perceptual texts as cultural artifacts that crystallize collective imaginaries of heritage cities, and practically it offers heritage-sensitive insights for urban planning by rendering perceptual contrasts and methodological boundaries explicit.

Gender Bias in LLMs: Comparative Study of Global and Local Models in East Asia

Jiwoo Choi, Seonwoo Ahn, Tongxin Zhang, Seohyon Jung

KAIST

Large Language Models (LLMs) produce texts that reflect and reconstruct sociocultural norms. In particular, their gender representation patterns can directly reveal societal values, making them a significant subject of analysis across various disciplines. However, these studies primarily operate within an English-versus-non-English framework or an English-centric perspective, leaving room for more nuanced exploration of differences among similar Northeast Asian cultural spheres.

Past research has explored LLM gender bias by introducing explicit and implicit

bias frameworks or by conducting multilingual comparisons. However, these studies have key limitations; first, they lack analysis of how the specific features of different languages reveal bias in distinct ways. For example, choices in Chinese gendered pronouns, gender markers in Korean, and Japanese honorifics each expose gender bias differently. Second, existing research tends to treat non-English-speaking areas as a single, uniform group, missing the variations in gender norms and communication strategies across different languages and cultures. Third, evaluations have primarily focused on global models like GPT or Gemini, largely ignoring local models that better reflect cultural expectations and the strategies used by developers. Models such as China's Qwen, Japan's ELYZA, and Korea's HyperCLOVA may show unique gender biases compared to global models. This is because while global models are primarily trained on English data and Western-centric values, local models reflect native language data, policies, and regulations. This allows them to demonstrate how social gender norms and political and cultural contexts are incorporated into the model.

This study aims to bridge this gap by focusing on the three major Northeast Asian languages, Chinese, Japanese, and Korean, with English as the reference baseline. The following research question is how global LLMs and region-specific LLMs differ in their representation of gender in prompts of the same language. To support this main question, two subsidiary questions are established. First, we examine how explicit bias and implicit bias manifest in each of the three languages: Chinese, Japanese, and Korean. Second, even when models produce identical outputs, the process of justifying or explaining these outputs, specifically their reasoning strategies, is analyzed to identify differences based on language and model.

To explore these research questions, this study adopts the distinction between explicit bias and implicit bias as its theoretical framework for analysis. Explicit bias refers to instances where a model directly selects a specific gender or overtly links occupation with gender, while implicit bias denotes the tendency for a model to subtly construct different roles or characteristics for characters based on gender within narratives or descriptions. Building upon this framework, this study adds a comparison between global and local models to comprehensively explore how bias manifests at the intersection of linguistic structures, cultural norms, and the policy contexts reflected by the models.

This study compares global models with region-specific models across three languages: Chinese, Japanese, and Korean. Global models include GPT-5, Gemini, and Claude, while region-specific models feature China's Qwen, Japan's

ELYZA, and Korea's HyperCLOVA. This selection creates a solid comparative basis since each model reflects different social norms and policy directions. Data collection consists of an organized set of prompts, using iterative sampling for each prompt. The prompts cover a wide range of contexts such as professions, story scenarios, and everyday discussions. Prompts are collaboratively designed with the participation of native speakers of each language or speakers who can read and write the short sentences used in each language prompt. The back-translation process minimizes semantic distortion between languages. The limitation of lacking Japanese native speakers is addressed by revising the draft after external consultation, and cross-validation is performed through the back-translation process, which is identical to that used for Korean or Chinese. This approach enables us to observe how models select gender, construct narratives, and provide explanations for specific outputs.

The analysis consists of a three-stage process. First, at the morphological and lexical level, it explores explicit bias by analyzing whether the model selects specific gender markers or associates occupations with particular genders. Second, at the discourse and narrative level, it identifies implicit bias by examining the roles assigned to characters within narratives and whether specific genders are repeatedly placed in particular contexts. Third, at the justification and inference level, it examines how the reasons or reasoning processes explaining the same output differ, revealing differences in the gender norms inherent within the model. Experimental design reflects each language's unique gender markers and discourse conventions as a principle. For example, in Chinese, the use of 他/她 and the gender-neutral expression 'TA' is a key point of analysis; in Korean, gender markers preceding job titles like 여교사/교사 and gendered expressions based on honorifics; and in Japanese, honorifics and titles used when referring to occupations (～さん, 君, ～ちゃん, etc.). Through this design, this study aims to empirically identify the specific manifestations of gender bias formed by the intersection of linguistic structure, cultural norms, and model policies, going beyond a simple comparison of output results.

This study empirically demonstrates that gender bias in LLMs is not homogeneous but is formed through the intersection of language structure, cultural norms, and model alignment policies. This result contributes to AI ethics discourse by extending gender bias research beyond an English-centric perspective that treats non-English-speaking regions as a single block, elevating it to the level of cultural text analysis. Further research could deepen the discussion by exploring broader comparisons, including other regional languages,

and examining the reproduction of LLM bias considering intersectionality beyond a single gender axis.

Inferring Bon-gwan (本貫) in the Late Joseon Dynasty: Digital Humanities with AI

HANA LEE^{1,2}, SANGWOO KANG¹

¹ Graduate School of Data Science, Pusan National University, 46241, Busan, Korea

² The Department of History, Pusan National University, 46241, Busan, Korea

Historical records are inevitably subject to omission and damage for various reasons. Consequently, key information about historical facts must often be inferred from partial evidence in order to understand the societal context of the time.

In this study, we employ digital humanities methodologies to address the challenges of such information loss. Specifically, we attempt to infer absent historical records by predicting individuals' *bon-gwan* (本貫) information using AI models. The *bon-gwan* (本貫), which refers to the clan's place of origin associated with its progenitor (始祖), was a crucial indicator for understanding a person's lineage, social status, and kinship relations during the late Joseon Dynasty.

1. Data

For this research, we utilized data on *eum-gwan* (蔭官) officials from the Joseon Dynasty, collected and organized by the Academy of Korean Studies. The term *eum-gwan* (蔭官) refers to officials who entered government service through the hereditary privilege known as the *eum-seo* (蔭敍) system. This system granted positions to the sons and descendants of meritorious elites, high-ranking officials, and members of the royal family without requiring the state civil service examination. The dataset contains systematically curated information on these individuals, including names, birth and death years, *bon-gwan*, fathers' names, courtesy names (字), pen names (號), official career trajectories, and kinship ties including fathers(父), biological fathers(生父), grandfathers(祖父), maternal grandfathers(外祖父), and fathers-in-law(妻父).

The data was compiled from multiple genealogical and bureaucratic registers such as *Eum-an* (蔭案), *Jinsinbo* (摺紳譜), *Muneumjinsinbo* (文蔭縉紳譜), *Mubo*

(武譜), *Jinsinmubo* (縉紳武譜), and *Muneumbo* (文蔭譜). Including variant editions, the information was collected from a total of 11 volumes of records. The dataset comprises 11,122 records, including duplicates, for individuals whose birth years range from 1722 to 1904, placing them in the late Joseon period. Based on this dataset, we designed a predictive model that estimates *bon-gwan* when provided with partial biographical information, such as their name and their father's name.

2. Data Preprocessing

The raw dataset contained a significant number of missing values and duplicate entries for the same individuals. For example, the number of recorded relatives per person ranged from as few as 1 to as many as 42, with an average of 6.94, reflecting significant variation. Accordingly, rigorous preprocessing was necessary.

First, the dataset was decomposed into three interrelated tables: (1) basic individual information, (2) kinship information, and (3) officeholding records. A unique identifier was assigned to link these tables relationally.

Second, all input values were converted into a numerical format using label encoding and Hangul(Korean)/Hanja embeddings. Specifically, *Bon-gwan* and kinship categories were label-encoded; names were decomposed into syllables and converted into Unicode; and office titles were embedded using word2vec. Third, the same individuals often appeared multiple times across the dataset, and these duplicate records sometimes contained conflicting values due to recording errors. Since a uniform method was insufficient for filtering these duplicates, it was necessary to determine which combinations of matching values could confirm that they referred to the same person. After analyzing various data combinations, we established the following 6 criteria for identifying identical individuals: (1) identical Chinese-character names, birth years, and fathers' Korean names, (2) identical Korean names, birth years, and fathers' Korean names, (3) identical Chinese-character names, birth years, *bon-gwan*, and kin names, (4) identical Chinese-character names, *bon-gwan*, and fathers' Korean names, (5) identical Chinese-character names, *bon-gwan*, and fathers-in-law's Korean names, (6) identical Korean names, fathers' Korean names, and kin names.

After preprocessing, we removed records with missing *bon-gwan* values (the target variable) and the duplicates identified using the criteria above. We then experimented with various data compositions, such as using the dataset after removing all remaining missing values or using only a subset of features.

3. Modeling and Result

For modeling, we employed both machine learning tree-based models (XGBoost, CatBoost, LightGBM) and deep learning architectures (MLP, SVM, autoencoder, TabNet, TabTransformer).

The most effective configuration involved 9,289 individuals, using Unicode embeddings of the initial, medial, and final phonetic components of each syllable in both the individual's Korean name and their father's Korean name.

Unexpectedly, the inclusion of kinship and career information did not improve model performance. The ability to accurately predict *bon-gwan* from name data alone is likely attributable to the historical practice of using *dollimja*—generation names. This tradition involved incorporating a specific character into a personal name based on the clan's generational naming cycle (行列), creating a strong correlation between name patterns and clan affiliation.

The best-performing model was XGBoost, which yielded an accuracy of 0.800921, an F1 score of 0.730775, a precision of 0.802985, and a recall of 0.705552. With this model, the probability of the correct *bon-gwan* being within the top 3 predictions was 0.927503, and within the top 5 was 0.963751. These results were obtained after removing *bon-gwan* with fewer than 20 instances from the training data.

4. Further Analysis and Discussion

To further improve performance, we experimented with tree model ensembling and stacking methods. The best result from these attempts was a stacking model using an MLP with two hidden layers, which achieved an accuracy of 0.796318 and an F1 score of 0.730563—both slightly lower than the standalone XGBoost model.

Among the deep learning models, TabNet yielded the highest accuracy at 0.3349 with an F1 score of 0.1394, indicating that it effectively failed to make meaningful predictions. The poor performance of deep learning models in this study is likely due to the insufficient size of the dataset. With a range of 5,901 to 9,289 instances and only 8 to 15 features, the dataset was too small for these complex models to learn effectively.

5. Conclusion and Future Work

This study demonstrates the potential of applying digital humanities methodologies to infer missing information in historical records. By integrating computational prediction with historical inquiry, we show that *bon-gwan* inference is feasible even with fragmented data. Future research will aim to expand this approach to predict other missing information from the dataset, such as political faction affiliations (黨派) and the surnames and *bon-gwan* of maternal and paternal relatives.

Tea Break & Poster Presentation

Seeing with Algorithms: AI Visualizations of Chinese Classical Poetry

Xiyu Mao

The University of Hong Kong (HKU)

In the era of generative artificial intelligence, the boundaries of literary reading and interpretation are being fundamentally reconfigured. In this project, I investigate how state-of-the-art AI image generators—specifically MidJourney, DALL·E 3, and Stable Diffusion—“perceive” and visualize canonical Chinese classical poetry, offering both a distant and close reading of poetic imagery across languages and modalities. My research addresses two core questions: How does machine vision transform poetic metaphor into visual representation? And what happens to meaning as it travels through translation, prompt engineering, and algorithmic interpretation?

Building on recent developments in digital humanities and computational literary studies, I select ten widely-anthologized poems, each paired with authoritative English translations, to serve as the corpus. Both Chinese originals and English translations are systematically used as prompts for multiple AI platforms, generating a diverse gallery of visual outputs. Each image set is analyzed through qualitative close reading and semiotic frameworks, revealing how machine-generated imagery reflects or departs from the poems’ symbolic universe. I extend this analysis with quantitative tools: using the CLIP interrogator, I measure text-image alignment and employ embedding models (BERT, CLIP) to transform text and image into a shared semantic space. Through dimensionality reduction techniques (t-SNE, UMAP), I produce embedding maps that make visible the semantic “distances” and clusterings between poetic concepts, translations, and their algorithmic visualizations. A distinctive feature of my project is its commitment to public engagement and cross-cultural comparison. I design and deploy a bilingual interactive website, which hosts the AI-generated poetry-image gallery, embedding visualization, and an online audience study. In this study, participants from varied linguistic and cultural backgrounds are invited to match images to lines of poetry, rate the resonance and visual accuracy of each AI output, and share qualitative reflections. This large-scale, participatory “distant viewing” experiment foregrounds not only the machine’s perception, but also the social imagination of AI-mediated aesthetics.

Preliminary results point to several significant findings. First, the translation and

prompt language decisively influence the AI's visual "reading," sometimes preserving, sometimes transforming, and at times distorting traditional metaphors—particularly those grounded in Chinese-specific cultural and sensory contexts. Second, embedding visualization uncovers both expected convergences and surprising semantic gaps between human and machine perception, charting new territory for comparative and multimodal poetics. Third, audience responses reveal diverse pathways of interpretation, suggesting that AI-generated visualizations can both reinforce and productively disrupt conventional readings of classical poetry.

By bridging distant reading/viewing with close, qualitative analysis, my research demonstrates the potential of multimodal digital humanities to expand the horizons of literary study. My methodology, combining generative AI, embedding visualization, and audience-centered analysis, provides a model for rethinking cross-cultural literary interpretation and human-machine collaboration in the age of artificial intelligence.

LLMs and the Translation of Culturally Loaded Words in Dream of the Red Chamber

Jiayuan Di

East China University of Science and Technology, School of Foreign Languages, Shanghai, China

This study examines how large language models (LLMs) handle the translation of culturally loaded words in Dream of the Red Chamber (《红楼梦》) from Chinese into Japanese, a task that epitomizes the challenges of cross-cultural knowledge transmission in the age of AI. Using the authoritative bilingual edition translated by Ito Shōhei, we constructed a dataset of 500 representative expressions categorized into five cultural dimensions: linguistic, material, social, religious, and ecological. Eight state-of-the-art LLMs—including ChatGPT-4.5, DeepSeek-V3, Claude Sonnet 4, Gemini-2.5, and Qwen3—were systematically evaluated through a mixed-method approach combining automatic metrics (BLEU, COMET, BERTScore) with human evaluation (MQM framework).

Research Process

This study adopted a mixed-method design to evaluate the performance of large language models in translating culturally loaded words from Dream of the Red Chamber into Japanese. First, we selected 500 representative sentences from the bilingual edition translated by Ito Shōhei, categorizing them into five cultural

dimensions: linguistic, material, social, religious, and ecological. Second, we tested eight state-of-the-art LLMs—such as ChatGPT-4.5, DeepSeek-V3, Claude Sonnet 4, Gemini-2.5, and Qwen3—by prompting them to generate Japanese translations. Third, translation outputs were assessed through both automatic metrics (BLEU, COMET, BERTScore) and human evaluation based on the MQM framework, covering dimensions such as fluency, accuracy, cultural appropriateness, and stylistic consistency. This multi-layered evaluation allowed us to compare model performance across cultural categories and identify their translation strategies, strengths, and shortcomings.

Results

From the perspective of cultural categories, ecological and religious terms obtained the highest scores, indicating relatively stable cross-cultural semantics. Social and material terms ranked in the middle: the former often suffered from mismatches in honorific and etiquette systems, while the latter lacked adequate cultural annotations, leading to semantic loss (e.g., literal translations of terms such as silver-thread noodles). Linguistic terms received the lowest scores, as idioms, parallel expressions, and literary allusions frequently caused semantic drift and stylistic distortion, highlighting the models' limitations in handling highly condensed and culturally embedded language.

From the perspective of model performance, ChatGPT-4.5 and DeepSeek-V3 showed the strongest results, excelling in fluency and semantic alignment though still struggling with deep cultural fidelity. o4-mini and Gemini-2.5 performed at a moderate level, producing natural but often simplified translations. Claude Sonnet 4 remained steady but conservative, lacking cultural depth. By contrast, DeepSeek-R1 and Qwen3 models ranked lowest, with frequent mistranslations in linguistically and socially dense contexts. Overall, the results indicate that while LLMs demonstrate strong fluency in surface generation, their ability to faithfully convey cultural meanings remains limited.

Discussion and Implications

By situating literary translation within the framework of distant reading and computational evaluation, this study highlights both the potentials and limitations of AI in mediating classical Chinese culture across languages. The findings suggest that while LLMs can serve as powerful tools for cultural analysis and distant translation, the faithful transmission of culturally loaded texts still requires human interpretive intervention.

QL Study of Translator Identity Using LLM: Chinese Ver of My Brilliant Friend

Xu Shiyi

Xu Shiyi

This study adopts quantitative linguistics as its theoretical framework and employs the Gemini 2.5 model to perform multidimensional linguistic feature extraction and quantitative analysis on two Chinese translations of Elena Ferrante's novel *My Brilliant Friend*, translated by Chen Ying who is from Mainland China and Li Jingyi who is from Taiwan China, for the purpose of translator identity determination.

After text preprocessing, the study applies a hierarchical Prompt engineering approach, designing multi-level, task-oriented instructions to fully leverage the feature extraction capabilities of the large language model. At the lexical level, the model is guided to extract and count high-frequency words and key lexical chunks in both translations, analyzing lexical diversity, lexical density, and fidelity to the source vocabulary. At the syntactic level, the model quantifies sentence length, syntactic complexity, and the frequency of subordinate clauses. At the semantic and affective level, the model analyzes differences in emotional expression and tone handling between the two translators based on sentiment-related vocabulary and mood markers. At the discourse level, the model extracts cohesion devices, discourse markers, and paragraph structures to comprehensively characterize the translators' strategies in textual organization. To enhance transparency and interpretability, the study incorporates chain-of-thought reasoning, allowing the model to decompose its inference process step by step and explain the basis for its feature recognition at each stage, thereby avoiding "black-box" outputs. This approach not only increases the reliability of results but also provides theoretical support for fine-grained analysis of translation style differences.

After feature extraction, the study further applies clustering analysis and classification algorithms to statistically model and visualize the linguistic features of the translations. Dimensionality reduction techniques, such as principal component analysis (PCA) or t-SNE, are used to visualize the differences between the two translators in a multidimensional feature space, intuitively revealing style distributions. Quantitative indicators are then employed to assess the stylistic differences between the translators. Finally, machine learning algorithms are used to build a translator identity prediction model to identify and predict the corresponding translator for each text.

The results indicate that Chen Ying's translation tends to preserve the syntactic complexity of the source text, whereas Li Jingyi's version favors concise and fluent Chinese expressions. And complex sentence structures, alternation of long and short sentences, and selective translation of certain cultural terms in Chen Ying's translation contrast sharply with the simplified sentences and straightforward expressions in Li Jingyi's translation. Significant differences are also observed in lexical choices and emotional tendencies between the two translations.

Large language models provide a novel and efficient quantitative approach to translator identity determination, enabling rapid extraction and quantification of stylistic features from large volumes of text, and complementing traditional manual analysis. And by analyzing the two translations of *My Brilliant Friend* using large language models, it is possible not only to reveal the translators' stylistic and identity characteristics but also to provide an important empirical case and theoretical support for the development of language research in the era of digital intelligence. This study offers new perspectives and technical references for translator identity research.

Co-Reading: A Human–AI Co-Reader Media System for Poetry–Emotion–Color

Iro Lim^{1, 2}, Byungjun Kim^{1, 2}

¹ *Cultural Informatics, Graduate School of Korean Studies, The Academy of Korean Studies, Republic of Korea*

² *The Korean Association for Digital Humanities (KADH)*

This study proposes *Co-Reading*, a multimodal media system that functions as a Human–AI *Co-Reader*, enabling humans and artificial intelligence to share interpretive environments and transform literary texts into color-based visual representations.

Traditional close reading offers interpretive depth by attending to the linguistic and narrative layers of individual texts but is limited in scale, while distant reading analyzes large corpora to reveal macro-level literary patterns but risks neglecting the affective and sensory texture of single works (Moretti, 2013). This research introduces a third mode of reading that integrates the depth of close reading with the scalability of distant reading—a mode materialized and made tangible through the *Co-Reading* system.

While collaborative reading typically refers to multiple human readers sharing the same document, Pearson et al. (2012) demonstrated its extension into digital environments by developing a collaborative system that enables multiple users to navigate a text simultaneously. This study advances the notion of collaborative reading by extending it to human–AI interaction, shifting the focus from shared spatial navigation to shared interpretive experience. A system such as Verse by Verse (Uthus, et al., 2021), in which an AI reads a user-written line and computationally generates the next, suggests that AI has the potential to become both co-creator and co-reader. Building on this insight, the proposed system enables the user and the AI to read Korean modern poetry together, detect the emotions embedded in the text, and convert them into color imagery. Central to this approach is treating datasets not merely as analytical tools but as media that enable new sensory experiences and interpretive possibilities. The dataset serves as a mediator that transfers human annotators' interpretations and provides an environmental condition through which humans and AI can share interpretation. This reframes McLuhan's (1964) notion that "the medium is the message" in light of Peters' (2015) concept of media as the environment that makes our very existence possible, situating the dataset as an environmental medium within the digital turn of Korean literary studies.

The system is implemented in three stages. First, the KPoEM dataset—7,662 lines of modern Korean poetry annotated by five human annotators with 44 fine-grained emotions (e.g., compassion, admiration, guilt) following KOTE (Jeon et al., 2024)—and its associated KPoEM emotion classification model (Lim et al., 2025) are used to map text to emotions. Second, the KCoEM (Korean Color Emotion Mapping) dataset is constructed, reflecting Korean color psychology and general color theory, to map emotions onto color palettes. Third, context engineering integrates the generative AI model, KPoEM, KCoEM, and the I.R.I Color Image Scale (developed in Korea by the IRI Color Research Institute and comprising over 100 emotion adjectives) into a real-time web prototype that transforms poetic emotion into dynamic visualizations. In this configuration, the system functions as media—a connective environment—linking medium to medium and enabling humans and AI to share in the experience of interpretation. Figure 1 illustrates the overall architecture of our Co-Reading system, highlighting the three-stage pipeline—from emotion classification to color mapping and real-time visualization—that underpins the proposed Emotion-to-Color framework.

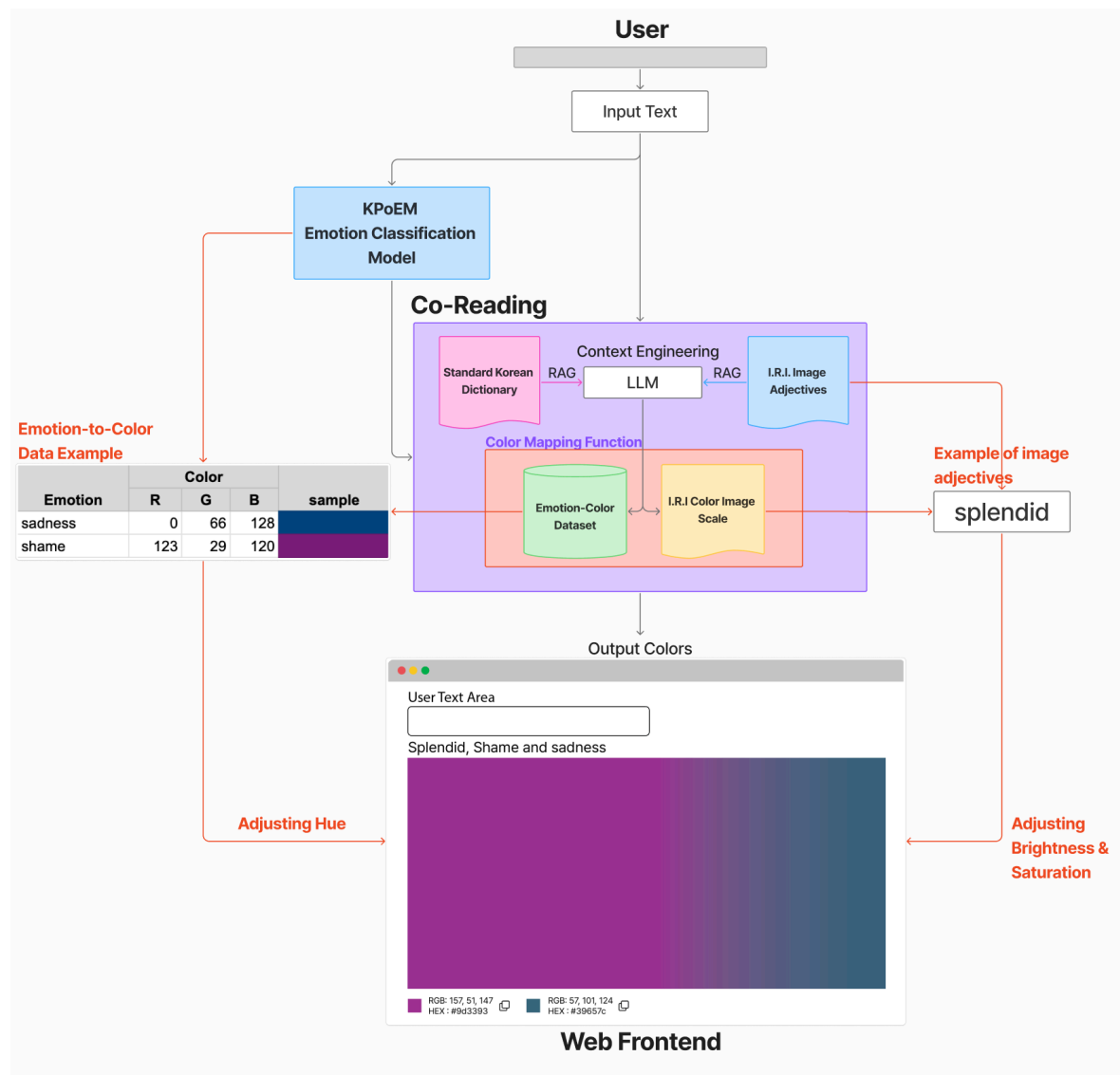


Figure 1. Overall architecture of the Co-Reading system for Emotion-to-Color mapping

This approach critiques conventional data visualization, which privileges quantification and efficiency, by repositioning visualization as a medium of humanistic resonance (Drucker, 2014). Poetry evokes distinct emotions and multilayered imagery for each reader (Wolfgang, 1972); accordingly, the system invites AI to choose an adjective from the I.R.I. scale and actively participate in the color-generation process. Here, AI hallucinations are not dismissed as errors but leveraged as creative interventions that intersect with human intuition. The study's contributions are threefold: (1) it expands human–AI interaction from mere information exchange to a new mode of literary appreciation as co-reading; (2) it renews data visualization paradigms by introducing emotion–color mappings as an alternative, affect-centered visual strategy; and (3) it provides an experimental research model that links dataset construction, context engineering,

and real-time visualization, contributing to interdisciplinary discourse in both digital humanities and AI studies. The resulting emotion-based color palettes have potential applications in exhibition design, publishing, digital archiving, emotion-based recommendation, and color design. Overall, this study positions datasets and systems as environmental media connecting academic research and cultural applications, thereby proposing a creative methodology for the digital humanities that transcends mere analysis.

Keywords

Co-Reading, Digital Humanities, Data Visualization, Emotion Dataset, Multimodal Media

Reference

- AKS-DHLAB. (2025). *KPoEM* [Computer software]. Hugging Face.
<https://doi.org/10.57967/hf/6301>
- AKS-DHLAB. (2025). *KPoEM* [Computer software]. GitHub.
<https://github.com/AKS-DHLAB/KPoEM>
- AKS-DHLAB. (2025). *KPoEM* [Data set]. Hugging Face.
<https://doi.org/10.57967/hf/6303>
- Drucker, J. (2014). *Graphesis: Visual forms of knowledge production*. Harvard University Press.
- Iser, W. (1972). The reading process: A phenomenological approach, *New Literary History*, 3(2), 279-299. <https://doi.org/10.2307/468316>
- Jeon, D., Lee, J., & Kim, C. (2024). KOTE: Korean online That-gul emotions dataset. In *Proceedings of the 13th Language Resources and Evaluation Conference (LREC 2024)* (pp. 17254–17270). European Language Resources Association. <https://aclanthology.org/2024.lrec-main.1499>
- Lim, I., Ji, H., & Kim, B. (2025). Decoding the poetic language of emotion in Korean modern poetry: Insights from a human-labeled dataset and AI modeling. *arXiv*. <https://arxiv.org/abs/2509.03932>
- McLuhan, M. (1994). *Understanding media: The extensions of man*. MIT Press.
- Moretti, F. (2013). *Distant Reading*. Verso Books.
- Pearson, J., Owen, T., Thimbleby, H. W., & Buchanan, G. (2012). Co-reading: investigating collaborative group reading. In: Boughida, K. B., Howard, B., Nelson, M. L., Sompel, H. V. D. & Sølvsberg, I. (Eds.), *Proceedings of the 12th ACM/IEEE-CS Joint Conference on Digital Libraries (JCDL '12)* (pp. 325-334). ACM. <https://doi.org/10.1145/2232817.2232876>
- Peters, J. D. (2015). *The marvelous clouds: Toward a philosophy of elemental media*. University Of Chicago Press.

Gender Representation in *Strong Female Protagonist* Internet Novels

Mozhuo Chen

University of Oxford

In recent years, *strong female protagonist* online fiction has gained wide popularity among Chinese women for its feminist narratives. It challenges patriarchal gender norms by featuring highly independent, powerful women and emphasizing their personal achievements over heterosexual romance, while also exposing tensions between individual success and collective empowerment. Current scholarship has offered qualitative accounts of its feminist tendencies, yet it has not systematically examined how this genre challenges or reproduces gendered norms through stylistic and narrative structures. To address this gap, this pilot study examines 60 *strong female protagonist* novels together with 60 romance and 60 male-oriented novels as reference corpora, all drawn from Tomato Novel, one of the most popular free online fiction platforms. The two reference corpora are regarded as embodying more traditional gender ideologies and serve here as baselines of gender conventions. Combining machine learning, corpus linguistics, and character network analysis, the study asks how *strong female protagonist* fiction reconfigures normative gendered dispositions in heroine characterization, and whether it elevates the collective status of female characters and fosters interactions among women.

The methodology consists of two parts. First, dependency parsing was used to extract words associated with protagonists, which were then employed to train a Nearest Shrunken Centroid classifier to distinguish *strong female protagonists*, romance heroines, and male-oriented heroes. The latter two were taken to embody conventional femininity and masculinity, respectively. The model achieved over 89% in both accuracy and macro-F1 score. Stability selection was subsequently applied to identify discriminative lexical items for each type. These items were qualitatively examined to compare inter-category differences, supported by collocate analysis and by a visualization generated with a pre-trained Word2Vec model to illustrate their relative proximity. Second, co-occurrence networks of the twenty most frequent characters were constructed for each novel, with gender manually annotated within a binary framework for

analytical consistency. Comparative analyses across three genres then analyzed gender differences along three dimensions: (1) character visibility, assessed by the gender distribution of characters and the relative mention frequencies of male and female characters; (2) character importance, measured through four centrality indices that capture how structurally important male and female characters are within the networks; and (3) interaction patterns, captured by the proportions of different gender pairings and supplemented with gender assortativity, which indicates tendencies toward same-gender connections. The results reveal three main patterns. First, verbs governed by *strong female protagonists* are more agentive and action-oriented than those of romance heroines, which stress emotion and passivity. While resembling male-oriented heroes, *strong female protagonists* enact a distinct mode of agency that is embodied and procedural, marked by tactical adjustment rather than outcome-driven dominance typical of male-oriented heroes. Second, the relative scarcity of heterosexual vocabulary sets *strong female protagonists* apart from the other two types while the prominence of 孩子 (“child”) differentiates *strong female protagonists* from male-oriented heroes. Third, although *strong female protagonist* novels do not raise female characters’ overall visibility and importance beyond the heroine and still privilege cross-gender interactions, they place comparatively greater emphasis on female–female ties, which potentially enable visions of female solidarity. Taken together, these findings illustrate the interplay of subversion and accommodation in *strong female protagonist* fiction. This study advances an empirical analysis of the multi-faceted feminist discourses in *strong female protagonist* fiction and the tensions it negotiates, particularly the discrepancy between protagonist empowerment and the marginalization of women as a group. It further contributes to the understanding of contemporary Chinese grassroots feminisms, especially the strand of neoliberal feminism in the Chinese context. Moreover, this research illuminates how gender dynamics in fiction operate through multiple intersecting mechanisms and provides a transferable framework for the multidimensional analysis of gender representation in Chinese fiction.

From Poetic Image to Algorithmic Vision: Re-Imaginations of Sima Guang’s Dule Yuan

Xiao Yang, Wen Liang

Tsinghua University

This study focuses on Sima Guang's Dule Yuan (Garden of Solitary Joy) in the Northern Song dynasty, a site that functioned both as a personal spiritual emblem for its owner and as a multivalent cultural metaphor in later ages. It presents an interdisciplinary exploration that combines data analysis, cultural interpretation, and AI-based visual experiments. While scholars have long examined the interplay among poetry, painting, and gardens in Song literati culture—revealing the spiritual pursuits, social practices, and historical contexts underlying them—previous studies have often treated such materials as relatively static cultural content, paying insufficient attention to their dynamic transformations across different social networks and historical contexts. This project instead approaches Dule Yuan as a cultural image dynamically constructed through multiple discourses over time—at once an expression of Sima Guang's personal experience and a case study of how Chinese classical cultural symbols acquire new meanings through transmission and re-contextualization.

Drawing upon a corpus of seventy-one poems related to Dule Yuan, the research constructs a three-tiered diachronic narrative: Sima Guang's own compositions, the poetic exchanges of his contemporaries, and the reinterpretations by later literati. At the quantitative level, the study employs word frequency analysis, topic modeling, and semantic network analysis to reveal the semantic migration of the garden's core imagery—for instance, its evolution from notions of "leisure" (xianshi) and "self-contentment" (zide) in Sima Guang's era to those of "moral virtue" (dexing) and "integrity" (fenggu) in later contexts. Subsequently, at the interpretive level, these data-driven patterns are contextualized through a hermeneutic reading of paintings, political history, and Confucian thought, elucidating the cultural drivers behind the garden's transformation into a potent symbol of political and moral significance.

The textual abundance yet lack of visual documentation of Dule Yuan makes it an ideal case study for examining and critiquing how text-to-image models translate complex cultural memory. Accordingly, the research utilizes these models to generate visualizations of Dule Yuan in different historical contexts. This process not only reveals the cultural "misreadings" caused by the limitations of contemporary visual corpora but also thereby confirms the biases of training data and the epistemological limits of the models, highlighting the necessity of humanistic intervention in interpretation and correction. In response, this study proposes a paradigm for AI prompt design rooted in the classical Chinese poetic concepts of xing (form), xiang (image), and yi (idea), aiming to explore an effective visual generation pathway for reproducing cultural memory and a novel model for human-machine collaboration.

In conclusion, this research not only illuminates the dynamic evolution of Dule Yuan as a cultural image but also advances a methodological paradigm that integrates quantitative analysis, cultural interpretation, and AI critique. Beyond offering a new interpretation of Dule Yuan, the project demonstrates how classical Chinese texts can enter into dialogue with global digital humanities, thus contributing to broader international discussions on cultural memory and re-contextualization at the intersection of historical tradition and digital futures.

Benchmarking Narrative Comprehension in Long-Context Large Language Models

Tong Li

The Chinese University of Hong Kong

The proliferation of Large Language Models (LLMs) with extended context windows has spurred the development of sophisticated applications, from multi-document analysis to repository-level coding assistants, all of which demand robust long-context understanding and reasoning capabilities. However, evaluating these capabilities remains a significant challenge. Existing benchmarks, while valuable, often suffer from critical limitations that allow models to achieve high scores through shortcuts, without demonstrating true comprehension. These shortcuts include leveraging memorized parametric knowledge from pre-training data, solving tasks with localized retrieval rather than global context integration, and relying on shallow reasoning or summarization techniques. To address these shortcomings, our team led by Yu, M., et al. introduces a novel benchmark designed to rigorously assess an LLM's ability to perform global comprehension and multi-step reasoning over long narratives. This poster at the HKADH conference shares my experience contributing to the construction and validation of our benchmark dataset. The benchmark formulates a unique task: given the full text of a novel, the model must determine whether a newly generated, hypothetical prequel story for a key character is consistent or contradictory with the established narrative. This prequel entailment framework inherently mitigates the flaws of prior benchmarks. Because the prequels are novel creations, they do not exist in any model's training data, thus neutralizing the memorization shortcut and forcing reliance on the provided context. The task is explicitly designed to require holistic understanding, as verifying consistency often involves aggregating subtle clues and tracking character arcs scattered across the entire book. Our analysis confirms this, revealing that 88% of

instances require evidence from multiple, non-local parts of the narrative to be solved correctly. Furthermore, the task necessitates deep, multi-step reasoning, as the implications of a prequel on the canonical story are often indirect and require causal inference rather than simple fact retrieval.

Our dataset was meticulously constructed to ensure quality, diversity, and challenge. We selected literary works spanning multiple genres (e.g., adventure, historical fiction, crime fiction) and languages (English and Chinese). For key characters across these books, we used state-of-the-art LLMs to generate a pool of candidate prequels. These generated prequels were then subjected to a human annotation process. Annotators each deeply familiar with the selected books labeled each prequel according to a detailed typology that distinguishes between different forms of consistency and contradiction (e.g., Local Contradict, Global Contradict, Consistent). This process yielded a high-quality dataset of more than seven hundred instances. The annotation was guided by strict principles to ensure objectivity, such as basing judgments solely on the original novel’s content and assuming direct continuity between the prequel and the story. The quality of this process is reflected in a substantial inter-annotator agreement, with a Kappa score of 0.7828. By focusing on prequel entailment, our task design moves beyond simple information retrieval and measures a form of fluid intelligence, the ability to reason and solve novel problems, within the natural language space, a significant departure from benchmarks that test crystallized knowledge.

We conducted extensive experiments on our benchmark using a suite of state-of-the-art open-source and commercial LLMs, including the Qwen, DeepSeek, and Gemini families. We evaluated models under several paradigms: vanilla few-shot in-context learning (ICL), Retrieval-Augmented Generation (RAG), in-domain fine-tuning, many-shot ICL, and commercial agentic systems like OpenAI’s DeepResearch. Our findings reveal a significant and persistent gap between machine and human capabilities in long-context reasoning: (1) Significant Human-Machine Performance Gap: The best-performing model, Gemini-2.5-Pro, still lags behind human performance by over 15% in F1 score, highlighting the profound difficulty of the task for current systems. (2) Flawed Reasoning Underlying Correct Answers: A critical contribution of our work is a manual human study on model reasoning. We found that LLMs frequently arrive at the correct binary answer (consistent or contradict) through entirely flawed or invalid reasoning. This creates a reasoning accuracy gap of over 30% compared to humans, who demonstrate consistent and valid reasoning paths. This result underscores the superficial nature of current models’ understanding and

demonstrates that answer accuracy alone is a misleading metric for evaluating true comprehension. (3) Ineffectiveness of Scaling and Advanced Methods: Our experiments show that simply providing more context via RAG does not guarantee improvement and can even degrade the performance of stronger models like Gemini-2.5-Pro, which may over-rely on their powerful parametric knowledge. Furthermore, neither in-domain fine-tuning nor many-shot ICL yielded performance gains, suggesting that the reasoning capabilities required by our benchmark are not easily elicited and represent a fundamental limitation of current architectures. (4) Resilience to Web-Based Shortcuts: Commercial DeepResearch systems performed poorly compared to RAG-based approaches, confirming that the problems in our dataset cannot be solved by retrieving existing literary analyses from the web. This validates our benchmark's design as a true test of reasoning based on the provided context.

Selected Reference:

- Yu, M., et al. (2025). PRELUDE: A Benchmark Designed to Require Global Comprehension and Reasoning over Long Contexts. ACL under review.
- Agarwal, R., et al. (2024). Many-shot in-context learning. The Thirty-eighth Annual Conference on Neural Information Processing Systems.
- Bai, Y., et al. (2024). Longbench: A bilingual, multitask benchmark for long context understanding. Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics.
- Karpinska, M., et al. (2024). One thousand and one pairs: A "novel" challenge for long-context language models. Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing.
- Kočiskỳ, T., et al. (2018). The narrativeqa reading comprehension challenge. Transactions of the Association for Computational Linguistics, 6, 317-328.
- Lewis, P., et al. (2020). Retrieval-augmented generation for knowledge-intensive nlp tasks. Advances in Neural Information Processing Systems, 33, 9459-9474.
- Xu, X., et al. (2025). DetectiveQA: Evaluating long-context reasoning on detective novels. Workshop on Reasoning and Planning for Large Language Models.

GraphRAG for Plant Knowledge Extraction from Chinese Local Gazetteers

Hui Li

Nanjing Agricultural University

Chinese Local gazetteers (a.k.a., *difangzhi*, Chinese 方志), are historical records that have been continually written or compiled by local officials and scholars, concerning a variety of topics such as local products, landscape, population, economy, and culture over time [Li & Li, 2022]. Jiangsu Province in the South of China has a history of over 2,000 years of compiling local gazetteers, and the gazetteer collections of regional products owned by Nanjing Agricultural University in Jiangsu is one of the largest gazetteer repositories in China. Nowadays, with the support of cutting-edge digitization technology, researchers are increasingly focusing on discovering valuable knowledge from large-scale local gazetteers via text mining strategies. Most of the previous studies dedicated to the extraction and organization of entity information in historical texts, particularly concerning mentions and descriptions of persons, plants, and locations. For example, Chen et al. [2020] developed LoGaRT, a suite of digital tools for the retrieval and analysis of Chinese local gazetteers; Liu et al. [2022] applied natural language processing techniques to extract names of individuals and locations, along with their relations. However, relatively few studies have attempted to further interpret and leverage the implicit knowledge about local products (e.g., plants and animals) within these gazetteers (Li, 2021).

Rice is a staple food in southern China, with paddy rice serving as the one of the primary crops in Jiangsu Province. The local gazetteers encompass a variety of rice cultivars across most rice-growing regions including Jiangsu Province in China [Xia et al., 2024]. Each record in this digitized collection mainly consists of a rice name, the local gazetteer where the rice is recorded, the time when the gazetteer was published, and the corresponding rice description. By extracting rice information in gazetteers can provide researchers with the unique attributes of special rice varieties and the cultivation history of our ancestors.

In this study, we develop a knowledge-based chatbot system utilizing Generative AI technologies based on rice records in 544 local gazetteers from Jiangsu province spanning over 8 centuries. This system aims to introduce rice knowledge to the public and serve as a valuable reference for specialized rice breeding. This system consists of three key components: “Rice History”, “Rice Chatbot” and “Land of Rice and Fish”. Each component is briefly introduced as follows.

Rice History : in this component, textual descriptions from local gazetteers, folklore records, and biographies are selected and displayed on the webpage. By reading these materials or listening to the corresponding AI-generated audios (click a mascot-figure of Nanjing Agricultural University) , users can gain a vivid understanding of Jiangsu rice history and culture.

Rice Chatbot: this component consists of two parts, i.e., the knowledge graph of rice cultivars and the retrieval augmented generation (RAG) boosted by the power of large language models to enhance users with an interactive and pleasant human-computer interaction. In graph module, nodes represent rice names and attributes, and edges represent relations between entities. When users raise a rice-relevant question, the chatbot quickly identifies the nodes and paths most closely associated with the query in graph, and then returns the targeted outputs to users. While in RAG module, the textual descriptions and the internal knowledge of LLMs enable the system to integrate general knowledge into the rice domain knowledge during the dialogue process. Thus this platform not only addresses specialized questions on rice cultivation, but also provides broader insights by incorporating the knowledge of other related areas.

Land of Rice and Fish: this component is composed of three elements, the “Rice Map”, “Rice Chart”, and “Rice Game”. While appreciating the beauty of data, users can gain an in-depth understanding of the rice-related knowledge. Rice Map is visualized using a fish-shape hex map, which simulates the geographical outline of Jiangsu province. Users can click on different hexagon grids to view specific rice varieties and read corresponding descriptions from local gazetteers, respectively. Rice Chart displays the key statistics of rice varieties in Jiangsu via visualized charts on animated painting scroll. Rice Game features an interactive game and players are guided through matching challenges which incorporates rice knowledge, such as key traits, cultivation environment and phenotypes. With a designed interface and simple rules, this game offers a delightful user experience, aiming to promote public awareness and interest in rice science, particularly among young users.

This system serves as an effective tool for the retrieval and analysis of plant knowledge within collections of Chinese local gazetteers. Users who are interested in traditional Chinese culture and/or domain experts in need of resources of local rice varieties, can find the information they need on this system.

Where's the Fun?: Proposing for a digital repository for Cold War Hong Kong toys

Connor Ka Hei Au Yeung

Purdue University Department of History

This project explores the possibility of digitally curating toys manufactured during Cold War Hong Kong. Being a part of everyday life, seemingly innocent daily objects can display diverse forms of agencies in interaction with humans (Robles, 2024). The same certainly extends to toys, as "distinct forms of furniture, clothing, and playthings evolved in response to adult perceptions of children's changing needs" (Brandow-Faller, 2018). While global childhood studies have emphasised upon impacts of historical events on childhood experiences, and shifting notions of childhood over distinct cultures and time, toys remain understudied as a form of material culture acting as a conduit between individual children, the wider community and the "adult" social spaces that children are expected to grow into. Curiously, Hong Kong's recent history as a capital of toy manufacturing has also received less than due academic attention. Many of the extant publications concerning Hong Kong's toy industry history are published from an angle of hobby collection (Chan, 2017; Yeung et al., 2017), or through the lens of business history (Monks, 2010), leaving out significant gaps in the material culture of childhood, and socioeconomic histories.

A history of toys from Hong Kong, focusing on using toys as material agents that show stories of socioeconomic development, commercial trade and technological exchange, cannot be complete without faithful renditions of playing and making. Just as importantly, accessibility, particularly with the hindsight of the global COVID-19 pandemic, proves the value of interactable virtual archives to maintain public education and research access in times of crises. Reviewing extant projects covering historical childhood in East Asia, the Hoover Institution's multimedia project, *Fanning the Flames: Propaganda in Modern Japan* demonstrates a valuable example to preserve access to experiencing past childhood material cultures, informed by historical context, in an interactable virtual format.

With these elements in mind, I propose the creation of a project dedicated to digitally curate toys made in Cold War Hong Kong, embedded within the context of Hong Kong's postwar developments, and provides historical contexts of technological transfer, capital flow, to the evolving consumption of Hong Kong-made toys as they gain global renown. I also aim to categorise individual toys by theme and manufacture materials, demonstrating evolving socioeconomic circumstances and manufacturing capabilities, in conjunction to downloadable 2D/3D scans of toys for object lessons, with an option of virtually playing with the toys through online UIs, or at minimum, a video recording showing how to operate a toy.

Bringing this early-stage project into this conference, I aim to discuss questions

including but not limited to the following: Many toy companies in discussion still exist, and may hold copyright over their products. To what extent can this project allow educational access to replicate toys that may be private intellectual property? Moving on from legal issues, technical problems also abound. On a spectrum of accessibility and granularity, what considerations should be taken when conducting scans of toys? Compared to extant 3D replication projects, such as Mark Olson's Interactive Archive of Historical Medical Technologies, and the Virginia Commonwealth University's Virtual Curation Laboratory, what possible issues might 3D scanning processes face, such as brittleness of scanned objects, or the extent to which materials and paints could be replicated?

Application of Blockchain and AI Technologies for Sustainable Development

Ben Radhakrishnan, Nelson Altamirano

National University, San Diego, CA, USA

Over the last decade, business corporations and UN/Yale University have made various levels of commitments and investments for sustainable development and environmental tracking and reporting on the progress towards their goals. At the global level, the Global Reporting Initiative (GRI) tracks corporations. UN tracks its progress towards its country 2030 Sustainable Development Goals (SDGs). Yale University, through its Environmental Performance Index (EPI), tracks some 180 countries' environmental issues.

This research proposes a combined model for utilizing modern technological tools, Blockchain and Artificial Intelligence (AI), to better track the accuracy of the collected data and the ability to predict the goals for the future. This new process will significantly help towards the achievement of sustainability goals at a lower cost.

Organizations such as GRI can implement a reporting framework for annual Corporate Social Responsibility Reports (CSR) with built-in Blockchain technology, where the data is immutable and traceable. This process and outcome are key to investors' confidence in sustainability index funds (e.g., ESG funds). Countries can use blockchain technology for SDGs and EPI data to increase reliability. This step could also benefit the integration of corporate and country-level data to achieve corporate and country goals.

The proposed model includes IBM Blockchain technology, IBM's LLM offering 'watosonx.ai,' and IBM's 'Learning AI Agent.' This combined IBM architecture can

collaborate well with individual corporations' data center applications and country-level data centers to ensure accurate data tracking, immutable data storage, and predictive data analysis. This data analytics model helps with a more qualitative and quantitative outcome for all. Data Analysis and prediction can be continuous rather than annual. The reporting and analysis will be more effective (doing it right) and efficient (more cost-effective).

Many aspects of AI Agents are under research, and their real application will expand. AI agents will focus on a task execution, choosing the best outcome given the goals. With the noted above approach, AI Agents are expected to be more cost-effective since corporations or non-profits do not have to invest in large computer infrastructure, including LLM models.

Index terms: Sustainability, Blockchain, Artificial Intelligence, Architecture, AI Agent, Data Center

Hybrid Augmentation: Building a RAG-CAG Framework to Support Linguistic Research

Rui SHANG¹, Ke Wang²

¹ *Westlake University*

² *Zhejiang University*

As large language models (LLMs) rapidly develop in supporting research, many institutions have already adopted commercial GenAI tools, such as ZJU's Deepseek and HKU's ChatGPT service etc. While these tools demonstrate certain capabilities in general tasks, they always fail to provide convincing answers to prompts related to a specific academic field (Singh et al., 2025). This defect may come from various reasons, such as everchanging knowledge, illusion, input truncation and poor reasoning from current LLMs (Kasneci et al., 2023). Consequently, the application of general LLMs in academic fields remains a significant challenge.

To address the limitations of off-the-shelf models, augmented generation have been invented and widely implemented, since they enable LLMs to produce more accurate and up-to-date responses by retrieving relevant resources from databases or retraining models with specialized materials. Common approaches include the latest retrieval-augmented generation (RAG) and cache-augmented generation (CAG). RAG dynamically loads context from storage sources (such as databases or object storage) while providing response after checking relevant content through queries, embeddings, and retrieval algorithms (Guo., 2025; Oche

et al., 2025). Therefore, the performance of RAG applications depends not only on the quality of the context but also on the embedding and searching algorithms selected during system design. In contrast, CAG preloads the entire context into memory and uses key-value (KV) caches within the model's context window (Agrawal, 2025), which is also known as prompt-caching recently provided by ChatGPT and Claude. However, CAG is constrained by the model's token limits (typically ranging from 32k to 100k tokens). Although this capacity is substantial, it remains finite, restricting its scalability to extremely large datasets. To combine the advantages of both, hybrid methods that integrate RAG and CAG have emerged. For instance, initial simple queries can be immediately answered using CAG's preloaded cache, while subsequent in-depth queries leverage RAG's dynamic retrieval. This integration effectively manages memory constraints, optimizes the use of the limited context window, and prioritizes low latency in real-time applications.

While both RAG and CAG are highly dependent on high-quality, domain-specific knowledge, the practical application of these technologies has predominantly been limited to corporations and professional services. These implementations have typically involved publicly available data source or generic knowledge bases in certain professional industries, such as enterprises, discovery searching and medicine (Xu et al., 2024; Bevara et al., 2025; Gan., 2025). However, there is a noticeable absence that combine these techniques with proprietary academic. Existing frameworks like RAGAS, DeepEval, and TruLens assess LLM performance, but evaluations of academic sources are scarce, despite their reliance on verifiable ground truth for accuracy and reliability.

This paper aims to extend the integration of RAG and CAG pipelines with existing LLM, enabling them to offer more domain-specific and up-to-date responses within academic fields, and providing rational evaluation criterion. Meanwhile, it seeks to demonstrate the new possibilities of LLMs in academic services.

Specifically, academic libraries or other similar technical agencies, as a hub of academic resource, have the potential to develop tailor-made, shared collaborative systems for researchers. In this particular study, we take a linguistics research project as an example, where we organize and address some of the controversial academic concepts within the field to serve as material for a hybrid RAG-CAG model built upon Deepseek LLM model provided by university library. The model is optimized to assist in cross-comparing and analyzing various scholars' definitions across a context of board literature, thus mitigating the common defects appeared in traditional large models, such as truncating relevant literature or making speculative judgments. Technically, the key literature

corpus is preloaded into the model to integrate domain knowledge as CAG, while RAG dynamically loads the academic outcomes to facilitate knowledge updating without retraining. Finally, the hybrid RAG-CAG model demonstrates improved performance in handling domain-specific linguistic queries by combining CAG's efficient, preloaded context access with RAG's dynamic retrieval capabilities. In addition, this article also integrates various evaluation frameworks commonly used in general tasks, such as RAGAS, DeepEval and TruLens, and proposes the Research Evaluation For Augmentation Framework (REAF) to emphasize the ground truth and contextual relevance of academic sources to address the scarcity of specialized evaluations.

Keywords

Large Language Models (LLMs)

Retrieval-Augmented Generation (RAG)

Cache-Augmented Generation (CAG)

Academic Libraries

Domain-Specific Knowledge

Linguistics Research

Hybrid AI Models

Chinese Engineers Relational Database 2.0: A New Interface for Data Exploration

Thorben Pelzer

HKUST

to be provided

Deterritorialized Ocularcentrism: AI-Generated Imagery's Haptic Potential

Mingyang Li¹, Yanlei Li²

¹ 华南农业大学珠江学院

² 香港浸会大学

In February 2024, the American AI research company OpenAI released Sora, its first text-to-video model, sending immediate shockwaves through the traditional film and television industries. Industry insiders feared that the technology could

render conventional image-making techniques obsolete—little more than the "dragon-slaying skills" in a world of generative imagery. Ordinary audiences, however, greeted the tool not with anxiety but with Dionysian exuberance; cheap, frictionless access to image production has democratized visual creation. Behind this euphoria lies a deeper epistemic shift: AI-generated imagery deterritorializes the ocularcentric regime that has dominated moving-image art since the inception of the medium.

In the classical cinematic apparatus, a fixed viewing distance constructs an ontological gap between spectator and image; the audience is positioned as a passive, silent subject, consuming pre-programmed optical flows from afar. The apparatus thereby enacts an ideological capture that Laura Mulvey once termed "to-be-looked-at-ness." Recognizing this asymmetry, scholars have turned to Merleau-Pontian phenomenology to restore corporeal agency. Vivian Sobchack's "film's body" reconceives the cinematic apparatus as an embodied interlocutor that both sees and is seen, while Laura U. Marks's "haptic visuality" argues that certain images solicit a proximal, almost tactile gaze that scans surface rather than plunging into depth. Extending the paradigm to digital media, Mark Hansen demonstrates how virtual-reality environments enlist the viewer's body-schema, eliciting involuntary motor responses that blur the boundary between kinesthesia and touch. Yet these accounts remain phantasmatic: the "touch" they describe is either metaphorical or vision-mediated, and the darkened room of cinema, or VR headset, still subordinates the body to a luminous projection. Crucially, they treat touch as a unilateral sensation—something the recipient "has"—and overlook the bilateral metamorphosis produced by genuine contact, in which both image and observer are altered by the forces exchanged.

AI-generated imaging technology offers a material escape route from this impasse. First, the user operates in an illuminated, unconfined space; no headset or black box encloses the body. Second, the act of prompting, refining, and re-generating images activates real-time changes in proprioception, micro-gesture, and retinal stress—measurable somatic feedback that exceeds purely visual address. Most importantly, the image itself is subjected to force: latent vectors are redirected, pixels are re-weighted, and attention maps are re-calibrated under the affective pressure of the user's prompt. Image and observer enter a reciprocal modulation that satisfies the Deleuzian criterion of "becoming" rather than mere "viewing."

To theorize this emergent tactile economy, we must move beyond the residual visualism of Merleau-Ponty and enlist a conceptual lens that privileges mobility, multiplicity, and surface-to-surface contact. Gilles Deleuze's figure of the nomad

provides such a lens. AI-generated imagery functions as a weapon of nomadic warfare: it converts sedentary spectators into data-navigating nomads, deterritorializing the striated, distance-based space of traditional projection into a smooth, data-intensive space centered on haptic relay. Within this smooth space, vision is no longer the sovereign sense; it is one vector among others in a field of tactile, affective, and algorithmic forces. The result is not the representation of touch but its actualization—an encounter in which both image and body are rewritten by the event of contact.

Glitch Revelations: AI, Trash Aesthetics, and the Dionysian Data-Self

Yanlei LI¹, Mingyang LI²

¹ *Hong Kong Baptist University*

² *South China Agricultural University Zhujiang College*

In the vast and exponentially growing digital landfill of AI-generated content, the technical pursuit of photorealism and narrative coherence is perpetually shadowed by its own failure. This failure, however, is not an end but a fertile beginning. The algorithmic struggle for character consistency and visual harmony inadvertently gives rise to a pervasive glitch aesthetics—a dynamic and generative form of "trash aesthetics" that is actively recalibrating contemporary sensory perception and aesthetic judgment.

Far from being dismissed as errors, these digital malfunctions and grotesque artifacts are curated and celebrated as a new form of social currency within decentralized, post-media tribes. This phenomenon fuels a distinctly Dionysian revelry in online spaces, where the daily, even hourly, iteration of content prioritizes the visceral thrill of the breakdown over the sterile achievement of technical perfection. Within this carnivalesque sphere, young creators strategically employ symbolic "trash" avatars—glitched, distorted, or otherwise imperfect digital bodies—to navigate a complete, ritualistic life cycle of identity performance. This cycle involves being celebrated as icons (deification) only to be subsequently dismantled or replaced (sacrifice), a process that mirrors the relentless consumption and disposal inherent to digital culture itself.

Moving beyond a purely techno-deterministic reading, this study adopts an interdisciplinary framework situated at the confluence of digital media art practice and contemporary cultural theory. It asks: how does the very materiality of AI-driven image production—its inherent instability and "noise"—reconfigure youth aesthetic preferences and, more profoundly, their existential sensibilities towards

selfhood and community? By analyzing these glitches not as bugs but as features, this research posits "trash" as a critical lens through which to examine the formation of identity within the algorithmic milieu.

Short Papers 2: Graph Reasoning, Provenance & Retrieval in Humanities Data

CRMdig-based Provenance Ontology for Korean Cultural Heritage 3D Data

Ara JO

Cultural Informatics, Graduate School of Korean Studies, The Academy of Korean Studies, Seongnam-si, Republic of Korea

This study aims to design a 'Korean-style ontology' for the provenance (entire lifecycle) of Korean cultural heritage 3D data based on CRMdig, and through this, to construct semantic data. Its goal is to integrally manage 3D data that has been underutilized by domestic institutions, to mitigate the phenomenon of information distortion (hallucination) that arises in the AI era, and furthermore, to prepare a foundation for international data linkage and trust-based services.

As we enter the age of Artificial Intelligence (AI), the value of digital data is increasing as never before. The field of Korean cultural heritage, in particular, has established high-quality 3D original record data generated by 3D scanning and photogrammetry as a core asset in accordance with the 'Cultural Heritage Digital Transformation 2030' plan, a process that is still actively ongoing.[1]

The cultural heritage 3D data produced through the investment of vast resources is mostly limited to low-capacity models and their basic metadata, which are provided through online portals. This low-capacity data has clear limitations in terms of quality for use in general content creation or specialized academic research. This necessitates high-quality 3D data or unprocessed raw data. Therefore, in preparation for the future phase of disclosing and utilizing all data, the design of a standardized 3D data ontology that can effectively integrate data, transparently manage provenance, and guarantee international interoperability has become a pressing task.

Accordingly, this study adopts CIDOC-CRM, the standard ontology of the International Council of Museums (ICOM), and its digital extension model, CRMdig, as its core methodology to design a 'Lifecycle Ontology for Korean-style

Cultural Heritage 3D Data.'[2]

This research will be conducted in a total of five stages. First, it will analyze the entire lifecycle of domestic cultural heritage 3D data. Centering on the Korea Heritage Service and the National Museum of Korea, which represent national heritage, it will closely investigate the current status of raw data acquisition, data post-processing, final deliverables, and data archiving.[3] Although both institutions record precise metadata based on detailed data construction guidelines, they are founded on traditional database structures where users search for information by keywords, thus showing the fundamental limitations of their archive systems.

Second, it will search for a standard model through an analysis of foreign 3D archive cases. Focusing on four leading institutions—Europeana, the Smithsonian, the British Museum, and CyArk—it will investigate the management level of data provenance in major overseas 3D archives and conduct a comparative analysis with the domestic situation.[4] Through these cases, it will identify how data schemas are designed differently according to the core objectives of each archive. By synthesizing this domestic and international status, the direction of this study will be determined.

Third, based on the preceding analysis results, a 'Korean-style Cultural Heritage 3D Data Ontology' based on the international standard semantic model CRMdig will be designed. At this stage, it will particularly focus on the representation of provenance, which allows for tracing the entire process from the creation of 3D data to its processing, transformation, and transfer. Although CRMdig is an extension model specialized to precisely capture the dynamic lifecycle of a digital object, it does not predefine all the classes that encompass the detailed work stages of a specific domain. For example, while CRMdig's D3 Formal Derivation class is central to modeling the 3D data post-processing workflow, it has the limitation of not being able to distinguish specific work types such as 'point cloud registration,' 'noise removal,' or 'texturing' of a mesh model. To clearly express this technical detailed information, the ontology will be extended by proposing a user-defined classification system composed of sub-classes of D3 Formal Derivation or properties that modify it. To verify the effectiveness of the designed ontology, a specific cultural heritage asset will be selected as a case to build a pilot dataset. In this process, a unique identifier (URI) will be assigned to every digital object and transformation event—from the acquired raw dataset through intermediate processing stages to the final deliverables—to clearly define the connection relationship of each stage.

Fourth, based on the designed ontology schema and the pilot dataset, RDF

(Resource Description Framework) triples, which are a set of interconnected data, will be generated. These generated RDF triples will finally be completed as a Knowledge Graph containing the detailed provenance information of the corresponding cultural heritage.

Fifth, the performance and utility of the constructed Knowledge Graph will be evaluated by executing SPARQL queries. This stage is a process of verifying whether the designed ontology has practically secured traceability and interoperability through complex and semantic queries that were impossible with simple metadata searches. For instance, by successfully executing a query like, "Find all the raw data acquired with scanner B and the 3D data in OBJ format among the Daeungjeon data of temples in region A," it will be proven that the proposed ontology model has the scalability applicable to cultural heritage data of various sizes, from small artifacts to large-scale historic sites.

Ultimately, this study will establish a long-term preservable 3D data system based on FAIR principles to prepare the foundation for the international data linkage of Korean cultural heritage. In the future, it can lead to diverse research expansions, such as automating the structuring process of unstructured real-world data (messy real-world data) by utilizing AI, and developing a next-generation intelligent cultural heritage search system that incorporates Retrieval-Augmented Generation (RAG) technology.

Keywords

Cultural Heritage, 3D Data, Ontology, CIDOC-CRM, CRMdig, provenance

Reference

[1] the Korea Heritage Service. (June 16, 2021). the Korea Heritage Service, The announcement of the 'Digital Transformation for Cultural Heritage 2030' plan. the Korea Heritage Service.

http://www.khs.go.kr/newsBbz/selectNewsBbzView.do?newsItemId=155702775&onId=b_sec_1&pageIndex=1&strWhere=&strValue=&mn=NS_01_02

[2] International Committee for Documentation (CIDOC). (n.d.). The CIDOC conceptual reference model. Retrieved September 29, 2025, from <https://cidoc-crm.org/> ; CIDOC CRM Special Interest Group. (n.d.). CRMdig: An extension of CIDOC-CRM to support 3D modelling. Retrieved September 29, 2025, from <https://cidoc-crm.org/crmDIG>

[3] Korea Heritage Service. (n.d.). Korea Heritage Digital Service. Retrieved September 29, 2025, from <https://digital.khs.go.kr/> ; National Museum of Korea (n.d.). 3D Data Search. Retrieved September 29, 2025, from <https://www.museum.go.kr/MUSEUM/contents/M0505000000.do>

[4] Europeana. (n.d.). Europeana. Retrieved September 29, 2025, from

<https://www.europeana.eu> ; Smithsonian Institution. (n.d.). 3D digitization. Retrieved September 29, 2025, from <https://3d.si.edu/> ; The British Museum. (n.d.). The British Museum (@britishmuseum). Sketchfab. Retrieved September 29, 2025, from <https://sketchfab.com/britishmuseum/models> ; OpenHeritage3D(CyArk). (n.d.). OpenHeritage3D. Retrieved September 29, 2025, from <https://openheritage3d.org/>

Reconstruction of Traditional Chinese Maritime Routes by GIS and KG Approach

Hongpeng Luo^{1, 2}, Tong Liu², Kailu Lin², Jie He²

¹ School of Architecture, Tianjin University, Tianjin 300072, China

² School of Architecture, Harbin Institute of Technology, Shenzhen, Shenzhen 518055, China

Corresponding author: Jie He

Abstract

During the transition from experiential to quantitative navigation, the compilation of maritime rutters, exemplified by *Shun Feng Xiang Song* 順風相送, illustrates a paradigm shift in ancient Chinese traditional navigation technology.

Consequently, human practices in maritime spaces were extended, inherited, and replicated across spatiotemporal scales beyond individual cognition. This study addresses the question: *how did traditional Chinese navigation technology shape the rules and knowledge structures of human spatial movement across the seas?*

Innovatively integrating digital humanities with Geographic Information System (GIS) spatial analysis methods, the research quantitatively and structurally extracts descriptions of navigation techniques from historical texts to reconstruct maritime movement strategies/rules under varying environmental conditions.

These strategies are then used as foundational logic for GIS spatial analysis to delineate and map the spatial boundaries of ancient maritime navigation.

The methodology encompasses five aspects: *digitization, vectorization, structuring, knowledge formalization, and visualization*. (1) First, using the *Zhenlubu* 針路簿 as the source material, the text is scanned and digitized. (2)

Second, a locally deployed large language model, incorporating the Qwen visual model, performs high-accuracy OCR on ancient texts, supplemented by manual verification for text proofreading, punctuation correction, and conversion between traditional and simplified Chinese. Systematic prompt engineering used for translation. (3) Third, specialized vocabularies—spatial (including place names,

directions, distances), temporal (such as time periods, months, seasons), and environmental (covering water depth, reefs, weather changes, tides, celestial angles)—are established to build a relational database. Using spatial references from the texts, real geographic coordinates are assigned to the spatial vocabulary, achieving georeferencing of historical place names in GIS. (4) Fourth, the relational database organizes and interconnects data via explicit indices, forming the project's underlying database. Drawing on knowledge graph theory and the CIDOC Conceptual Reference Model (CRM) for cultural heritage, a maritime movement ontology model is constructed to *Maritime Movement Strategies Based on Environmental Conditions*. (5) Fifth, Large Language Models (LLM) like Gemini assist in developing a web platform for querying navigation routes and interactive map visualization. This methodology constructs a conceptual model that bridges the *humanistic ocean* and *spatial ocean*, ultimately enabling the model's projection into geographic space. Thus, it provides a pathway for translating conceptual understandings of maritime cultural value into tangible geographic entities.

Space serves as a medium for human cognition and practice. *Technology* not only participates in knowledge production and carries humanistic values but also implies the limits and boundaries of human spatial reach. The mapping of *technology* onto *space* holds potential for interpreting the logic of human–ocean interaction and the value of cultural landscapes.

The Anatomy of a Villain: Distant Reading and Graph RAG for VillainScope

Gayeon Kim

Department of Cultural Informatics, Graduate School of Korean Studies, The Academy of Korean Studies, Republic of Korea

Villains have evolved across diverse media and genres, reflecting the values of their respective eras. In contemporary narratives, villains are depicted not merely as antagonists but as independent characters endowed with complex psychological developments and background stories. Moving beyond the binary classification of good and evil, they often embody moral ambiguity, which evokes deep empathy and identification among audiences and serves as a central axis of the narrative. However, existing research on villains has largely been confined to close readings, focusing on individual works' character traits or backstories. Narrative datasets such as BookCorpus [1], ROCStories [2], and ProperLerner

[3] have included attributes related to genre or historical background in order to understand specific narrative structures. In particular, character-oriented datasets such as LiSCU [4], BOOKWORM [5], and CHATTER [6] have provided descriptions of character traits and summaries primarily for the purpose of understanding character-centered narratives. These datasets, however, have shown limitations in illuminating the universal features of villains and the ways in which their roles have evolved in line with broader cultural and historical trends across contemporary media.

To address these limitations, this study introduces VillainScope, a dataset designed to systematically analyze villain characters. VillainScope compiles structured information on 209 villains drawn from four major media categories: animation, literature, film, and television drama. Detailed descriptions of villains' attributes and metadata are made available through the project's GitHub repository**. During data collection, objectivity was prioritized by grounding descriptions in scholarly references and precise documentation.

To identify villains' universal characteristics and narrative roles, three topic modeling approaches were employed: Latent Dirichlet Allocation (LDA), Embedded Topic Model (ETM), and Contextualized Topic Model (CTM). Among these, ETM demonstrated superior performance in terms of topic coherence and diversity, effectively capturing meaningful themes across villain typologies. Notably, ETM revealed that the motives for villainous actions often stem not only from sheer malevolence but also from complex factors such as betrayal or the loss of power. This finding highlights the potential of exploring the contextual layers underlying villainous behavior. Furthermore, statistical analyses of attribute frequencies across different time periods were conducted to examine how villains have evolved in response to shifting societal values.

The topic modeling results indicate that villains commonly share traits such as high intellectual capacity, advanced technical expertise surpassing ordinary individuals, mastery of disguise, and involvement in criminal activities. Disguise was found to encompass not only alterations in appearance or costume but also manipulations of language and social roles. Villains with psychological issues, including dissociative identity disorder or depression, often channeled their feelings of alienation and helplessness into violent expressions. In some cases, such issues escalated into delusions that allowed them to rationalize their actions. Villains frequently exhibited dual and contradictory psychological traits—for instance, loyalty to a specific organization coupled with extreme cruelty toward others—thereby emerging not as flat characters but as multidimensional, round characters.

Building upon this foundation, the study further proposes extending VillainScope from its current plain-text format into a knowledge graph structured through triples. This transformation facilitates the mapping of villains' attributes to broader metadata such as works, genres, and directors, enabling complex relational analyses. Integration with external resources like Wikidata would allow for scalable data enrichment and clearer delineation of inter-entity relationships. This approach provides a foundational layer for graph-based Retrieval-Augmented Generation (RAG), offering not only villain-related textual resources but also high-quality, structured data. In doing so, it mitigates hallucinations in language models and unlocks new analytical avenues for character studies from a distant reading perspective. For example, researchers could trace the narrative evolution of villains across directors' works or identify cross-media patterns of villains sharing similar attributes, thus moving beyond descriptive statistics toward relational insights.

In conclusion, this study constructs the VillainScope dataset and applies topic modeling to uncover villains' universal characteristics. By overcoming the limitations of prior qualitative research, it introduces a novel methodological framework for villain studies. Moreover, by proposing the expansion of VillainScope into a knowledge graph, the study deepens the scholarly potential of distant reading approaches. This enriched dataset enables analyses that move beyond stereotypical villain portrayals to examine variations shaped by works, genres, and creators. Ultimately, it provides profound humanistic insights into how changing societal values are projected onto narrative characters across media.

* This work is a revised and complemented part of the author's Master's thesis, titled 'Villainscope: A Study of Emotion Analysis and Constructing a Dialogue Generation System Based on a Villain Dataset,' which was submitted to The Graduate School of Hongik University in 2025.

** GitHub: https://github.com/eiloppang/VillainScope_project

Keyword

Villain, Topic modeling, Graph-based RAG(Retrieval-Augmented Generation), Distant Reading, Digital Humanities

Reference

- [1] Bandy, J., & Vincent, N. (2021). Addressing “documentation debt” in machine learning research: A retrospective datasheet for bookcorpus. arXiv preprint arXiv:2105.05241.
- [2] Mostafazadeh, N., Chambers, N., He, X., Parikh, D., Batra, D., Vanderwende, L., & Allen, J. (2016). A corpus and cloze evaluation for deeper understanding of

commonsense stories. Proceedings of the 2016 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (pp. 839–849).

[3] Finlayson, M. A. (2017). ProppLearner: Deeply annotating a corpus of Russian folktales to enable the machine learning of a Russian formalist theory. *Digital Scholarship in the Humanities*, 32(2), 284–300.

[4] Brahman, F., El-Batal, T., Muresan, S., Dligach, D., & Muresan, S. (2021). “Let Your Characters Tell Their Story”: A Dataset for Character-Centric Narrative Understanding. arXiv preprint arXiv:2109.05438.

[5] Papoudakis, A., Lapata, M., & Keller, F. (2024). BookWorm: A dataset for character description and analysis. arXiv preprint arXiv:2410.10372.

[6] Baruah, S., & Narayanan, S. (2024). CHATTER: A Character Attribution Dataset for Narrative Understanding. arXiv preprint arXiv:2411.05227.

Transnational Negotiation Networks and the Dual Roles of Hong Merchants in Qing

Liqiao Ni, Xinbei Song, Xuan Sun, Jie He

School of Architecture, Harbin Institute of Technology, Shenzhen, Shenzhen 518055, China

Corresponding author:Jie He

Abstract

During the pre-globalization era, the Canton System served as the Qing government's institutional framework for regulating Sino-Western trade and managing international relations. This study focuses on the Hong merchant guilds operating within the Guangzhou System during the Qing Dynasty. By leveraging AI's capabilities in distant reading, visual reading, and perception capabilities, it examines their dual identity as both “godfathers of foreign merchants” and “prisoners of the system.” While monopolistic privileges enabled them to dominate trade and convey official policies, they were simultaneously constrained by the collective guarantee system and bureaucratic impositions. Through the analysis of transnational correspondence networks, this study reveals how these merchants, acting as institutional intermediaries, not only sustained trade operations but also developed adaptive strategies to address the structural challenges presented by China's integration into the global trade system. This study selected 106 original letters from 1792 to 1810 between Chinese and Western institutions, sourced from the British East India Company archives. By

employing text mining, network analysis, and knowledge graph technologies to interpret historical actors, this study reveals the operational mechanisms of transnational negotiation networks within the Canton System and the dual roles of the Hong merchants. It is achieved through three dimensions: presenting transnational negotiation interaction networks, analyzing the functions of diverse actors, and reconstructing the image of the Hong merchant groups. The analysis first maps the networks of letter exchange, then identifies the roles of various actors, and finally focuses on the internal networks and individual profiles within the merchant group, revealing the structural dilemmas and personal strategies underlying their dual identities.

Study reveals that transnational negotiation networks formed a three-tiered network officials, merchants, and foreign traders with the Hong merchants as the pivotal link. Serving as the hub connecting various actors, these merchants occupied a core intermediary position in trade, judicial affairs, and maritime defense matters. Within this framework, Qing court officials leveraged the Hong merchants to enforce control, issuing administrative decrees and judicial rulings; British challenged established norms through legal cases and trade pressure, advancing claims for rights and requests for cooperation. The Hong merchants demonstrated high connectivity in domains like piracy suppression and trade mediation, demonstrating their “godfather” characteristics of proactively balancing conflicts. Conversely, in matters of national sovereignty, such as Macao affairs or legal disputes, their centrality significantly diminished or they were absent, revealing their “prisoner” characteristics with limited influence.

The transnational negotiation network revealed in this study reflects the conflict between the Canton System and colonial expansion in the Qing dynasty. As the executors of this network, the Hong merchants were granted monopolistic intermediary rights while simultaneously struggling to survive within a complex framework of Sino-foreign power dynamics. This system both sustained the Qing dynasty's trade order and, due to colonial pressures, served as a precursor to the old system's collapse. This study centers on historical correspondence as primary material, integrating digital humanities methodologies with AI technology deeply. It examines letter exchanges, strategic choices, and emotional interactions to reveal the power structures and operational mechanisms of transnational negotiation networks from a micro-level perspective. It focuses on the contradictory position of the Hong merchants caught between the tensions of being both “godfathers to foreign merchants” and “prisoners of the system.”

Keywords

Short Papers 3: Seeing at Scale: Vision Methods in DH

AI Faces: Assetization, Distant Perception, and the Digital Ethics Crisis

Nan Wang

+86 13722898993

Abstract:

The rise of **generative artificial intelligence** is systematically reshaping how we **distantly view and perceive** the human face. This paper takes the entertainment industry as a key site of analysis and proposes a four-phase process model termed “**facial digital assetization**”—the Auxiliary Asset Phase, the Malleable Asset Phase, the Circulatable Asset Phase, and the Agentive Asset Phase—to critically examine this profound transformation. This process marks the transition of the face from an intuitive image bound to the physical body and specific narratives, through a phase of becoming a computable data object susceptible to **computational analysis/distant reading** (rather than mere human intuition), and finally towards a quasi-agentive entity with commercial and interactive potential.

This research reveals that this non-linear evolution is essentially a co-evolution of technological logic, asset attributes, and power relations. In the Auxiliary Asset Phase, digital technology acts as an “advanced makeup brush,” serving the visual authenticity of specific works through 2D restoration and enhancement; facial data at this stage constitutes non-circulatable means of production, and public acceptance is based on a logic of “**restorative justice**.” The technological leap in the Malleable Asset Phase lies in **3D modeling**, where the face is fully extracted from its biological carrier for the first time, becoming an editable and deployable malleable model. This newfound “**separability**” triggers intense contention between the right of publicity and emerging digital asset rights, shifting audience acceptance logic towards a scrutiny of “**artistic necessity**” and “**emotional legitimacy**.”

With the maturation of digital asset management platforms, facial assets undergo

a fundamental shift in the Circulatable Asset Phase, transforming from specialized means of production into standardized commodities freely tradable on the market. Whether as the symbolic capital of virtual idols or as licensed assets for video game characters, facial data is integrated into capital circulation through the “**model once, license multiple times**” paradigm, yet simultaneously faces unprecedented legal challenges such as digital inheritance and the temporal limits of posthumous publicity rights. Presently, we are entering the Agentive Asset Phase, where **generative AI**, instead of replicating, synthesizes faces ex nihilo from vast datasets, pushing the nature of assets towards algorithmically generated agents capable of independent operation. The emergence of virtual influencers and AI actors signifies that digital faces have acquired a certain “**agentive**” **spark**, their value assessed not by resemblance to a real person, but by their market influence and personified setting.

It is crucial to emphasize that these four phases do not represent a simple linear succession but manifest in current industry practice as a complex landscape of intertwined and coexisting forms. This process precipitates challenges across three core dimensions:

1. **The Evolving Legal Void:** Moving from the contest between the right of publicity and digital asset rights to the legal ambiguities surrounding the ownership of **AI-generated faces** and the definition of digital heritage.
2. **Systemic Ethical Challenges:** The focus of controversy shifts from artistic authenticity and the motivational legitimacy of “**digital immortality**” to encompass issues of labor displacement, crises of social trust, and the potential erosion of human dignity.
3. **The Reconstructed Perception Paradigm:** The audience's logic of acceptance evolves from pursuing “**technical restoration**,” through examining “**ethical justification**,” to ultimately facing the complete dissolution of benchmarks for authenticity when confronted with prototype-free, generated faces.

By systematically mapping this process, this paper aims to provide a critical analytical framework for understanding the dilemmas of digital identity, rights governance, and humanistic values in the AI era. This research not only responds to the conference's core concern regarding how technology reshapes paradigms of cultural **analysis (Distant Reading)** and cultural **reception (Viewing/Perceiving)**, but also strives to offer a critical perspective for constructing a future governance framework that can harness technological creativity while safeguarding human value and dignity.

Keywords:

Facial Digital Assets; Assetization Process; Right of Publicity; Generative AI; Digital Ethics

Distant Viewing Inequality: A Digital Humanities Study of Joseon Conscription

Kunha KIM

KADH member / Research Professor in Sogang University(SOUTH KOREA)

The military service system of early Joseon Korea was nominally founded on the principle of “conscription in proportion to household registration (戶口比例徵兵).”

Yet the degree to which this principle was implemented equitably across regions has rarely been verified through quantitative and systematic analysis. This study reexamines the equity of military obligations in the early Joseon period by analyzing the Sejong Sillok Jiriji (Geographical Treatise in the Annals of King Sejong, 1454), which records data on households (戶), population (口), and soldiers (軍丁) for 334 administrative units nationwide. The research employs a set of digital humanities methodologies, including text mining, historical statistics, GIS visualization, and exploratory AI-assisted interpretation.

A distinctive feature of this project is that it does not rely on a single digital humanities method. Instead, it integrates multiple techniques in a problem-driven manner to address the specific research question of conscription equity. In the preprocessing stage, XML-encoded primary sources were parsed and structured through text mining methods, allowing household, population, and soldier data to be systematically extracted. This provided a basis for quantitative evaluation that moves beyond traditional manual data handling in historical statistics.

In the analysis stage, statistical approaches were employed to measure correlations among households, population, and soldiers, while inequality indices such as the Gini and Theil coefficients were applied to assess the fairness of military burdens across regions. By adopting these digitalized historical statistical techniques, the study was able to evaluate the degree to which the official principle of proportional conscription was upheld, as well as to identify regional variations and deviations from the norm.

To further examine spatial patterns, GIS was utilized to visualize the distribution of military obligations across localities. This spatial humanities approach enabled

“distant viewing” of inequality, allowing macro-level patterns—such as clusters of heavier or lighter military burdens—to be discerned at a glance. GIS visualization not only provided insights into regional disparities but also demonstrated how digital humanities tools can extend traditional historical inquiries into new visual and analytical dimensions.

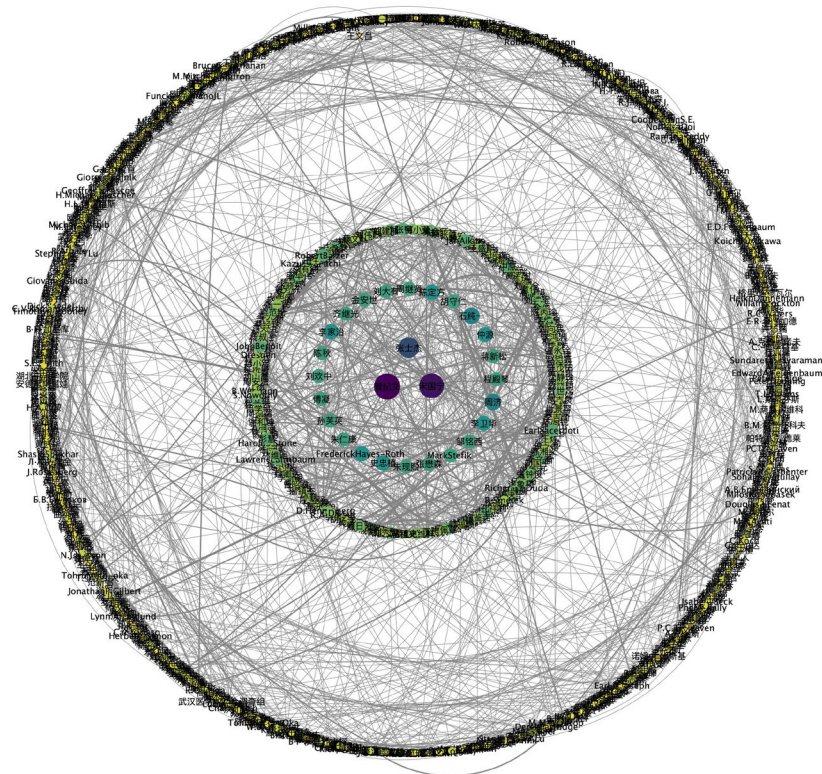
In addition, this study explored the potential of AI-assisted interpretation in a preliminary fashion. AI has shown remarkable capabilities in image analysis, and we tested its application by tasking it to interpret GIS visualizations generated in this project. By re-analyzing spatial outputs through AI, we were able to explore new perspectives on the same data and confirm the possibility of leveraging AI to augment human interpretation. While human historians remain central in contextual analysis, this experiment suggests that AI can serve as a complementary lens for examining patterns in visualized historical data.

In conclusion, this study confirms that while early Joseon’s military service system generally adhered to the principle of proportional conscription, significant regional inequalities nonetheless existed. Methodologically, the contribution of this research lies in its integrative approach: combining text mining, digitalized historical statistics, GIS visualization, and exploratory AI-assisted interpretation in order to address a concrete historical question. Rather than showcasing a single tool, the project demonstrates how digital humanities methods can be mobilized collectively in a problem-driven way to serve the core inquiries of historical scholarship.

Interdisciplinary Collaboration: Visualize AI's Leapfrog in Post-socialist China

Ye ZHAO

Research Assistant in the Department of Cultural and Religious Studies, Faculty of Arts, The Chinese University of Hong Kong.



The prehistory of artificial intelligence (AI) in China has been contoured vividly beyond the narratives of big personalities like Qian Xuesen and Song Jian. The great contributions of the mid-level researchers' role in improvising with the influx of theories related to information, computation, and machinery have reflected the reconfiguration of fantasies both in the industrial and academic sectors in China. In the late 1960s and early 1970s, a period of “Electronic Great Leap Forward (*dianzi dayuejin*)” was pumped up. What has been inherited from this revolution? Rather than solely historicizing the indigenous roots of computing and AI in China, this project probes into more specific scientific inquiries, crystallizing when the “leapfrog” started in the post-socialist era of China, and visualizing how such emic fantasies have ever scaled from the late 1970s to the 1990s.

The project is empirically based on the study *Machines, Cybernetics, and Computers: Sketchy Prehistories of AI in China*. After building up a dataset of 265,593 articles from 1949 to 1990 downloaded from China National Knowledge Infrastructure (CNKI), one of the most influential digital databases in China, the project firstly yields and analyzes myriad bibliometric data through web scraping. The project selected 7 keywords in all, **ren gong zhi neng** [artificial intelligence], along with **kong zhi lun** [cybernetics], **xin xi** [information], **qing bao** [information refers to cryptology], **dian zi ji suan ji** [electronic computer], **ji qi** [machine], and **zi dong hua** [automation]. Leveraging Cytoscape, a visualization tool for social network analysis (SNA), the project has then constructed massive master

networks of collaboration among the mid-level researchers, hosting 54,472 nodes and 63,735 edges in all. Beyond that, 56 sub-networks are closely identified and analyzed through bibliometric study. By interpreting the attributes of these sub-networks, the project also illuminates the trajectories of interdisciplinary cooperation in the fields of AI, machines, computers, and information from the early 1950s to the late 1990s.

Stemming from the contributions in the project *Machines, Cybernetics, and Computers: Sketchy Prehistories of AI in China*, this study narrates the digital prehistories in a manner of distant reading. The results of social network analysis showcase that the collaboration in the field of artificial intelligence began in the year 1979, with a total of 1671 cooperative researchers and 1780 cooperative relationships. Collaboration at the category and topic level elucidates the interdisciplinary traits of AI research, covering a wide spectrum like electronic technology and information science, automation technology, agricultural technology, scientific research management, mathematics, biology, psychology, publishing, geology, Chinese language and characters, clinical medicine, etc. Collaboration at the affiliation and institution level signifies the regional disparities, mainly concentrating in Northern China. The collaboration in the other 6 fields launched in the 1950s, while simultaneously leapfrogging in the year 1979 as well, with a deluge of scientific publications onward this decade. However, in the field of cybernetics, a 3-year persistent zero collaboration from 1979 to 1981 is also evidently witnessed. The advancement of collaboration within a variety of disciplines is fundamentally aligned with the increasing trends of journal publications after the end of the Cultural Revolution. By social network analysis and distant reading, the project fossilizes the endeavours of mid-level researchers made, contouring their contributions to seeding the knowledge of AI in the Post-Mao era.

The findings of this project fill the gap of narrating the prehistories of AI in China after the 1970s from the stance of empirical study. To my knowledge, this is the first study leveraging tremendous digital evidence to engage with the history of post-socialist China. The project sheds imperative light on the rethinking of the lesser elites—scientists and researchers working in various institutions—for developing holistic and plural histories of Chinese technology. The unveiling of historic plurality contributes to flourishing our perception on the ebbs and flows of the AI revolution in modern China, Asia, and even the world.

Reimagining Reality: Text-to-Image AI and Evolving Practice of Hong Kong Artists

Chun Fan Wong

Lingnan University

This paper explores the burgeoning integration of text-to-image artificial intelligence (AI) tools within the creative practices of contemporary visual artists in Hong Kong. Situated within the broader context of the AI Revolution and its impact on distant viewing and perceiving, this research investigates how these artists are leveraging platforms such as DALL-E 2, Midjourney, and Stable Diffusion to generate novel imagery, challenge traditional artistic boundaries, and engage with themes resonant within the unique cultural landscape of Hong Kong. Drawing upon a mixed-methods approach encompassing artist interviews, case study analysis of specific artworks, and critical examination of exhibition catalogues and online presence, this study examines the diverse ways in which Hong Kong-based artists are employing text-to-image AI. We identify several key trends: (1) the use of AI as a tool for conceptual exploration and visual brainstorming, allowing artists to rapidly prototype and iterate on ideas; (2) the incorporation of AI-generated imagery into mixed-media works, blurring the lines between human and machine authorship; (3) the deployment of AI to create site-specific installations that respond to the urban environment of Hong Kong, reflecting its density, history, and socio-political dynamics; and (4) the critical engagement with AI's inherent biases and limitations, prompting artists to question notions of authenticity, originality, and the role of the artist in the age of algorithmic creation.

Furthermore, this research addresses the ethical and epistemological implications of AI-assisted artmaking. We analyze how Hong Kong artists are grappling with issues of copyright, intellectual property, and the potential for AI to perpetuate or amplify existing cultural stereotypes. Special attention is given to the use of Sinophone prompts and datasets, exploring how artists are navigating the complexities of language and cultural context within AI-generated imagery. In light of Hong Kong's strategic position as a nexus of East/West cultural exchange, this paper argues that the adoption of text-to-image AI by local visual artists represents a significant development in the evolution of digital art practices. By examining their creative processes, aesthetic choices, and critical reflections, we gain valuable insights into the transformative potential of AI to reshape artistic expression, challenge conventional modes of seeing, and foster new forms of cultural dialogue within and beyond the region. This research

contributes to the growing field of digital humanities by providing a nuanced understanding of how AI is being creatively appropriated and critically examined within a specific artistic community, offering broader implications for the future of art and technology.

Short Papers 4: Image Synthesis, Immersion & Multimodality

Lianhuanhua in the Age of AI: Multimodality, Distant Perceiving, and the Ethics

Aijia Zhang

Heidelberg University

The accelerating AI revolution is bringing a new range of possibilities for digital humanities research that has heavily relied on rule-based and statistical tools. Methods like keyword search, n-gram analyses, metadata visualization, and basic image annotation have facilitated forms of “distant reading” (Moretti) and “distant viewing” (Tilton and Arnold) and have proven value in navigating large corpora. However, as the forms of data become complex, new tools and methods are required to meet the needs of research into multimodal artefacts. This paper focuses on *lianhuanhua*, a sequential illustrated picture book form that circulated widely in China during the 20th century, as a case to study the promises and limits of digital humanities in the age of AI. Produced in palm-sized format, with an image-to-text layout, and published in tens of thousands of titles and hundreds of millions of copies, *lianhuanhua* presents itself as a promising medium for data-driven multimodal computational research. By reviewing the AI-assisted tools I used to approach *lianhuanhua*, I reflect on the challenges and affordances of tools like transformer-based OCR, unsupervised computer vision models, and text-to-image generative AI, and by discussing the reconfigured practices of distant reading, I propose “distant perceiving” as a method to interpret multimodal data in AI-assisted cultural analytics.

My study addresses these challenges by assembling and processing a large corpus of approximately 3,000 volumes of *lianhuanhua* collected at Heidelberg University, using text mining, machine learning, and computer vision techniques to analyze their visual and textual dimensions. Through distant perceiving, I aim to uncover the ideological construction underneath the narratives of *lianhuanhua*

stories. Concretely, my project employs three core methods: 1) AI-assisted OCR to extract text from digitized lianhuanhua panels, 2) convolutional neural networks to identify and cluster visual features (such as recurring character types, gendered depictions, and stylistic patterns), and 3) natural language processing (using Chinese segmentation and topic modeling) to analyze thematic and narrative patterns. These tools enable new forms of inquiry that are impossible through human close reading alone, such as tracing major thematic changes of lianhuanhua across decades, identifying the visual construction of women figures in mass-market productions, and extracting strategies adopted in the ideological propaganda.

Yet, the project also highlights the methodological and ethical tensions that accompany AI-assisted cultural analytics, either unique to the medium of lianhuanhua or longstanding in the field of digital humanities. First, on the methodological pane, when I use clustering algorithms to cluster character images or extract narrative themes, regarding the question of authorship and agency, how to balance statistical regularities and cultural nuances in analysis? Then, regarding the application of tools, how to generate clean data with the OCR model I applied, which struggles with some lianhuanhua volumes in traditional Chinese vertical layout? This also brings questions of authenticity and authority: what does it mean to write cultural history based on machine-driven correlations, especially when the results may flatten ambiguity; how to make well-grounded cultural historical arguments with statistics while defending their legitimacy? Second, on the ethical aspect, regarding the issue of bias and opacity, how to design a fair annotation scheme for recognizing female characters in lianhuanhua to avoid a priori gender stereotypes; how to interpret the results generated by the black box of the algorithm? These limitations and challenges force me to confront the interpretive blind spot of algorithmic perception with a rigorous research design and a considered application of computational methods.

Rather than viewing the mentioned challenges as obstacles, I argue that they can serve as productive entry points for rethinking the epistemology of digital humanities in Asia and beyond, by transforming the limitations into affordances of each technique. In the case of lianhuanhua, machine-assisted methods do not replace traditional modes of reading and contextualization, but instead generate patterns, anomalies, and provocations that necessitate re-examination through historically grounded close analysis. For instance, when computer vision identifies a recurring template for "female soldier" characters, close reading of individual panels reveals the interplay of gender ideology, visual convention, and

historical moment. When topic modeling surfaces clusters of terms linked to "the CCP", "the war", and "the people", I can connect these to the ideological struggles, national identity building, and the propagandistic strategies by placing these terms back into their contexts with the aid of large language models. In this way, the encounter between distant perceiving and close reading becomes dialogical rather than oppositional, focusing on generalities while maintaining specificities.

The broader implications of this case study of *lianhuanhua* extend beyond contemporary Chinese history and popular culture. First, it highlights how multimodal cultural corpora that consist of both words and images require scholars to move beyond purely text or image approaches in digital humanities. Second, it underscores the importance of critical reflexivity by calling attention to the biases, limitations, and epistemic stakes of AI tools when selecting from the toolbox. Third, it contributes to the ongoing discussions about the global scope of digital humanities, emphasizing how Asian cultural materials, with their unique histories of production, circulation, and preservation, both challenge and enrich theoretical frameworks developed primarily in Euro-American contexts, and introduce a high-quality pre-aligned dataset to the field.

In sum, I argue that *lianhuanhua* offers a case study for a fertile site for thinking through the opportunities and dilemmas of AI-assisted cultural analytics. This study thus shows how large-scale, multimodal analysis can reveal new dimensions of visual-textual culture, while also raising fundamental questions about bias, authenticity, and the interpretive horizons of machine perception. By placing Chinese *lianhuanhua* in dialogue with global debates in digital humanities, I reflect on the possibilities and limits of engaging with mass cultural archives in the age of AI.

Trends in Digital Humanities: Pandemic and Distant Perceiving in the Age of AI

Richard Ukwunna

Alvan Ikoku Federal University of Education, Owerri, Imo State, Nigeria
Organisation of African Academic Doctors, China

The COVID-19 pandemic materialized not only as a historical public health crisis but also as a substantial disruptor of scholarly paradigms, requiring an extraordinary reliance on computing technologies. Within the field of digital humanities (DH), this time accelerated the incorporation of methods and tools

that, beforehand, faced skepticism or uneven adoption. Prior to this pandemic, debate within DH often featured concerns about digitization, disparities in material resources, and the epistemological implications of computational methods. The pandemic, however, precipitated new priorities that necessitated a radical reorientation of scholarly discourse and methodological practice.

This paper will examine how the pandemic reshaped DH discourse, with a special focus on its impact on the adoption of intelligence, large-scale data analysis, artificial intelligence, and multimodal platforms. Focusing on a systematic and thematic analysis of scholarship published between 2015 and 2025, this study will reveal important continuities and breaks between pre- and post-pandemic trends. By particular reference to how "distant reading," "distant viewing," and "distant perceiving" were redefined in terms of necessity (the remoteness of infrastructures and pedagogy) and opportunity (LLMs, computer vision, and retrieval-augmented generation), it will show important continuities and breaks between pre- and post-pandemic trends.

The research will reveal that the pandemic amplified systemic gaps of access to infrastructure and literacy to an equal extent, which strained immediate debates about inclusivity, accessibility, and suitable AI ethics. While pre-pandemic DH often framed computation as supplementary to humanist inquiry, post-pandemic research increasingly integrates AI as constitutive of epistemic production, reimagining questions of authorship, authenticity, and interpretive control. In tracing these discursive trajectories, the paper will highlight the pandemic as a mobilizing agent that links earlier fears to the current AI revolution. It will argue that the field now needs to contemplate DH as something beyond a set of digital methodologies but as a reflexive and responsive field that negotiates cultural, technological, and ethical complexities of the twenty-first century.

3D Mixed and Augmented Reality (MR/AR) with AI in Archaeological Fieldwork

Hayk Azizbekyan^{1, 2}, Peter Cobb¹

¹ *The University of Hong Kong*

² *Institute of Archaeology and Ethnography, NAS, RA*

Archaeology is fundamentally a three-dimensional discipline, yet its documentation and analysis have traditionally relied on two-dimensional methods to help view and perceive the distant human past. In recent years, the increasing accessibility of digital tools has enabled archaeologists to scan ancient spaces

and artifacts as precise 3D models. These models offer new opportunities for analyzing spatial relationships and object morphology from the human past. Recent advances in Artificial Intelligence (AI) can also help to enhance our ability to use and interpret these data.

While many researchers have used digital 3D methods for data capture and then interpreted the 3D models in laboratory settings, technological constraints have historically limited their application directly in the field—particularly at excavation sites. However, the emergence of head-mounted mixed and augmented reality (MR/AR) devices presents a promising avenue for integrating digital data directly into excavation environments, especially when using AI-enabled ways to interface with the data.

In collaboration with student engineers, we have conducted a series of experiments using various MR/AR headsets at our archaeological site in Armenia. These trials have revealed several compelling use-cases where immersive technologies can enhance fieldwork and support real-time decision-making. For example, virtual 3D models can be overlaid onto the excavation trench, allowing archaeologists to visualize and interpret data in-situ. This approach not only enriches spatial understanding but also shifts analytical tasks—typically reserved for post-fieldwork desk analysis—into the active excavation process.



Moreover, MR/AR glasses offer the potential advantage of hands-free information collection and access, enabling excavators to receive constant updates and contextual data without interrupting their workflow. Despite these benefits, our

experiments have also highlighted significant limitations in current MR/AR technology, including issues with outdoor visibility, device ergonomics, and software compatibility, which currently hinder widespread adoption.

We have turned to two methods to help us overcome the challenges of using AR/MR headsets at the site. First, we built our own custom AR smart glasses and tested them in the field during the summer of 2025. Second, we are implementing Artificial Intelligence (AI) methods throughout our processes to improve the ways that we can interact with 3D data in order to better read the spatial and visual aspects of the human past, in-situ.

Our new custom AR smart glasses provide a vast improvement on both the wearability of the device outdoors in the sun, and in the amount of information that can be displayed to the archaeologist. For these glasses, we also implemented an AI-agent to improve voice recognition to control the user experience. This enabled archaeologists to add or retrieve data using voice commands even within our noisy outdoor environment, or with non-native accented English. With such hands-free data interaction, we eliminate the need to use the small touchpad on our prior off-the-shelf AR glasses—especially difficult when wearing gloves covered in soil.

We are next exploring how Generative AI (GenAI) can help us to manipulate and create 3D models, for scientific study as well as public education. In a new project, we are experimenting with using GenAI to help students in a university course reconstruct ancient buildings. We hope this can help archaeologists and others to more quickly imagine what ancient sites would have looked like in the past, and how humans would have interacted with these sites.

Ultimately, our goal is to redeploy digital 3D data in ways that directly support archaeological research and practice during fieldwork. By embedding virtual models into the visual environment of archaeologists, we aim to enhance knowledge, improve decision-making, and foster a more dynamic and informed research process.



Short Papers 5: Computational Literary Studies across Languages

A Corpus Stylistic Approach to Emotive Language in Joyce's *Dubliners*

He Huang

Beijing Normal University

Emotion plays a central role in understanding Joyce's *Dubliners* and remains the focus of scholarly debate. Adopting a corpus stylistic approach, this study uses self-built corpora and the Wmatrix semantic analysis tool to examine the foregrounded features of emotive language in this short story collection from the dimensions of both external and internal deviation. The study reveals that, in terms of external deviation, emotion density in *Dubliners* is generally lower than in the reference corpus, while the frequencies of two positive emotion types, happiness and liking, are notably higher. The study also reveals that, in terms of

internal deviation, emotion density varies significantly across individual short stories, along with noticeable differences in the frequency and diversity of emotion types. The study will shed light on the complex texture of emotive language in *Dubliners* while introducing a new method and perspective for studying emotion in literature.

Key words: corpus stylistics; foregrounding; emotion density; emotion type; *Dubliners*

Reimagining Authorship in Contemporary Chinese Poetry

zhijing wang

nanyang technological university, school of humanities

Full Title: Reimagining Authorship: AI, Translation Tools and Speculative Poetry in Contemporary Chinese Poetry

Abstract: This research examines how the imagination and application of technological agents —ranging from imaginary robots, translation software AI models —challenge traditional conception of authorship through reshaping subjectivity in poetry. Focusing on contemporary Chinese poetry as example, it argues that technological agents introduce a polyphonic structure semantically and syntactically across different types of human-machine interactions, which brings the emergence of the notion of “algorithmic authorship”.

It gives textual analysis of cases in a spectrum of human-technology literature, including Lin Yao-de(林耀德) and Tang Juan's(唐娟) imagination of “the voice of machine”, the application of translation tools in Hsia Yu's(夏宇) poems “Pink Noise” (粉紅色噪音), and Microsoft AI “xiaobing's” creation of a female “personality” via LSTM model. At the first stage, poets imagine “robots’ subjectivity” by the techniques of concrete poetry to imitate non-human language and behavior, which forms an intersubjective dialogue through semantic descriptions. However, when technologies are involved in poem writing, author’s intention intertwined with algorithms is presented in a hybrid text, where readers can only picture author’s “subjectivity” between text and its algorithms through the peculiarity of syntactics and semantics rather than only following the text. The change of hermeneutics in this spectrum reveals how technology as an another “unknown author” shapes subjectivity correspondingly within and outside the text. By analyzing the cases from non-AI to AI-assisted text, this research emphasizes how different technological agents significantly change readers’ hermeneutic

methods, rather than focusing on AI-generated text itself only. By shifting attention from textual outputs to the transformations of authorship, the study challenges technocentric views and calls for greater attention to the formation of technological epistemology.

Russian Translations of Contemporary Chinese Poetry: A Case of Distant Reading

Ivan Alekseev

Southwest Jiaotong University (Chengdu)

Among globally connected literary traditions, Chinese-Russian relations form one of the most distinctive tandems. The end of the 20th century marked a turning point for both of these cultural domains: the PRC emerged as a major exporter, sparking a surge of interest for learning Chinese within Russia. This trend, in turn, has led to unprecedented rise in translations of Sinophone literature. However, at the same time, the advent of internet-based technologies disrupted centralized control of the governing authorities over the circulation of literary works. Against this backdrop, the proposed paper focuses on the subfield of poetry – a genre whose nation-building function now warrants re-evaluation.

Building on distant reading techniques and a personal corpus, this paper analyses Russophone publications of contemporary Chinese poetry from 2001 to 2025. Datasets collected by Anzhelika Shumilova, Yulia Dreyzis and the moderators of the website chinese-poetry.ru will be manually integrated with the presenter's own observations. Supplementary information will be gathered from such prominent translators as Natalia Azarova, Dmitry Kuzmin, Kirill Korchagin, among several others. The preliminary selection includes eleven anthologies, eight poetry collections and twenty-two journals – both print and digital (at the moment of submission, the sample remains in development and is expected to be finished by the end of this year).

The first stage of analysis involves multiple means of visualization – scatter plots, pie charts and network maps – addressing poets' age and gender ratios, as well as the number of poems published. Particular attention will be given to correlations between translators and the other parameters of the dataset. The quantitative calculations will be supported by detailed structural and thematic analysis of the material in terms of paratextual elements (design, forewords, annotations etc.). Where relevant, comparisons with the earlier Soviet period will be drawn. Ultimately, the paper seeks to highlight what kind of authors and

poems constitute the image of “poetic China” in the Russian-speaking reading circles. The additional task is to evaluate how this translated canon aligns with (or diverges from) to its domestic counterpart. By detecting gaps and biases in selection and representation, the study aims to assess whether “exported” poetry still reflects the cultural policy of the PRC, and what other forces are now shaping the field.

The main work hypothesis posits a rather nuanced markup of the translation landscape. While the large-scale projects sponsored by official authorities tend to offer a generalized and largely nativized portrayal of Chinese poetry, independent initiatives provide more fragmented perspectives, targeting either sinologists or professional writing community. In the same vein, the role of Chinese state-affiliated experts in canon formation appears to diminish significantly over time. Thus, translators’ strategies could tentatively be categorized into three broad vectors: traditional, modernist (or experimental) and colloquial (or marginal) – echoing the existing macro-groups within Mainland China. Male poets born between 1950 and 1970 are expected to constitute the core of the sample; yet, journal entries will likely balance the gender and generational paradigm. From this vantage point, the presumable dominance of PRC authors outlines a trajectory toward further diversification of the discourse to include other Sinophone regions, such as Malaysia, Singapore, and even the United States.

Vector Poetics: Parallelism and Cognitive Geometry in Chinese Regulated Verse

Maciej Kurzynski¹, Xiaotong Xu², Yu Feng¹

¹ *Lingnan University, Hong Kong*

² *Peking University*

Language models represent word meanings as vectors in a multidimensional space. This study leverages this property to explore one of poetry’s most elegant structures: parallelism. While this literary device appears across cultures, its prominence in classical Chinese poetry remains unparalleled, a feature often attributed to the unique nature of the Chinese writing system, where uninflected, monosyllabic units, represented visually as square-shaped characters, allow for a strict, position-by-position matching of poetic lines. In a classic couplet by the Tang poet Wang Wei 王維 (699–761), for instance, the line “The bright moon shines between the pines” 明月松間照 is mirrored by “A clear spring flows over

the stones" 清泉石上流, where "bright" corresponds to "clear," "moon" to "spring," and so on, creating a syntactic and semantic symmetry that invites the reader to linger between the lines. The very terms used to describe this phenomenon, both in the West (from the Greek *parallelos*, "side by side") and in China (*duizhang* 對仗, evoking symmetrical honor guards), are rich with spatial imagery. Yet, over centuries of literary analysis, this physicality has often been sublimated into metaphysical or symbolic interpretations. Artificial intelligence offers a unique opportunity to revive these dormant spatial connotations, allowing an investigation of parallelism not just as a symbolic device, but as a tangible geometric phenomenon.

The project pursued a dual objective. The first was to establish an empirical baseline for the automatic detection of parallelism by benchmarking the performance of state-of-the-art, general-purpose language models (LLMs). While models like GPT-4.1 and DeepSeek R1 prove effective for this classification task, their application comes with caveats. As general-purpose tools not specifically trained for this type of literary analysis, their inner workings remain largely opaque. Furthermore, their use can lead to specific errors, including hallucinations that misalign concepts by ignoring positional constraints, incorrect word segmentation that compares single characters to multi-character phrases, and inconsistent tokenization that disrupts the fundamental one-to-one correspondence crucial for Chinese parallelism. The second, and central, objective was therefore to construct an interpretable, task-specific model to move beyond simple classification and investigate the geometric mechanisms that encode parallel structures.

The creation of the bespoke classifier began with the compilation of a dataset of over 142,000 regulated poems (*lǜshi* 律詩). An initial heuristic—labeling inner couplets as parallel and outer ones as non-parallel, which is one of the central features of regulated poetry—was found to introduce significant noise, as many poets consistently employed parallel couplets throughout the entire poem, while others completely avoided them, thus retaining the compositional freedom characteristic of pre-Tang poetry. To refine the training data, a filtering technique based on network analysis was developed. A symbolic network was constructed where each node represented a Chinese character, and an edge connected any two characters that appeared in corresponding positions within nominally parallel couplets. The application of the Louvain method for community detection revealed eight robust communities of characters, representing statistically significant semantic and grammatical groupings (e.g., verbs, numbers, geographical names). This character network served as a filter to

programmatically prune the dataset and remove the false positive (inner but non-parallel) and false negative (outer but parallel) couplets. The resulting SikuBERT-based classifier, fine-tuned on this cleaned data, achieved an F1 score of 0.78, a performance comparable to the benchmarked LLMs but with the crucial advantage of architectural transparency.

Analysis of the classifier's internal mechanisms revealed a distinct geometric signature for parallelism that can be found in the model's attention mechanism. Attention allows the model to weigh the relevance of words to each other through a system of "queries" and "keys." We hypothesized that for a couplet to be classified as parallel, the corresponding characters in each line must provide similar responses to the queries of the classification token (CLS). The results confirmed this hypothesis with high statistical significance. In parallel couplets, the "key" vectors generated by corresponding characters point in the same direction, creating a pattern of geometric isomorphism that is absent in non-parallel lines. This alignment is quantitatively stark: the average Pearson's correlation coefficient between the attention distributions of the two lines reaches 0.60 for parallel couplets, while for non-parallel couplets, the correlation is only 0.03.

Insofar as the structures learned by artificial neural networks can offer insights into cognitive processes happening in the brain, our findings carry potential implications for understanding the human experience of poetry. In particular, our discovery finds a theoretical grounding in Peter Gärdenfors's theory of cognitive semantics, which posits that the human mind organizes concepts not only as symbolic propositions but also within multidimensional conceptual spaces partitioned into distinct, convex regions around prototypes (Voronoi tessellation). We propose that parallelism functions as a cognitive bridging mechanism that temporarily unites disparate regions of this conceptual space. For example, when a poet pairs "sound" with "color," the parallel structure coerces these concepts into a shared dynamic role, reshaping their default representations from static properties into active, flowing event vectors. The AI model succeeds by detecting the resulting geometric congruence; the human reader experiences this same congruence as a synesthetic, embodied insight into the nature of the world. In this discovered geometry, poetry realizes its potential not merely to imitate appearances, as Plato would have it, but to guide the mind in appreciating the latent symmetries that structure meaning itself.

Perplexity as a Measure of Cognitive Freedom: Defamiliarization in Modern Chinese

Maciej Kurzynski

Lingnan University, Hong Kong

This study explores the stylistic tension between predictability and surprise by employing the predictive mechanism of large language models (LLMs) as a proxy for historically-situated readerly expectations. This approach is informed by a growing body of research revealing a significant alignment between the internal representations of LLMs and neural activity in the human brain. Connecting to a century-old dialogue between probabilists and humanists—from Andrey Markov’s analysis of Pushkin to Claude Shannon’s information theory—this work uses perplexity to quantify a model’s “surprise” when encountering a text. Such a metric allows for new, empirical insights into the tension between the familiar and the unexpected, a dynamic central to Viktor Shklovsky’s theory of defamiliarization (*ostranenie*). In this framework, style can be understood not as a static property of a text, but as a dynamic, processual engagement with a reader’s cognitive and predictive faculties.

The core of the research is a two-stage simulation designed to model the shaping of a reader’s linguistic worldview in post-1949 China. First, a GPT-style Transformer model (223M parameters) was pre-trained from scratch on a large, high-quality, and general-purpose corpus of modern Chinese (FineWeb Edu V2). This “base model” represents a neutral reader with a broad, statistical understanding of the language. In the second stage, this model was fine-tuned exclusively on the *Selected Works of Mao Zedong* 毛澤東選集 for five epochs.

This process simulates the intense, repetitive exposure to a single, dominant idiolect, effectively creating a specialized reader of “Maospeak”—the militant, ideologically charged language style that saturated Chinese public life during the Mao era (1949-1976) and continues to influence the Chinese language to this day.

By tracking the decrease in the model’s perplexity on the Mao corpus before and after fine-tuning, the study identifies the core phraseology that becomes “automatized” through repeated exposure. The phrases with the most significant drop in perplexity are central to the era’s political machinery, including canonical lists of class adversaries (“landlords, rich peasants, counter-revolutionaries, bad elements, and Rightists”), specific labels for political targets (“unrepentant capitalist-roader”; “Soviet revisionist renegade clique”), and formulaic rhetorical structures (“resolutely, thoroughly, wholly, and completely annihilate”). Visualizing

these sequences as "perplexity landscapes" reveals a characteristic pattern: low-perplexity "canyons" of predictable slogans and jargon, interspersed with occasional peaks of surprise. This process offers a computational analogue for the Shklovskian concept of familiarization, where a powerful discourse creates a predictable linguistic universe that pushes its core tenets into the cognitive background.

This specialization, however, comes at a cognitive cost. The study demonstrates that as the model becomes an expert in Maospeak, its ability to predict the more varied and lexically diverse language of modern Chinese novels diminishes. The literary texts become comparatively more alien and surprising, a phenomenon termed "cognitive overfitting." This trade-off highlights the opposing principles at play in literary art. An analysis of excerpts from three major Chinese novelists illustrates how literature operates through defamiliarization:

- In Zhang Wei's 張煒 *The Ancient Ship* 古船 (1987), a character delivers a speech packed with authentic Maoist-era slogans. The fine-tuned model easily predicts these embedded phrases, demonstrating the method's ability to detect the intertextual presence of a dominant discourse within a literary work.
- In Zhang Ling's 張翎 *Aftershock* 餘震 (2010), a novel about the trauma of the Tangshan earthquake, the perplexity plot reveals high-surprise spikes on startlingly precise monosyllabic verbs (e.g., 愣, "to stun"; 扯, "to pull") and key nouns. These moments of high perplexity, which drive the narrative forward, are set against a low-perplexity scaffolding of conventional narrative phrasing, creating a dynamic interplay between a surprising figure and a familiar ground.
- In Dung Kai-cheung's 董啟章 *As Vivid as Real* 天工開物 · 栩栩如真 (2005), the author deliberately inserts Cantonese words (e.g., 嗰, "that"; 係, "to be") into standard written Chinese. These non-normative topolects, underrepresented in the model's training data, generate sharp perplexity spikes, disrupting the automatized perception of the standard Chinese language and forcing both human and machine readers to confront the text's cultural specificity.

Ultimately, this study suggests that style can be viewed as a "cognitive signature": a text's unique strategy for managing a reader's attention by orchestrating the dialectic between predictability and surprise. While engineered political language like Maospeak seeks to minimize perplexity and reinforce

ideology through self-similar, low-entropy patterns, literary language thrives on generating "non-anomalous surprise." Literature uses a predictable backdrop of narrative and linguistic convention to make its high-perplexity focal points (a startling metaphor, a disruptive dialect, a novelistic event) more impactful. This study suggests that while engineered discourses may seek to narrow the scope of thought, literature remains a vital training ground for cognitive freedom, teaching us to navigate, and even cherish, the unexpected.

The Event of Autofiction in English

Jeffrey Clapp

Education University of Hong Kong

The Event of Autofiction in English

While the term “autofiction” has been in use in French since the 1970s, it has only recently become common in English (Dix 2018). But why did English come to require this term, and what has it been used to describe? We approach these questions by gathering and exploring a corpus of autofiction in English. For text selection we rely on “genre ascriptions”: statements that a work is autofictional, whether found in academic discourse or literary discourse, on social media or the open web. Our corpus comprises works which are consistently and repeatedly described as autofiction across these domains. We suggest that corpus construction procedures like these, which have also been used to explore the “feminist novel” (Mandelman and Mukamal 2021) are generalizable and should be adopted more widely in literary studies, especially where genre boundaries are shifting or new categories are coming into view.

What is autofiction? A blend of fiction and autobiography. Yet the term has been contested; indeed some have offered satirical definitions which suggest that the concept is modish, vacuous, or both (e.g. Caplan 2021). We begin to reply by offering a basic quantitative description of autofiction, seeking regularities which distinguish autofiction in English from other forms of contemporary literature. In particular, we compare our new corpus with the CONLIT dataset (Piper 2022), which presents derived data from ~2500 works of contemporary literature. The CONLIT data is processed with a BERT-based annotation tool, BookNLP, which identifies text features ranging from character and entity identification to supersenses (Bamman 2021). As Mélanie-Becquet et al.(2025) have recently shown in introducing BookNLP-Fr, a French-language adaptation of the BookNLP

pipeline, BookNLP entity tagging can address subgenre classification problems like ours, which are of standing interest in computational literary studies (Hettinger et al 2016; Underwood 2016). Early results indicate that even more than other kinds of contemporary literature, English-language autofictions emphasize the depiction of “perceptual encounter” which Piper (2018) has identified as a distinguishing aspect of 21c literary writing in English. This result tends to confirm that autofiction in English comprises an avant-garde, indicative of a directional evolution in English-language literary expression. Because they emphasize internal reflection over external event, autofictions have often been described as “plotless” (e.g. Tanner 2022). Indeed some works frequently labelled “autofiction” are also described using the neologism “autotheory” (Cavitch 2022). We propose that autofictional “plotlessness” can be operationalized using the concept of narrative “circuitousness” introduced by Toubia et al (2021). This research on “nonlinearity” in narrative shows that distances in vector space can describe disjunctions in a story’s time, setting, or perspective. The measure has been applied to several test types and has shown predictive value for various aspects of reception (Berger & Toubia 2024; Guest & Yan 2025). In querying the circuitousness of the texts in the CONLIT corpus, Piper and Toubia (2023) discovered that Jenny Offill’s *Dept. of Speculation* (2014) was among the least circuitous texts, because in their assessment Offill’s book “focuses on one thing after another with respect to a single character’s internal life.” Offill’s book is a prominent example of autofiction in English, one of the best-attested across various interpretative communities. We follow up by exploring circuitousness as a characteristic of our autofiction corpus. We interpret the results in dialogue with recent research that suggests that “sequentiality” (a measure of next-sentence prediction) predicts differences in autobiographical and imagined stories (Sap et al 2022). We hypothesize that, like sequentiality, circuitousness in autofictional narrative may be able to signal the distinctiveness of autofictional writing with respect to adjacent forms, including the memoir and the novel.

Works Cited

- Bamman, D. (2021). BookNLP. <https://github.com/booknlp/booknlp>
- Berger, J., & Toubia, O. (2024). The topography of thought. *PNAS nexus*, 3(5).
- Caplan, W. (2021). 10 New Definitions of Autofiction. Lithub 21 October 2021. <https://lithub.com/10-new-definitions-of-autofiction/>
- Cavitch, M. (2022). Everybody’s autotheory. *Modern Language Quarterly*, 83(1), 81-116.
- Dix, H. (Ed.). (2018). *Autofiction in English*. Springer.

- Guest, N., & Yan, J. (2025). Circuitousness in Disclosure Narratives. Available at SSRN 4098951.
- Hettinger, L., Reger, I., Jannidis, F., & Hotho, A. (2016). Classification of literary subgenres. In Proceedings of DHd. <https://dhd2016.de/abstracts/vorträge-049.html>.
- Mélanie-Becquet, F. et al. (2024). "BookNLP-fr, the French Versant of BookNLP. A Tailored Pipeline for 19th and 20th Century French Literature". Journal of Computational Literary Studies 3 (1). 10.48694/jcls.3924
- Mendelman, L., & Mukamal, A. (2021). The generative dissensus of reading the feminist novel, 1995-2020: A computational analysis of interpretive communities. Journal of Cultural Analytics, 6(3).
- Offill, J. (2014). Dept. of Speculation. Alfred A. Knopf.
- Piper, A. (2018). Enumerations: data and literary study. University of Chicago Press.
- Piper, A. (2022a). The CONLIT dataset of contemporary literature. Journal of Open Humanities Data, 8.
- Sap, M. et al (2022). Quantifying the narrative flow of imagined versus autobiographical stories. Proceedings of the National Academy of Sciences, 119(45), e2211715119.
- Tanner, J. (2022). The legacy of literary reflexivity; or, the benefits of doubt. Textual Practice, 36(10), 1712-1730.
- Toubia, O., Berger, J., & Eliashberg, J. (2021). How quantifying the shape of stories predicts their success. Proceedings of the National Academy of Sciences, 118(26), e2011695118.
- Underwood, W. E. (2016). The Life Cycles of Genres. Cultural Analytics (May 23 2016).
-

Keynote Talk

Stacked Databases: Decolonizing Knowledge from Colonial Encyclopaedias to AI

Chia Wei Hsu

Artist, filmmaker, and curator

This presentation focuses on the issue of artificial intelligence in the information society through the conceptual framework of the database. It introduces several

different notions of databases — including the encyclopedic databases of the colonial era, material-based databases in archaeology, the technological databases of film history, and the databases of artificial intelligence — and examines these through the lens of the artist’s own research and creative practice. By tracing the historical development of databases, the presentation aims to explore the contemporary possibilities of the database as both concept and methodology.

A central component of the research is the Eye Filmmuseum’s archive of approximately 1,500 documentaries from the Dutch East Indies, produced between 1913 and 1945. These materials—ranging from family films to corporate and governmental records—provide diverse perspectives on filmmaking history, colonial life, and natural science.

From this archive, Hsu selected 250 copyright-free films and worked with engineers to train an AI model on this material. The AI segmented the footage into more than 30,000 individual shots and generated textual descriptions for each. These images and descriptions were then assembled into a dedicated database used to train a new model—an AI that “learns” from the visual culture of the Dutch East Indies.

This project approaches AI critically. The research also delves into the microstructure of AI hardware, particularly the properties of the CoWoS chip, a key technology in modern AI computing that enables chip stacking. Through this technology, the study proposes a new concept: the “stacked database.”

Beyond the physical stacking of chips, AI computation operates within an abstract high-dimensional mathematical space, in which all entities are decomposed into smaller units called tokens. Through a process known as embedding, these tokens are transformed into complex numerical vectors in multidimensional space. From this moment, the meanings and relationships of language are translated into positions and distances within mathematical space. The interpretive frameworks once structured by human keywords are thus dismantled, allowing heterogeneous databases to collide, merge, confront, and coexist — leading to a networked perspective on the multiplicity of databases.

Short Papers 6: Networks, Press, and Institutions in Asian Contexts

Manila in Flames: Distant Reading Fire in Colonial Manila's Press, 1898–1941

Mar Lorence Gamboa Ticao

The Chinese University of Hong Kong

Purpose.

This poster introduces a digital humanities project that maps how fires were reported—and imagined—in Manila's colonial newspapers between 1898 and 1941. Beyond recording disasters, fire reports framed vernacular neighborhoods as risky and combustible, shaping both public perception and urban planning. The project asks: how did newspapers construct fire as both a material hazard and a justification for modernization?

Methods.

The study assembles a corpus of English-language newspapers (*Cablenews-American*, *The Tribune*, *Freedom*, *Manila Times*) and extracts articles containing keywords such as “fire,” “conflagration,” “burn,” and “blaze.” Python-based text mining is applied to track term frequencies, collocation clusters, and sentiment patterns around descriptors like “nipa,” “shanty,” “crowded,” “unsanitary,” and “criminal.” Named-entity recognition identifies place names, which are then geocoded and mapped in QGIS (spatial analysis) and StoryMapJS (interactive presentation) against colonial zoning boundaries and planning proposals.

Results.

Preliminary analysis reveals two consistent patterns. First, fire reporting was spatially uneven: working-class districts such as Tondo and Binondo dominated the press, while elite residential zones appeared mainly as threatened by encroaching flames. Second, collocation networks show that “nipa house” (light, stilted dwelling made of palm and bamboo—was reframed as “shanty”) was persistently linked to “hazard,” “danger,” and “problem,” recasting a vernacular form valued for affordability and resilience as evidence of backwardness. A prototype fire map highlights incident clusters in peripheral neighborhoods, aligning closely with areas targeted for drainage works, firebreaks, and street widening.

Conclusions.

By combining distant reading and mapping, this project recovers a missing layer of Manila's urban history: the geography of fire as constructed in colonial discourse. No comprehensive historical atlas exists for Manila; only scattered archival maps survive, and modern studies begin only in the late twentieth century. Mining the colonial press provided an alternative path for reconstructing

fire risk geographies. In doing so, the project shows that fire coverage was less about neutral reporting than about encoding bias and legitimizing intervention. Impact.

The poster will present three key outputs:

1. Frequency timelines of fire coverage across decades.
2. Collocation clusters linking fire to material and social descriptors.
3. A prototype map of reported fire sites overlaid with planning zones.

These visualizations offer not only a new tool for understanding Manila's built environment but also a replicable workflow for other cities without historical fire-insurance atlases. Looking ahead, the project will expand by linking articles to cadastral maps and incorporating postcolonial fire data, creating a long-view "Atlas of Fires in Manila."

Moral Judgment Reflected in Korean COVID-19 Tweets: A Deep Learning Approach

Hyo-eun Kim¹, Baro Kim²

¹ *Hanbat National University*

² *Academy of Korean Studies*

This study explores the moral coping strategies embedded in Korean Twitter discourse during the COVID-19 pandemic by employing deep learning methods grounded in Moral Foundations Theory (MFT). While much prior research has examined public values, ethical priorities, and emotional responses during the pandemic, comparatively little attention has been given to how moral categories are expressed dynamically in non-Western contexts. To address this gap, we constructed a Korean version of the Moral Foundations Dictionary (K-MFD), tailored to cultural and linguistic nuances, and applied it to more than 560,000 annotated COVID-19-related tweets collected between December 2019 and June 2020. Using Long Short-Term Memory (LSTM) neural networks, we conducted large-scale context-sensitive analyses to classify moral judgments and track their fluctuations over time.

Our findings reveal a dual moral strategy: individualizing moral foundations such as harm and cheating emerged as stable and long-term concerns, while binding foundations such as loyalty and degradation fluctuated in response to pandemic-specific events. Time-series analyses show that collectivist-oriented categories

gained salience during moments of acute crisis—such as rising infection numbers or mask shortages—but receded as resources stabilized. In contrast, individualizing categories remained consistently central, suggesting that Korea's high rate of mask-wearing and compliance may be explained less by collectivist loyalty and more by individualist motivations to avoid harm and prevent cheating. This interpretation challenges earlier studies that attributed East Asian compliance primarily to collectivist values.

Morpheme-level analysis further demonstrates how particular terms were strongly tied to moral categories: “confirmed cases” and “fake news” were salient within degradation, whereas “nation” and “integration” clustered around loyalty. Sentiment analysis revealed that moral expressions were overall more positive (57.1%) than negative (42.9%), with peaks of both occurring in March 2020 during the first major outbreak and subsequent stabilization of the mask supply. Such temporal variation underscores the importance of contextualizing moral attitudes within specific phases of a crisis.

This study contributes methodologically by combining a culturally adapted moral dictionary with deep learning, enabling a nuanced assessment of moral judgments beyond keyword counts. Substantively, it highlights the coexistence of individualist and collectivist orientations in Korean moral discourse, which shift according to situational demands rather than remaining fixed. These findings offer valuable insights for public health communication, policymaking, and disaster management by demonstrating that appeals to both individual and collective moral frameworks may be necessary depending on the stage and character of a crisis. More broadly, this work illustrates the significance of incorporating cultural specificity and temporal sensitivity into the computational study of moral psychology in digital environments

Industrial Amnesia and Revival: Memory Cycles in Early Chinese Industrialization

Wanshu Zhang

University of Luxembourg

This study examines early Chinese industrialization through the lens of “industrial memory circles”—recurring patterns of technological knowledge acquisition, systematic amnesia, and partial recovery. Using German engineer Eugen Ruppert's firsthand account *Reise um die Welt mit mehrjährigem Aufenthalt in China und Japan* (Journey Around the World with Several Years' Stay in China

and Japan), we investigate how the Hanyang Iron and Steel Works (1890-1911), China's largest industrial project, repeatedly cycled through phases of initial success ("Build Memory"), collective amnesia marked by complete knowledge loss and institutional forgetting, and attempted recovery ("Memory Back"). The research asks: How did industrial knowledge transfer and collective amnesia manifest spatially and temporally in late Qing China? What cultural and institutional factors transformed technological progress into systematic forgetting? How can digital humanities methods visualize these cycles of memory and amnesia to reveal patterns invisible to traditional historical analysis?

The German text underwent systematic processing using SpaCy 3.0 for NER, PhraseMatcher for identifying 72 industrial terms, and regular expressions for temporal extraction. A trilingual classification framework categorized 632 text segments into memory phases using 46 keywords, including 22 amnesia markers such as "Misswirtschaft" (mismanagement), "Schrotthaufen" (scrap heaps), and "jedweder Beschreibung trotzende" (defying any description). GeoPandas processed CHGIS 1911 data for spatial integration, while interactive visualizations employed Leaflet.js for maps, D3.js for animated timelines showing amnesia progression, and custom HTML5/JavaScript dashboards revealing how industrial memory transformed into collective forgetting.

Analysis revealed that amnesia dominated the industrial narrative, with the Hanyang Iron Works exhibiting dramatic cycles from "vorzüglich" (excellent) facilities to complete institutional collapse—what Ruppert described as "jedweder Beschreibung trotzende Misswirtschaft" (mismanagement defying any description), where sophisticated Belgian equipment became "Schrotthaufen" and technical knowledge vanished entirely. The phase transition matrix showed a critical finding: Build Memory collapsed into Amnesia three times more frequently than Amnesia recovered into Memory Back, with zero direct recoveries without first acknowledging failure. This collective amnesia concentrated spatially at production sites in Hubei while administrative centers remained immune, suggesting industrial amnesia was site-specific rather than systemic.

Cultural barriers emerged as primary drivers of collective amnesia. Traditional beliefs, corruption, and xenophobia created conditions where industrial knowledge could not consolidate into lasting memory. Foreign engineers, despite dominating the technical landscape, could not prevent recurring amnesia because the forgetting was culturally embedded rather than technically driven. The visualization reveals amnesia not as passive forgetting but as active erasure, with specific locations becoming "memory holes" where industrial knowledge repeatedly disappeared.

The interactive platform transforms these amnesia patterns into explorable narratives through multiple layers: animated timelines showing memory decay, heat maps revealing amnesia hotspots, and phase transition diagrams demonstrating the asymmetric path from knowledge to forgetting. Pop-up panels link specific amnesia events to textual evidence, such as facilities described as "vollständig verfallen" (completely decayed) or operations experiencing "totaler Stillstand" (total standstill).

This research pioneers digital methods for quantifying collective amnesia in industrial contexts. The "memory circle" framework demonstrates that industrial amnesia in cross-cultural technology transfer is not accidental forgetting but systematic, culturally-mediated knowledge rejection. By visualizing amnesia as a geographical and temporal phenomenon, the study reveals how certain spaces become zones of recurring forgetting, where industrial memory repeatedly fails to consolidate. The asymmetric transition patterns provide mathematical evidence that collective amnesia functions as a structural feature of failed industrialization rather than an aberration.

The findings challenge linear modernization theories by showing how industrial development can become trapped in cycles where collective amnesia erases previous learning. The visualization of these amnesia patterns offers insights for contemporary technology transfer, suggesting that preventing industrial amnesia requires addressing cultural and institutional barriers, not just technical training. The quantified evidence that foreign expertise could not prevent collective amnesia has implications for understanding why certain industrial initiatives repeatedly fail despite technical competence.

Analysis relies on a single German source with detected European bias. Geocoding limitations and keyword-based classification may underrepresent subtle forms of amnesia. Future work should integrate Chinese sources to understand amnesia from multiple perspectives and develop machine learning approaches to detect implicit patterns of institutional forgetting.

Keywords: Industrial Amnesia; Collective Memory; Digital History; China Industrialization; Memory Circles; Technology Transfer; Spatial Visualization; Hanyang Iron Works

Reimagination Relationships in History: Map AO3 Chinese Historical Fanfiction

Xiaoyan Yang¹, Marcia Helena Moreira Paiva², Federico Pianzola¹

¹ *University of Groningen*

² *Universidade Federal do Espírito Santo*

Chinese historical fanfiction (Chinese History RPF, 历史同人) is a unique form of cultural production at the intersection of popular culture, history, and digital media (Zheng, 2016). In this mode of creation, historical figures are re-contextualized and reimaged to explore contemporary social and cultural issues (Lu, 2016). Similar to traditional historical fiction, fanfiction serves as a contemporary cultural response that reflects on China's self-perception and national imagination during its long history of feudal monarchy and military as well as cultural conflicts with its Eurasian neighbors. These narratives can elevate history into stories of victory, humor, play, and parody, for example allowing readers to imagine an emperor with his beloved general together opening an invincible imperial history. This re-imagination is not mere parody but a complex cultural practice. This suggests that historical fanfiction is not just for entertainment but also a medium for expressing personal and political intentions, such as re-imagining ideal male and female masculinities and re-imagining their Chinese identity (Tian, 2015). Therefore, romanticization in fanfiction is not merely a creative act of romance; it is also a negotiation of gender, power, and national identity within a constrained digital environment (Lu, 2016). In these texts, historical figures are more than just historical figures; they become avatars carrying modern anxieties and aspirations. Fans usually use the re-imagined relationships to negotiate historical narratives, re-evaluating power dynamics, gender roles, and national identity. Therefore, quantifying the structural patterns of these relationships is essential for understanding the shared cultural priorities and imaginative practices within the fandom.

This research proposal outlines a pilot study using computational methods to explore the structural characteristics and narrative of character relationship networks in Chinese historical fanfiction. The central question of this project is: How is the mostly romantic reimagination of historical figures expressed structurally and thematically in the Chinese historical fanfiction corpus collected from AO3, and what quantifiable patterns do their character relationship networks exhibit?

Despite the above mentioned qualitative research on historical fanfiction, there is a lack of large-scale quantitative analysis of its character relationships. This is a challenging endeavor because the venues for fanfiction creation and sharing are often decentralized and possess a degree of community privacy. While public web novel platforms like Jinjiang and Qidian host some works, vast amounts of fanfiction are written and read on dedicated fanfiction platforms such as Archive

of Our Own (AO3) and Lofter, or exist within the private sphere of social media fan communities like QQ and Weibo, making the acquisition of a representative dataset extremely difficult. Furthermore, the social relationships depicted in historical fanfiction are complex and intricate, encompassing familial bonds, friendships, rivalries, and romantic relationships. Coupled with the tradition of subtle expression in Chinese history and classic literature, clear judgment of relationship types can be difficult.

We choose to utilize the fanfiction metadata from AO3 to effectively address these issues. Firstly, AO3 features a substantial and diverse corpus of Chinese historical fanfiction. As of September 2025 (the data collection date), there are 8,040 fanfiction works (97.7% in Chinese) associated with the “Chinese History RPF” tag, involving a total of 2,878 historical figures, which to some extent reflects the scale and popularity of historical fanworks. Secondly, AO3 possesses a comprehensive metadata system, allowing authors to clearly indicate which characters, romantic pairings (Character A/Character B), and non-romantic relationships (Character A&Character B) are included in a work. Authors can also detail characterization or plot settings, such as “Modern AU” (Alternate Universe), where historical figures are placed in a contemporary setting. This publicly accessible metadata enables us to conduct an analysis of the dynamic relationships presented in Chinese History fanfiction.

To address the research question, we collected information on 2,878 different historical figures from AO3. The most frequently tagged character appeared in 959 different stories, with an average of 13.5 stories per figure. However, it is noteworthy that only 25% of the figures have four or more stories, and over half are associated with only 1 story, indicating a clear concentration of popularity in historical fanfiction. We ultimately selected 349 figures with a work count greater than the average, spanning historical periods from the Shang Dynasty to the Qing Dynasty, for further study of this popularity. By complementing the AO3 data with information on the figures’ lifespans and main active dynasties from Wikipedia, we generated statistics on the number of characters and average works per character for each dynasty (Figure 1),

Figure 1. Comparison of Character Count and Average Works Per Character by Dynasty

A prominent finding is the high number of historical figures from the Three Kingdoms Period featured in fanfiction (Tian, 2015). The figure with the most Chinese History Fanfiction is Sima Yi (司马懿). Conversely, the Shang Dynasty, with only three characters, has a remarkably high average of 461 stories per character. This is an interesting discovery. The Three Kingdoms Period, a time of

complex alliances and rivalries between the states of Cao Wei, Shu Han, and Eastern Wu, probably inspires historical imagination due to the complexity of the relationships among its figures.

This project will conduct descriptive analysis of the fanfiction metadata, construct character networks, and perform quantitative analysis on the depicted relationships using graph-theoretic metrics including centrality, clustering coefficient, and community detection (Borgatti et al., 2018; Newman, 2018). We will then compare these findings with the relationship records in the China Biographical Database Project (CBDB) (Tsui & Wang, 2020) to further understand the reconstruction of historical figure relationships in Chinese history fanfiction.

This study makes several contributions. First, it applies digital humanities methodologies to a large-scale, non-Western, user-generated content corpus, demonstrating the potential of computational methods for studying nuanced cultural phenomena (Moretti, 2005; Kozinets et al., 2014). Second, it will provide empirical data on the social and literary practices of the Chinese online fan community, filling a gap in quantitative research in this field. Finally, it will through statistical and network analysis computational methods offer a new perspective on historical imagination, moving beyond traditional close reading to explore how networked character relationships shape a cultural resonance.

References

- Borgatti, S. P., Agneessens, F., Johnson, J. C., & Everett, M. G. (2024). Analyzing social networks.
- Kozinets, R. V., Dolbec, P. Y., & Earley, A. (2014). Netnographic analysis: Understanding culture through social media data. *Sage handbook of qualitative data analysis*, 262-275.
- Lu, J. (2016). Chinese historical fan fiction internet writers and internet literature. *Pacific Coast Philology*, 51(2), 159-176.
- Moretti, F. (2005). *Graphs, maps, trees: abstract models for a literary history*. Verso.
- Newman, M. (2018). *Networks*. Oxford university press.
- Tian, X. (2015). Slashing Three Kingdoms: A case study in fan production on the Chinese web. *Modern Chinese Literature and Culture*, 27(1), 224-277.
- Tsui, L. H., & Wang, H. (2020). Harvesting big biographical data for Chinese history: the China Biographical Database (CBDB). *Journal of Chinese History 中國歷史學刊*, 4(2), 505-511.
- Zheng, X. (2016). *Borderless fandom and contemporary popular cultural scene in Chinese cyberspace* (Doctoral dissertation).
-

Interactive Workshop 2

How to Make Research Software with AI: Documentation as Software

Bo An

History Department, Lingnan University

AI-assisted coding has matured to everyday usability among professional programmers, lowering the barrier for digital humanists: less time on syntax and framework details, more on framing research problems. Yet the opportunity exposes a gap: robust, maintainable software still depends on a grasp of software-engineering fundamentals. At the same time, engineering practice is shifting under new AI paradigms. This workshop advances documentation-oriented programming (DOP) as a practical foundation.

The workshop starts with a 15-minute framing followed by three hands-on stages in a single iterative track. Stage 1 turns a concise specification into a simple TypeScript/JavaScript script. Stage 2 refactors it into a small reusable library and integrates it as the core of a Zotero plugin. Stage 3 publishes the same core as a lightweight browser-side library with a minimal web interface. A prepared repository includes starter code, minimal tests, and instructions; widely available models ensure accessibility.

The workshop situates AI coding within a broader text-first shift: complex GUIs, RAG pipelines, and graph-based builders give way to document-driven workflows requiring less effort but more productivity. The Model Context Protocol (MCP) exemplifies a documentation-defined, middle-ground interface where agents act on descriptions in natural language while remaining predictable. Workshop participants will leave with up-to-date paradigms, practical vocabulary, and confidence to build small, durable tools and evolve them into proper software projects.

Roundtable I

Conceptual Art in the Age of Artificial Intelligence

Jianru Wu

Hong Kong Baptist University

This paper examines the convergence of conceptual art and generative art through the lens of contemporary artificial intelligence, arguing that AI systems serve as a form of "conceptualized" production that necessitates a reevaluation of both artistic lineages. Historically, generative art, born from the academic field of computer graphics, and conceptual art, with its critique of materialism and museum mechanisms, have existed in separate spheres. The former was often confined to technical conferences like SIGGRAPH, while the latter circulated within the institutional frameworks of the art world. This paper posits that the rise of large-scale AI models, particularly those based on latent diffusion and natural language processing, dissolves this historical separation by foregrounding shared underlying logics between algorithms, concepts, and language.

The central inquiry is: How does the "prompt engineering" of AI art not only mirror the dematerialized, instruction-based ethos of historical conceptualism but also function as a critical method of digital humanities (DH)? In the contemporary AI paradigm, the prompt—a linguistic instruction—has replaced code as the primary means of media synthesis. This shift marks a significant moment of remediation, where complex human ideas are translated into a computable format to generate aesthetic outputs. This process is analogous to what Johanna Drucker terms data modeling, the abstraction of features from a phenomenon into a structured form for computation. The artist's prompt acts as a conceptual model that instructs the "machine" of the large language model. This resonates powerfully with Sol LeWitt's seminal 1967 statement, "The idea becomes a machine that makes the art," which relegated execution to a perfunctory task. Similarly, the collaborative and systems-based logic of Art & Language's Index 01 (1972) prefigures the relational, database-driven nature of AI.

This paper draws upon a curatorial practice—an exhibition featuring 19 artists and collectives—as its primary research methodology. The exhibition serves as a scholarly interface and a form of argumentation, juxtaposing computational aesthetics with contemporary critiques of technology to test our central thesis. This approach treats the exhibition not merely as a display but as a DH project that performs its analysis through the selection and spatial arrangement of digital and physical objects. The paper is structured into three thematic sections that reflect the curatorial logic.

First, the paper explores the shared logics of recursion, computation, systemic design, and conceptual art. I will re-examine the "algorists" (a term coined by Roman Verostko), including Verostko himself, Hans Dehlinger, and Casey Reas. Their work demonstrates how rule-based systems can produce emergent and unpredictable results, challenging the notion of the artist as a solitary genius and

reframing generative art as a "performance" of a system. Verostko's "epigenetic art," where code functions like genetic instructions shaped by environmental randomness, provides a powerful model for understanding the interplay between determinacy and contingency in AI.

Second, the paper moves beyond merely confronting computational limitations to explore how its "flaws"—noise, hallucinations, and amplified social biases—are repurposed by artists as a potent critical methodology. In this section, AI's "hallucinations" are reframed: they are not technical failures to be fixed, but unique windows into non-human-centric modes of cognition. An AI hallucination is not a mistake in the human sense; it is an inevitable output generated from the machine's distinct statistical and associative logic, built upon vast, biased, and gapped training data. These hallucinations reveal how a machine "sees" the world—an alien yet internally coherent visual grammar, distinct from human perception. This re-contextualization of "hallucination" is central to art's critical inquiry in the AI era. Reas's *Compressed Cinema* (2020) exemplifies this by using GANs not to achieve hyperrealism, but to explore the ephemeral, non-human visualities found within latent space, offering a form of automated media analysis. Documentary artist Li Yifan, trains image generators on socio-political archives not to precisely "restore" history, but to leverage the model's hallucinatory capacity to generate a "potential" narrative from archival silences and gaps, allowing obscured fragments to reemerge as spectral artifacts. Artist Li Dan directly confronts AI's hegemonic obsession with "clarity" by creating optical camouflage resistant to algorithmic interpretation—a philosophical gesture aimed at preserving ambiguity and the unseen from computational capture.

Finally, the paper re-examines the problem of authorship in the age of AI. While the internet era already made questions of ownership exceedingly complex, the rapid development of AI presents an unprecedented challenge that demands a response beyond conventional legal frameworks. This section, therefore, shifts the inquiry from law to philosophy, analyzing the issue through the lenses of data construction, the machine perspective, and the very mechanism by which machines come to possess data, all contextualized through artistic creation.

The core of my argument is that AI forces a confrontation with the ontology of the digital object itself. From a digital humanities perspective, data is never a neutral given, but is always "capta"—taken and constructed through an interpretive model. AI art exemplifies this, where both the artist's prompt and the machine's vast, biased dataset constitute a complex act of data construction. Artistic practices that exploit the "machine perspective" make this construction visible. Works like Matthew Plummer-Fernández's *Metamultimouse* create dual-ontology

objects: artifacts that are abstract to humans but remain legible data to a computer. This reveals how a machine "possesses" data—not through legal ownership, but through an exclusive mode of perceptual access to the underlying structure. The algorithm becomes the gatekeeper to one of the object's primary modes of being. In this context, the artwork is no longer a stable, singular entity but a relational process, its identity enacted differently by human and non-human observers. This ontological instability, brought to light through artistic practice, demonstrates that traditional models of authorship are insufficient, compelling us to develop new frameworks that account for the distributed, processual, and machine-mediated nature of creation in the age of AI.

In conclusion, this paper argues that artificial intelligence has the potential to provide a new epistemological framework that merges the instruction-based logic of conceptual art with the systemic processes of generative art. The artistic practices built upon AI systems are defined by a new set of characteristics: they are operable, founded on executable instructions; highly dependent on machine reading, with an ontology split between human perception and computational legibility; and they introduce de-humanized features, such as algorithmic hallucinations and non-human-centric perspectives. By grounding this analysis in a curatorial methodology, the paper also demonstrates how the act of exhibition-making itself can be a potent form of digital humanities research, one that uses aesthetic encounters to probe the profound cultural shifts initiated by artificial intelligence.

Roundtable 2

From Archives to Visualisations: Driving Digital Transformation in GLAM

Vincent, Wai-Yip Lum

The Chinese University of Hong Kong

Title: From Archives to Visualizations: Embracing Digital Transformation in GLAM Institutions

The rapid evolution of technology presents unprecedented opportunities for Galleries, Libraries, Archives, and Museums (GLAM) institutions, especially for academic libraries. New technologies are increasingly becoming suitable for addressing the unique requirements of these cultural heritage organizations.

They are unlocking possibilities for uncovering archival collections while enhancing accessibility, usability, and preservation of both digital and analogue archives.

The central theme of this roundtable discussion is the transformative potential of cutting-edge digital technologies within the context of academic library services. We will examine innovations such as Artificial Intelligence (AI), transformer-based large language models (LLMs), 3D capturing and Computer Vision (CV), which collectively offer new avenues for streamlining archival processes and digital transformation efforts. These technologies facilitate the accessibility of cultural heritage materials to a wider audience through innovative distant viewing methodologies and interactive visualizations. GLAM breathe new life into interpretation of archives through these digital tools and techniques. The incorporation of high-quality visualization has the potential to revolutionize the way users interact with these unique resources with multifaceted experiences. Text-mining can also be supported in a more sophisticated way and this can offer simplified frameworks for complex data analytics. At the same time, simpler technologies, such as 360-degree photography, continue to have practical applications for smaller institutions due to their simplicity and cost-effectiveness. Our discussions aim to provide interdisciplinary theoretical and practical evaluations of these technologies. Participants will explore the application of different digital transformation methodologies through practical use case studies, showcasing findings from both early developmental stages and more mature implementations. This exploration will offer insightful perspectives on the current and future roles of digital technologies in transforming archives. The roundtable will also discuss the implications for historians and other scholars, who rely heavily on archival data for their research, as these advancements can significantly enhance their ability to access and interpret historical materials. The integration of digital technologies and AI into academic library ecosystems is not without challenges. We will delve into the ethical implications surrounding these innovations, including concerns about biases inherent in AI systems, risks to privacy, and the potential erosion of trust if these technologies are implemented without transparency and accountability. These challenges highlight the complex socio-technical interactions at play when adopting new technologies to digital collections.

We will explore strategies for managing the ethical tensions that arise from digital innovation, ensuring accountability, inclusiveness, and equity in the realm of cultural heritage. A critical issue that we will address is the challenge of obtaining contextually high-quality and semantically relevant training datasets. The

limitations of current evaluation benchmarks will also be a focal point, as we discuss the development of best practices aligned with explainable Artificial Intelligence (XAI) methods.

This roundtable discussion will provide a foundation for rethinking the future of digital transformation within GLAM sectors. We aim to strike a balance between the technological possibilities offered by these advancements and the ethical considerations inherent in their applications. Importantly, we will bring to light pressing concerns regarding collaborative frameworks that can push the use of advanced technologies further, ultimately enhancing digital knowledge dissemination.

By focusing on improving access, usability, and preservation, we seek to foster an environment where academic libraries can thrive in the digital age.

Participants will leave with a deeper understanding of how to leverage technological innovations while remaining vigilant about the ethical implications they entail. This session promises to inspire meaningful dialogue and collaborative efforts that will shape the future of GLAM institutions in an increasingly digital world.

Short Papers 7: Conceptual Frames & Methods in the Age of AI

Consensus and Creation: A New Framework for Algorithmic Criticism

Grant Hamilton

Chinese University of Hong Kong

Literary-historical analysis has long relied on pre-determined categories such as genre, period, and theme to organize and interpret texts. While indispensable, these frameworks have also inadvertently silenced corpora by obscuring the interpretative context immanent to the structure of the corpus itself. This paper introduces “consensus communities,” a computational framework specifically designed to listen to a literary corpus on its own terms, revealing patterns of relation that have remained imperceptible to traditional critical methods. To achieve this, the methodology brackets established categories and operates instead through a consensus clustering of stable textual communities. This process synthesizes three distinct analytical dimensions of a text’s relationship to its corpus: its structural positionality (network centrality), its moments of semantic

novelty (semantic disruption), and its deep patterns of relational affinity (community dynamics). By integrating these dimensions, the framework grants a corpus the latitude to articulate its own internal logic. When applied to a test corpus of 142 twentieth-century Nigerian novels in English, this approach reveals an emergent structure of six distinct communities that challenge conventional literary-historical classification. These are not simply thematic or stylistic groupings but mathematically defined constellations of textual affinity. Beyond identifying these corpus-level structures, the framework's primary innovation lies in its ability to translate such communities into a powerful interpretive lens for close reading. For each consensus community, the model extracts a unique mathematical signature representing its deep formal and semantic patterns. It can then identify specific passages within any given novel that most powerfully resonate with this signature. An analysis of Chinua Achebe's *Things Fall Apart*, for instance, highlights passages that, while relatively unremarkable to conventional criticism, are computationally central to the novel's participation in its consensus community. The algorithm does not interpret these passages. Rather, it presents such passages as empirical evidence, effectively asking why these passages are essential for understanding how the corpus organizes itself.

Such computational evidence presents a challenge that existing critical vocabularies may be ill-equipped to meet. At this juncture, I argue, the literary critic is repositioned as a Deleuzian philosopher who is tasked with developing new concepts and a new critical language by which to understand how such passages function as the load-bearing pillars of the corpus's architecture. In this way, the consensus communities framework transforms both how the literary critic maps literary history and how she practices close reading. Crucially, it does not seek to replace the critic but to augment critical practice by providing robust, falsifiable evidence of textual relationships that are otherwise invisible. It presents literary studies with a profound opportunity – to allow the immediate literary context of a text speak for itself.

Materialist Form: Reassessing Moretti's Digital Humanities

Mingyi Liao

Department of Chinese Language and Literature, East China Normal University

This paper positions Franco Moretti's "materialist conception of literary form" as a pivotal theoretical framework for establishing the methodological legitimacy of Digital Humanities (DH) in literary studies. Responding to critiques that DH merely supplements close reading without offering novel insights, it argues that Moretti's distant reading paradigm fundamentally redefines the relationship between literary form and social systems, revealing hidden selection mechanisms within literary history. This establishes DH not merely as a practical tool, but as an indispensable analytical perspective at a conceptual level.

Moretti's materialism critically engages with Marxist traditions while rejecting economic determinism. Instead, it adopts a model of systemic interaction centered on three dimensions of form: (1) Micro-level techniques (e.g., free indirect discourse, clues) act as encodings of class consciousness; (2) Mesostructures (e.g., linear/circular spatial models in novels) map social power dynamics (e.g., colonial economic trajectories in Austen); (3) Macro-level genre competition (e.g., novel vs. epic) represents "conflicts formalized through literary genres." This framework depends on a triangular feedback system of reader-text-market, where formal evolution follows a Darwinian logic of "variation-selection-inheritance-extinction." Quantitative DH methods – such as book history data on printing efficiency or genre lifecycle curves – empirically validate this model, demonstrating form's material adaptability (e.g., prose's 40% higher printing efficiency cementing its dominance over verse).

A case study of Moretti's *The Bourgeois* (2013), interpreted through Wallerstein's world-systems theory, demonstrates the symbiotic relationship between economic cycles and literary form. The "middlingness" of the bourgeoisie generates a formal duality: economic upswings favour adventurous narratives (e.g., Scott's historical novels), while downturns shift towards conservative description (e.g., Flaubert's use of the imperfect tense). Free indirect discourse emerges as a key "device" mediating this tension, embedding bourgeois subjectivity within objective description. DH analysis provides crucial evidence: computational stylistics (e.g., Stanford Literary Lab's analysis of 2,958 British novels) reveals significant correlations between grammatical structures (like the imperfect tense) and narrative logics, linking them to conservative ideology during economic depressions. Furthermore, a global perspective exposes the Eurocentric limitations of traditional theory through formal "deformations" in semi-peripheral regions (e.g., Latin American magical realism).

Ultimately, the paper contends that DH, embodied by distant reading, constitutes a paradigmatic shift in literary studies. Methodologically, it transcends the text-centrism of close reading through models of "arboreal divergence" (*longue durée*

evolution) and "wave-like diffusion" (spatial circulation), emphasizing the contingency of formal evolution. Theoretically, DH moves beyond being a mere tool, becoming integral to the production of form itself (e.g., frequency analysis redefining "style"). Applied to the Chinese context, DH offers pathways to capture the "emergence" of new bourgeois cultural forms (e.g., genre competition in web literature) within global cycles of hegemony transition.

By synthesizing the materialist conception of form with systems theory, this paper affirms DH as an independent paradigm essential for dismantling Eurocentrism and reconstructing a dynamic, globally-oriented literary history.

Digital Humanities Pedagogy in the Age of Generative AI

Simon Mahony

University College London

The integration of artificial intelligence (AI) into academic environments is reshaping the pedagogical landscape of many disciplines including the Digital Humanities (DH). This presentation explores the implications of Generative AI for DH pedagogy, focusing on how educators can adapt their teaching practices to both harness the potential of these tools and critically evaluate their impact.

Digital Humanities has long stood at the intersection of technological innovation and humanistic inquiry (Frontoni et al., 2024). In the age of AI, this intersection has become more complex and, at times, more problematic. Generative models such as ChatGPT, Claude, and others are now capable of producing text, code, and even creative works that rival human output. As these tools become more readily accessible, DH educators face the dual challenge of integrating Generative AI into the curriculum in meaningful ways, while ensuring that students develop the critical skills necessary to evaluate and contextualise AI generated content (Frontoni et al., 2024; Daher, 2025).

This presentation will offer a brief overview of some current trends in AI-enhanced education, with a specific focus on DH contexts. It will draw on examples from recent classroom practices, including the use of AI for text analysis, data visualisation, and creative writing (García-López & Trujillo-Liñán, 2025). These examples will illustrate how Generative AI can be meaningfully integrated into DH curricula to enhance student learning, foster experimentation, and encourage interdisciplinary collaboration. Through this approach both students and staff are able to construct knowledge and understanding actively

through constructivist methods, rather than relying on passive knowledge transfer (Vygotsky, 1978).

The presentation will also address the risks and limitations of AI in pedagogical settings, including concerns around academic integrity, diminished critical thinking, and the potential for bias and misinformation in AI-generated content (Nagelhout, 2025; Mills et al., 2024). As a response, it advocates for a framework for responsible AI integration in DH pedagogy, one that emphasises transparency, ethical awareness, and the development of digital literacy.

Main themes are:

- **Critical AI Literacy:** Teaching students (this is equally important for staff too) to understand how AI systems work, what their limitations are, and how to interpret their outputs critically (Daher, 2025; Darvish et al., 2024; Open University, 2025).
- **Collaborative Intelligence:** encouraging a constructivist approach where students engage with AI tools in ways that enhance human creativity and insight (Chen, 2025), rather than replacing them.
- **Ethical Engagement:** Embedding discussions of bias, surveillance, and algorithmic justice into DH curricula to promote socially responsible and ethical scholarship (Nagelhout, 2025).
- **Curriculum Design:** Rethinking course structures to include Generative AI as both a tool and a topic, while maintaining the core values of humanistic inquiry (Frontoni et al., 2024).

The presentation will conclude with a call to DH educators, to embrace the transformative potential of AI while remaining cautious about its implications. Rather than viewing AI as a threat to traditional pedagogy, we should see it as an opportunity to reimagine how we teach DH in ways that are more inclusive, dynamic, and future-facing. DH is uniquely positioned to advocate for the use of Generative AI and DH tools to promote mutual understanding, bridge linguistic and cultural barriers, and build a more inclusive and interconnected global academic community.

This proposal aligns with the HKADH2026 conference theme, Digital Humanities Pedagogy, and contributes to the ongoing conversation about how automated and generative technologies are reshaping scholarly practices. It is intended to provoke discussion among educators, researchers, and technologists, and to offer insights for navigating the complexities of AI in the classroom.

References

Chen, Z. (2025). The humanities in an AI world: Personal reflections. JSTOR.

<https://www.about.jstor.org/blog/the-humanities-in-an-ai-world-personal-reflections-from-sxsw-edu-2025>

Daher, R. (2025). Integrating AI literacy into teacher education: a critical perspective. *Discover Artificial Intelligence*. <https://doi.org/10.1007/s44163-025-00475-7>

Darvishi, A., Khosravi, H., Sadiq, S., Gašević, D. & Siemens, G., (2024). Impact of AI assistance on student agency. *Computers & Education*. <https://doi.org/10.1016/j.compedu.2023.104967>

Frontoni, E., Paolanti, M., Migliorelli, L., Pietrini, R., & Asimakopoulos, S. (2024). Artificial intelligence: the new frontier in digital humanities. *Frontiers in Computer Science*. <https://doi.org/10.3389/fcomp.2024.1529826>

García-López, I. M., & Trujillo-Liñán, L. (2025). Ethical and regulatory challenges of Generative AI in education: a systematic review. *Frontiers in Education*. <https://doi.org/10.3389/educ.2025.1565938>

Mills, K., Ruiz, P., Lee, K., Coenraad, M., Fusco, J., Roschelle, J., & Weisgrau, J. (2024). AI Literacy: A Framework to Understand, Evaluate, and Use Emerging Technology. *Digital Promise*. <https://files.eric.ed.gov/fulltext/ED671235.pdf>

Nagelhout, R. (2025). Developing AI Ethics in the Classroom. Harvard Graduate School of Education. <https://www.gse.harvard.edu/ideas/usable-knowledge/25/07/developing-ai-ethics-classroom>

Open University. (2025). A framework for the Learning and Teaching of Critical AI Literacy skills.

<https://about.open.ac.uk/sites/about.open.ac.uk/files/files/OU%20Critical-AI-Literacy-framework-2025.pdf>

Vygotsky, L. S. (1978). *Mind in society: development of higher psychological processes*. Harvard University Press.

Agency Analysis: An Entity-based Analysis of the Narrative

Wenjing Ni, Christophe Coupé

The University of Hong Kong

Besides the importance of events and the arrangement of events, the driver of the events, or the character of the story who acts out of their motivations, is another essential research object in the field of Narratology. The present study tries to come up with an automatic analysis method, namely agency analysis, which can tell us how characters' actions can reveal the extent to which they

intend to interact with their surrounding environment, forming a complementary and easy-to-interpret research method for the field of computational narratology. We design our way to analyze the agency of fictional characters by adopting a specific linguistic feature - the thematic roles that a character plays in a narrative, hoping that this syntax-semantics interface, which indicates the predicate-argument relationship in an entity-based manner, can reveal meaningful insights into a character's intentionality on a psychological level. By including the agency of fictional characters in computational literary studies, we will have an opportunity to associate fictional characters' actions in an imaginary world with the complex dynamics of human decision-making and behavior, and help us gain a deeper understanding of the complex relationships between characters, authors, and readers, or develop more nuanced and sophisticated theories of narrative and storytelling.

In general, thematic roles refer to "the roles that participants play in the events described by verbs" (McRae et al., 1997), which involves semantic interpretations of every syntactic component of the sentence (e.g., some roles are decided by the nature of the verb). Linguists have categorized the roles as Agent, Patient, Goal, Experiencer, Stimulus, etc. (Dowty, 1991). However, it is hard to provide precise definitions of these thematic roles and even harder to build an automatic pipeline that differentiates and labels the "clusters of concepts" (Dowty, 1991) accurately.

In that case, we will stick to the annotation scheme of PropBank (Babko-Malaya, 2005) and the notions of Proto-agent and Proto-patient introduced by Dowty (1991) to investigate the distribution of proto-roles played by a fictional character, and use AllenNLP (Gardner et al., 2018), a deep-learning-based Python toolkit, to annotate whether a protagonist plays the role of Pro-Agent or Pro-Patient in a sentence, as they are the two most relevant roles to agency and carry the information of actions. By adopting proto-roles instead of the traditional classification, such as Agent, Patient, Theme, and Experiencer, we can better focus on how verb-based events reflect a fictional character's agentive behavior in general and avoid the possible ambiguities caused by a complicated categorization methodology.

To better understand what agency analysis can accomplish with large-scale textual analysis and test the capability of our measurement to complement previously used computational methods, such as sentiment analysis, we construct a protagonist-centric dataset comprising 300 protagonists from 261 books sourced from Project Gutenberg. By calculating each character's level of agency and sentiment, we identify a shift in authors' writing preferences over

time, with more recent books depicting more agentive yet less happy characters. Furthermore, we observe gender and narrative point-of-view biases, with female characters depicted with less agency than male characters and first-person narrators exhibiting higher levels of agency. Our approach offers a complementary perspective for contemporary computational literary studies and will help to reveal how different features of characters interact and influence each other within the storytelling process.

Bibliography:

Dowty, D.R. (1991). Thematic proto-roles and argument selection. *Language*, 67, 547–619.

McRae, K., & Ferretti and Liane Amyote, T. R. (1997). Thematic roles as verb-specific concepts. *Language and cognitive processes*, 12(2-3), 137-176.

Babko-Malaya, O. (2005). Propbank annotation guidelines. URL: <http://verbs.colorado.edu>.

Gardner, M., Grus, J., Neumann, M., Tafjord, O., Dasigi, P., Liu, N., ... & Zettlemoyer, L. (2018). Allennlp: A deep semantic natural language processing platform. arXiv preprint arXiv:1803.07640.

Landscaping the Tide: Visualizing the ENSO Waterfront of the Modern Yangzi Delta

Richard Yu-Cheng Shih

RIH, CUHK

This project explores the integration of artificial intelligence (AI) and geographic information systems (GIS) in visualizing climate change in nineteenth-century China. It examines how GIS spatial analysis, combined with generative AI for text-to-image conversion, can generate new historical layers to trace the intensifying El Niño–Southern Oscillation (ENSO) impacts on the East China Sea from the 1860s onward. With a post-Taiping Rebellion context, the study investigates the contingent consequences of rising sea levels, stronger tidal surges, and increasingly frequent summer cyclones, all of which strained social infrastructures and challenged local governance across the Yangzi River estuary. In particular, it underscores the profound transformation of the northern Yangzi Delta, where once-arable farmland turned into marshy enclaves afflicted by floods, disease, and salinization—disasters that in turn displaced rural populations and created large waves of underclass refugees. By remapping shoreline dynamics through the integration of AI and GIS, this project offers new

ways to visualize the contested waterscapes of land use, labor regimes, and local politics.

Methodologically, this project advances the use of text-image data processed through AI tools to enhance GIS mapping across multiple historical scales. In contrast to conventional remote-sensing datasets, which typically privilege large-scale urban and peri-urban regions, this study focuses on smaller spatial units such as counties, towns, and villages in rural settings. This micro-scale perspective provides an analytical interface through which scholars can examine climate change patterns at a fine-grained level, enabling closer investigation of how local communities perceived, responded to, and adapted to recent environmental challenges over time. Building on this approach to historical scaling, the project also demonstrates how generative AI can assist in processing diverse types of evidence and converting them into layered spatial data suitable for GIS georeferencing. In doing so, it not only highlights the utility of AI in historical research but also points toward broader applications of AI-assisted GIS mapping in the digital humanities, with significant implications for research, pedagogy, and distance learning.

The source base of this research extends beyond Chinese-language materials to include multilingual records in English, French, and Japanese. These comprise a wide range of archival and textual materials, including those local records left by French Jesuit missionaries who arrived in Shanghai in the 1850s. The coincidence of their co-presence with intensified ENSO events positioned these Catholic priests as direct witnesses to the environmental transformations along the shoreline. The religious landscape of their newly established churches thus provides valuable evidence for mapping the shifting waterfront in local contexts. In addition, meteorological data collected by the Jesuit Observatory in Shanghai constitutes one of the earliest modern scientific records of climate in East Asia. When processed through AI technologies, these data sets—covering wind direction, rainfall, and barometric pressure—enable detailed analysis of climatic variability across time and space, including the tracing of heightened summer cyclone activity and its impact on coastal communities. Taking together, these materials demonstrate the potential of religious and scientific sources to serve as underutilized datasets for advancing scholarship in both environmental humanities and GIS-based historical mapping.

Short Papers 8: Agentic Systems, Participatory Design & Applications

Agent-Based Spatial Programming Design System for Participatory Design

yining wang

University College London

Abstract

This paper introduces the Agent-Based Spatial Programming Design System (ABSPD), a framework that combines spatial adjacency analysis, agent-based modeling, and Virtual Reality (VR) to improve community participatory design. Unlike traditional “survey + 2D mapping” methods, ABSPD allows participants to build their own layouts directly in VR. These individual layouts are then merged into a shared 3D plan using constraint-based optimization. A case study with 48 participants shows that ABSPD increases engagement, transparency, and collaboration, while also producing layouts with higher adjacency satisfaction, fewer iterations, and better scores in relevance, realism, and satisfaction. The results suggest that ABSPD can connect qualitative community preferences with quantitative spatial logic, offering a more inclusive and data-driven pathway for participatory design.

Keywords

Spatial Programming Design, Virtual Reality, Spatial Adjacency, Participatory Design, Agent-Based Modeling

1. Introduction

Spatial adjacency (SA) analysis is a rule-based method for describing how spaces relate to each other and for optimizing layouts based on proximity requirements. Traditionally, architects use tools like bubble diagrams, adjacency matrices, or space syntax to guide design, focusing on circulation, efficiency, and usability. However, in participatory settings, these tools are rarely used effectively. Common approaches—such as surveys, interviews, and 2D mapping workshops—focus more on people’s preferences than on the underlying spatial logic. Moreover, existing methods often represent space in simplified units that do not reflect real experience, and adjacency frameworks usually rely on fixed, pre-defined spaces. This mismatch highlights a gap between professional design tools and community members’ lived perspectives.

This study explores how combining SA analysis with immersive VR can improve participatory design. Our goals are:

To make spatial relationships accessible and editable in VR, lowering the knowledge barrier for community participants.

To compare the outcomes with conventional “survey + 2D mapping” approaches. We present the ABSPD system, which bridges the gap between professional design tools and public input. ABSPD allows participants to manipulate spatial relationships in VR, while the system combines these inputs into a consensus 3D scheme using agent-based modeling and constraint optimization. The result is a process that is more inclusive, transparent, and effective.

2. ABSPD and Related Work

ABSPD integrates agent-based modeling with spatial programming principles to support participatory design. In this system:

Each design element (e.g., seating, kiosks, facilities) is treated as an “agent” with attributes, roles, and adjacency rules.

Agents follow both design rules (e.g., clearance, connectivity) and user-defined preferences (e.g., “must be near,” “avoid”).

The system uses multi-agent interactions and optimization to generate 3D layouts that balance personal inputs with collective needs.

Unlike traditional adjacency methods based on static diagrams, ABSPD uses VR visualization so participants can view, check, and edit spatial relationships directly. This makes the process more transparent and accessible, encouraging active collaboration.

3. Method

ABSPD works through a six-stage process:

Module Library: Collect typical urban/architectural modules (e.g., seating, kiosks) and standardize them with labels and geometry.

VR Authoring: Participants use VR to place modules and mark spatial preferences (“must be near,” “should be near,” “avoid”). The system also detects adjacency from placement.

Personal Adjacency Extraction: Each layout is converted into a personal adjacency matrix, reflecting explicit and implicit preferences.

Consensus Graph: Personal matrices are merged into a weighted consensus adjacency graph.

3D Optimization: The system computes 3D layouts that respect adjacency, avoid overlap, and ensure circulation, refined with optimization algorithms.

Evaluation: Both objective (adjacency satisfaction, error rates) and subjective (relevance, realism, satisfaction) metrics are used to compare with traditional methods.

4. Case Study

We tested ABSPD with three groups: delivery workers, ride-share drivers, and simulation enthusiasts, involving 48 participants in total. Half used the traditional survey + 2D mapping method, while the other half used ABSPD. In the ABSPD condition, each participant created a personal VR layout, which was then aggregated into three consensus 3D designs.

5. Results and Discussion

The study found that ABSPD outperformed traditional methods in four areas:

Engagement: Participants were more motivated and expressive in VR.

Transparency: Spatial relationships were visible and easy to understand.

Collaboration: Shared VR environments reduced negotiation time.

Outcome Quality: ABSPD produced layouts with higher adjacency satisfaction, fewer errors, and better subjective ratings.

The weighting system also helped balance different roles' needs and made trade-offs more transparent to participants.

6. Conclusion and Future Work

This study shows that ABSPD, by integrating spatial adjacency analysis, VR, and agent-based modeling, can significantly enhance community participatory design. While this study focused on short-term sessions with a relatively small sample, future work should explore larger-scale, long-term adoption and integration with live civic data or digital twins.

Overall, ABSPD not only improves participation and layout quality but also bridges the gap between professional spatial logic and community preferences. This makes participatory design more inclusive, transparent, and effective.

Institutional Authorship and Immersive Distance

Paris Moon

Independent Educator and Art Management Professional

This paper examines how artistic authorship is being reconfigured through large-scale digital reanimations of traditional art. It focuses on a case study of Immersive-K: 구달바벌 (Clouds Clear, the Moon Shines, the Wind Blows, and the Stars Dance), an offer staged by Kansong Art Museum at Seoul's Dongdaemun Design Plaza(DDP). I claim the museum's digital reinvention of public domain Joseon Dynasty paintings has inaugurated a potent new mode of institutional authorship. In the text, we will refer to the exhibition as Immersive-K hereafter. This authorship creates a paradoxical condition that I call "immersive distance,"

associating sensory immersion with cognitive and critical disengagement from the original artwork. This paper analyzes the Kansong Art Museum not merely as a custodian of cultural heritage but as an institutional author.

My analysis is also based on Oliver Grau's (2003) studies of immersive media, which describe how they work to collapse the viewer's distance from the things being seen. This principle also offers a central lens through which to understand how the museum's creative and curatorial authorship influences the audience's impression, meaning that as an institution, it becomes the primary author of the encounter. The museum bets on some core creative decisions, like reanimating the landscape paintings of Jeong Seon (1676-1759). A central concern in aesthetic terms is the political iconography of Mt Geumgangsan in North Korea. The institution also stages the social vignettes in the work of Shin Yun-bok (1758-?). This pre-recorded digital scenography is a way to effectively rewrite the original works, telling a new story, one for the senses and a special type of authorship.

This process of creative re-authoring, ultimately dominated by the institution, creates a central paradox that I call "immersive distance. Building on Oliver Grau's (2003) principle that immersion diminishes critical distance, this concept identifies a critical disconnect: a cognitive gap that opens even amidst deep sensory absorption. The evidence for this lies in the audience's split perception experience. This framework reveals how digital remediation profoundly reconfigures the relationship among the audience, artwork, and institution. Consequently, it raises essential and ongoing questions about the nature of interpretive authority over digital cultural heritage. The seamless immersion, which Grau argues "disguises its own means," hides the museum's interpretive work. In doing so, it makes the institution's authorship of the past feel natural and inevitable to the public.

The ultimate author of these paintings is still the creator, but the Kansong Museum profoundly flexes its institutional authorship with this immersive reanimation. Following Carol Duncan's (1995) sense of museums as co-authors of meaning, the Kansong Museum is the author not of the original paintings but of this new digital experience. The museum becomes the agency of the viewer's experience by animating Jeong Seon's landscapes, choreographing Shin Yun-bok's social scenes, and crafting sensorial scenography that places the institution as an active author of audiences' encounters.

The institutional authorship of Immersive-K marks a fundamental shift in cultural stewardship, transforming the museum from a passive custodian into an active, creative author. The concept of "immersive distance" is thus central to this

analysis, providing an essential critical tool for diagnosing the nuanced power dynamics at play. This framework reveals how digital remediation profoundly reconfigures the relationship among the audience, artwork, and institution, raising essential and ongoing questions about interpretive authority in digital cultural heritage.

AI Materiality and Water: Socio-Technical Imaginaries of Elemental Matter

Sin Yi Choi

City University of Hong Kong

This paper investigates the materiality of artificial intelligence by examining the role of water in two Taiwanese media artworks: Su Yu Hsin's *Particular Waters* (2023) and Ku Kuang Yi's *God of Water* (2024). Both projects move beyond conventional AI discourses, using artistic mediation to uncover how elemental matter—specifically water—shapes and is shaped by AI technologies. Engaging with water as both ecological actor and cultural symbol, these works reorient our understanding of AI's infrastructure and its entanglement with the natural world. Taiwan, as a global center for semiconductor manufacturing, foregrounds this inquiry. Su Yu Hsin's installation interrogates the water networks sustaining the Taiwan Semiconductor Manufacturing Company (TSMC), drawing on feminist perspectives and micro-histories to reveal overlooked labor and material flows. Her work reconstructs the 2021 drought through the embodied experiences of a female water truck driver, foregrounding gendered dimensions of water logistics and the ecological disruptions underlying AI's material substrate. The installation combines video, material processes of integrated circuit fabrication, and speculative visualization to articulate new relationships between human, water, and technology.

In contrast, Ku Kuang Yi's *God of Water* fuses scientific and spiritual narratives, employing digital technologies and ritual to reimagine human-water relations. The work uses water as an anchor for algorithmic processes, contemplating the dominance of "supercomputers" and AI, and questioning how intelligence emerges in relation to natural forces.

Through the lens of socio-technical imaginaries, I argue that these artworks enact a kintsugi epistemology—repairing the rift between affect and empiricism, matter and meaning—by illuminating the seams where technology, art, and environment meet. Ultimately, this paper proposes that such artistic practices offer vital new

models for knowledge-making at the intersection of art, science, and society, particularly in an era shaped by technological transformation and ecological crisis.

Closing Keynote

The Stories We Live By: Modeling Collective Narratives

Andrew Piper

McGill University

Stories don't just describe the world, they actively shape it. From the myths that define national identity to the fragments of news and social media that shape public opinion, collective narratives organize how societies make sense of change. Yet in an era of algorithmic feeds and large-scale information flow, these narratives form and evolve faster and more diversely than we can comprehend them. This talk explores new methods for detecting and modeling collective storytelling across massive, multimodal datasets. Drawing on advances in large language models and classical narratology, I introduce a framework for tracing the actors, events, and values that coalesce into shared social stories: how they rise, transform, and stick around. By bringing narrative theory into conversation with computational modeling, "The Stories We Live By" offers a vision for how the humanities and AI together can illuminate the architectures of meaning that govern collective life.

Bio
