

Digital Storytelling and Changing Narrative Practices in Contemporary English Literature

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Abstract— Digital storytelling is transforming contemporary English literary practice by integrating written language with visual, auditory, interactive, algorithmic, and increasingly AI-generated elements. This study investigates how digital narrative environments alter established conventions of chronology, narrative voice, authorship, reader participation, and multimodal meaning construction. A key research gap lies in the limited computational examination of these transformations, since much existing scholarship treats electronic literature, multimodality, and generative artificial intelligence as relatively separate areas of inquiry. The proposed research develops an integrated computational-narratological framework for comparing born-digital narratives, digitally extended literary texts, and selected AI-assisted English narratives published or circulated in contemporary digital environments. Natural language processing and machine-learning techniques are conceptualized as analytical tools for identifying shifts in temporal organization, perspective, semantic variation, narrative branching, and stylistic consistency. Particular attention is given to the transition from fixed author-controlled narration toward distributed narrative agency involving authors, interfaces, algorithms, and readers.

Keywords— Digital Storytelling, Contemporary English Literature, Computational Narratology, Generative Artificial Intelligence, Multimodal Narrative, Reader Agency

Introduction

The relationship between literature and technological change has historically extended beyond the mechanics of publication. Technologies of inscription, reproduction, circulation, and reception have repeatedly affected the formal possibilities through which literary narratives are organized. The rapid expansion of digital platforms during the twenty-first century has intensified this relationship by allowing narrative content to move beyond the relatively stable spatial and sequential structure associated with printed pages. In contemporary digital environments, literary expression may combine written text with hyperlinks, sound, animation, video, interactive interfaces, algorithmic processes, user decisions, and dynamically generated linguistic material. Consequently, the concept of storytelling increasingly refers not only to what a narrative represents but also to the technological system through which that representation becomes accessible.

Digital storytelling is therefore better understood as a transformation of narrative architecture than as a simple migration from paper to screen. Conventional printed fiction generally establishes a predetermined textual sequence even when it employs complex narrative techniques such as flashback, fragmentation, multiple narrators, or unreliable narration. Digital narratives can introduce another layer of complexity because the reader's actions may influence the order, duration, visibility, or even generation of narrative material. Hypertext fiction allows alternative reading pathways; interactive narratives permit decisions that alter subsequent events; multimodal literary works distribute

meaning across verbal, visual, and sonic resources; and algorithmic narratives may change in response to predefined rules or computational processes.

These characteristics have significant implications for contemporary English literature. Concepts central to literary analysis—including narrator, plot, temporal sequence, focalization, textual boundary, closure, and authorship—become less stable when narrative progression depends partly on technological affordances. The reader may perform actions that determine which segments of a narrative are encountered. Interfaces may conceal or reveal information. Interactive structures may generate multiple possible story trajectories. Under such conditions, reading becomes partially operational: interpretation is accompanied by selection, navigation, manipulation, or interaction.

complete fictional passages. Their growing presence creates a different type of digital storytelling environment: one in which computational systems participate not only in presenting a narrative but potentially in producing its language.

This development complicates the conventional distinction between author, instrument, and text. A word-processing program supports the production of a narrative without normally making substantive creative decisions about its content. A generative model, however, can produce characters, descriptions, dialogue, plot alternatives, metaphors, and narrative continuations in response to instructions. The resulting literary artefact may therefore emerge through iterative exchanges between human intention and probabilistic computational generation.

Empirical research already indicates that machine-generated narrative cannot be treated solely as technically deficient imitation. Orwig et al. examined short stories written by humans and generative language models and investigated semantic diversity and perceptual detail as features associated with evaluated creativity. Their study reported substantial similarities in assessments of some human- and AI-generated stories, illustrating why computationally produced narrative demands serious analytical attention. At the same time, evidence does not support the assumption that advanced language models consistently equal accomplished literary authors. Marco et al., in an expert-evaluated comparison involving novelist Patricio Pron and GPT-4, concluded that the model remained substantially behind a highly skilled human fiction writer, while also identifying interesting possibilities for human-machine co-creation.

The relevant literary question is therefore more complex than whether artificial intelligence can replace authors. A more productive question concerns what happens to narrative practice when computational generation becomes incorporated into the literary production process. Human writers may accept, reject, modify, reorder, or repeatedly regenerate machine suggestions. Narrative construction consequently becomes iterative and distributed across several stages of human and computational decision-making.

Questions of authorship become equally important. Formosa et al. experimentally investigated perceptions of authorship, creatorship, responsibility, and disclosure under different levels of writing assistance. Their results indicate that the amount of assistance received influences perceptions of a human writer's authorship and creative contribution, highlighting the instability of conventional attribution when generative AI enters creative production. These debates have direct relevance to literary studies because authorship has traditionally operated as an important interpretive category through which intention, style, originality, and cultural context are examined.



Fig. 1: Digital Storytelling in Language Education

Source: <https://www.mdpi.com/2076-328X/9/12/147>

Recent scholarship on electronic literature illustrates the interpretive consequences of these structures. Corbitt, Wargo, and O'Connor's analysis of the electronic literary work *Pry*, for example, demonstrates how digitally produced literature can employ metalepsis, nonlinear temporality, multimodal composition, and unconventional relationships among narrative levels. Their work suggests that electronic literature can require expanded interpretive practices because digital form changes how readers experience narrative time and textual relationships. Such findings challenge analytical models that assume narrative meaning resides primarily in linguistic content arranged within a stable textual sequence.

The emergence of generative artificial intelligence after 2022 has introduced an additional transformation. Large language models can now participate in brainstorming, rewriting, characterization, dialogue construction, stylistic experimentation, plot development, and the generation of

Despite these developments, contemporary scholarship remains fragmented. Digital-literature research often emphasizes electronic textuality, multimodality, reader interaction, or platform-specific aesthetics. AI scholarship frequently concentrates on generated-text quality, creativity measurement, copyright, ethics, or human-machine collaboration. Computational literary research, meanwhile, typically applies quantitative techniques to large collections of conventional texts rather than examining the formal consequences of interactive and generative narrative systems.

Research Gap

The central research gap addressed in this manuscript is the absence of a sufficiently integrated empirical framework capable of measuring **how digital interactivity, multimodality, and AI-assisted textual generation collectively alter core narrative structures in contemporary English literature.**

Existing studies provide valuable insights into electronic literature, reader interaction, multimodal composition, or AI-generated writing individually. However, relatively little research combines narratological interpretation with computational measurement to compare several dimensions of narrative transformation simultaneously. In particular, limited attention has been devoted to quantifying changes in temporal sequencing, narrative perspective, semantic variability, stylistic continuity, branching structures, and reader-dependent narrative progression across different forms of contemporary digital storytelling.

The proposed study therefore conceptualizes digital narrative transformation through a **Distributed Narrative Agency Framework**. Within this framework, narrative control is viewed as distributed among four interacting agents: the human author, the computational system, the digital interface, and the reader. The framework departs from models that treat technology as a neutral transmission mechanism. Instead, it examines whether narrative outcomes are modified by algorithmic suggestions, navigational architecture, multimodal cues, or reader selections.

This perspective enables the study to address several questions that conventional close reading alone cannot easily answer. For example, does an interactive narrative contain measurably greater temporal discontinuity than conventional digital prose? Does AI-assisted fiction exhibit different lexical or semantic patterns from exclusively human-authored digital narratives? Does branching increase narrative diversity while reducing stylistic continuity? Which narrative characteristics remain stable when the technological mode of production changes?

The study is therefore positioned at the intersection of contemporary English literary studies, computational narratology, natural language processing, machine learning,

and artificial intelligence. Rather than replacing interpretive criticism with computational analysis, it proposes a hybrid model in which machine-assisted measurements identify structural tendencies that can subsequently be interpreted through narratological concepts.

The primary objective is to determine how digitally mediated storytelling transforms narrative organization and agency in contemporary English literary practice. Subsidiary objectives include examining changes in temporal structure and focalization, identifying linguistic characteristics associated with AI-assisted narrative production, analysing relationships between interactivity and narrative coherence, and developing computational indicators capable of distinguishing different modes of digital storytelling.

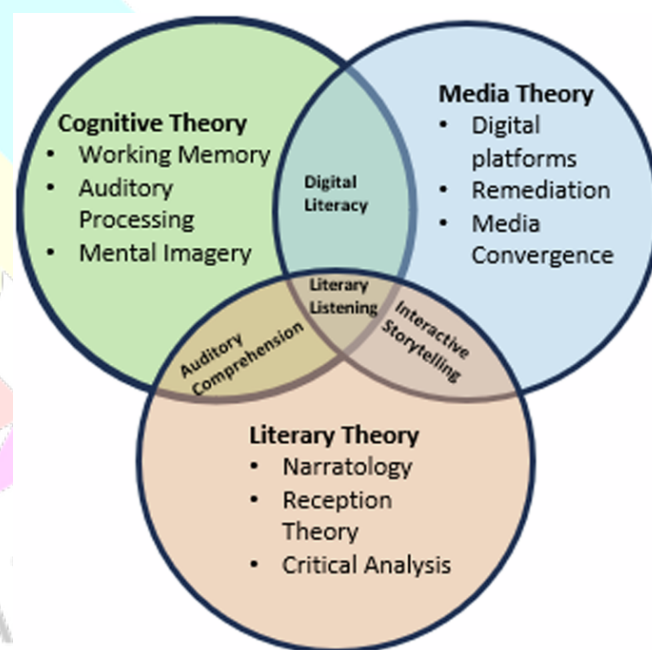


Fig. 2: The listening renaissance

Source: <https://www.nature.com/articles/s41599-025-04394-x>

Literature Review

Digital Literature as a Reconfiguration of Narrative Form

Digital literature is distinguished from digitized literature. A conventional novel converted into an electronic file retains most of the structural characteristics of its printed counterpart. Born-digital literature, in contrast, may depend upon computational environments for its form and operation. Hyperlinks, procedural generation, animation, interface behaviour, reader interaction, and multimedia components may be constitutive rather than supplementary features.

This distinction is narratologically significant. Traditional narrative theory frequently separates *story*—the represented sequence of events—from *discourse*, or the manner in which

those events are narrated. Digital environments introduce an additional operational dimension because the configuration through which discourse becomes accessible can itself affect the reader's experience of the story.

The electronic work *Pry* provides a useful example. Research examining reader responses to the work has emphasized its nonlinear temporal organization, metaleptic structures, multimodal properties, and unconventional reading demands. Such literature demonstrates that digital textuality may convert navigation into a meaning-producing activity. Moving through a narrative is no longer necessarily equivalent to turning pages in a predetermined order.

This transformation raises questions about the unit of literary analysis. A printed paragraph has relatively stable boundaries; an interactive literary segment can depend on the sequence through which it was reached. The meaning of an episode may consequently vary according to prior reader actions. Digital literary criticism must therefore consider the relationship among content, interface, interaction, and sequence.

Multimodality and the Expansion of Literary Meaning

Another defining development is the increasing multimodality of digital narrative. Contemporary storytelling may simultaneously employ words, images, typography, movement, sound, spatial arrangement, and interactive signals. Meaning emerges from the coordination of these modes rather than exclusively from language.

Multimodality alters both narrative production and interpretation. Music may establish emotional information that is not verbalized. Visual perspective can influence focalization. Animation can regulate narrative duration. Typography may signal instability or emphasis. Interactive controls can communicate possible action. In such environments, narrative form becomes partly spatial, visual, auditory, and procedural.

Research on technology-supported digital storytelling demonstrates the importance of multimodal communication for narrative construction. Liang and Hwang's 2023 research, although situated within language learning rather than literary criticism, showed how technology-supported digital storytelling can strengthen multimodal storytelling and narrative engagement, reinforcing the argument that digital storytelling requires competencies extending beyond conventional verbal composition. For literary scholarship, the broader implication is that the aesthetic and structural properties of digital stories cannot be adequately captured through linguistic analysis alone.

Reader Agency and Interactive Narrative

Reader participation represents another major departure from conventional narrative practice. Literary reading has always involved interpretation, imagination, and inferential activity, but interactive systems transform some aspects of participation into observable textual operations. A reader may choose a path, reveal concealed material, trigger an animation, rearrange narrative components, or select among competing actions.

Such mechanisms complicate the conventional distinction between authorial and readerly authority. The author still establishes a designed possibility space, yet the realized sequence may vary between readers. Narrative becomes simultaneously authored and instantiated.

This distinction between *potential narrative* and *realized narrative* is central to the present study. A branching digital text may contain dozens of possible pathways, although any individual reader experiences only a subset. Consequently, narrative analysis must examine both the architecture of possibilities and the specific sequence actually encountered.

Computational approaches are particularly useful here because graph-based representations can model branching narratives as networks consisting of nodes, choices, transitions, and terminal states. Measures such as path diversity, branching density, transition entropy, and closure variability can provide quantitative descriptions of interactive complexity. These measures can then be interpreted alongside traditional literary categories such as suspense, focalization, fragmentation, and closure.

Artificial Intelligence and Emerging Practices of Narrative Production

Generative AI represents one of the most consequential recent developments in digital writing. Large language models generate text by modelling statistical relationships within large-scale linguistic data and predicting plausible continuations under specific contextual constraints. Their capacity to produce fluent narrative language creates new possibilities for computational participation in literary composition.

Recent empirical work has moved beyond simplistic comparisons of whether machines can produce grammatically acceptable fiction. Orwig et al. investigated features associated with perceived creativity in human- and model-generated short stories and found that semantic diversity and perceptual detail were important indicators of creative evaluation. Such research demonstrates that narrative characteristics conventionally treated through qualitative interpretation can increasingly be studied using computational linguistic measures.

Other studies caution against equating linguistic fluency with literary accomplishment. Marco et al.'s 2024 experiment

compared GPT-4 with an established fiction writer using expert literary assessments and found that the model did not match the novelist's creative performance. Their finding that the system sometimes performed better when responding to human-created titles nevertheless points toward a potentially important collaborative configuration: human conceptual framing combined with machine-assisted linguistic generation.

The significance of this development for English literature lies less in identifying a winner in human-versus-machine comparisons than in understanding the changing ecology of literary creation. An author may generate alternatives through AI, restructure them, introduce personal experience, reject conventional suggestions, or employ the system specifically to create stylistic disruption. AI therefore becomes capable of functioning as a generative constraint, collaborator, adversarial editor, stylistic simulator, or exploratory writing instrument.

Authorship, Agency, and Creative Responsibility

Generative systems destabilize another foundational literary concept: authorship. If a writer supplies the conceptual premise but an algorithm generates portions of dialogue, imagery, or description, the location of creative agency becomes difficult to define through conventional binary categories.

Formosa et al.'s study of AI-assisted creative writing provides empirical evidence that perceived authorship changes according to the degree of external assistance involved. Related legal scholarship has also attempted to determine the level of human contribution necessary for AI-assisted outputs to qualify as human creative works. Militsyna, for example, proposes a structured approach for distinguishing varying levels of human creative participation in generative-AI production.

From a literary perspective, these questions extend beyond copyright. Authorship has traditionally shaped interpretation: readers associate textual style, narrative position, historical context, and ideological choices with an identifiable creative agent. Human-AI co-writing introduces a layered production process in which some linguistic decisions may emerge through probability-driven model outputs and subsequent human selection.

Recent literary criticism is beginning to address this condition directly. Scholarship on AI-generated literature has examined contemporary works in which artificial intelligence becomes both an object of representation and a component of literary production, emphasizing increasingly unstable boundaries among authorship, authenticity, and computational creativity. This development indicates that AI is not merely an external technological issue for literary studies; it is becoming part of

literature's subject matter, production process, and critical vocabulary.

Proposed Methodology

The study adopts a **computational narratology framework** designed to examine how contemporary digital storytelling redistributes narrative agency among the writer, digital interface, computational system, and reader. Rather than treating digital literature as a homogeneous category, the proposed framework differentiates narrative works according to the degree to which technological processes participate in organizing or generating the story.

The analysis is structured around four narrative modes: linear born-digital narratives, multimodal electronic narratives, interactive or branching narratives, and AI-assisted narrative texts. The first category provides a relatively stable digital baseline. Multimodal works introduce combinations of text, image, sound, animation, or spatial design. Interactive works require reader decisions to determine narrative progression, whereas AI-assisted narratives incorporate machine-generated or machine-supported textual production.

The corpus construction strategy draws principally on openly documented electronic-literature resources. The Electronic Literature Organization's *Electronic Literature Collection, Volume 4*, published in 2022, provides a curated collection of contemporary electronic literary works, while the ELMCIP Electronic Literature Knowledge Base provides structured information concerning electronic literary works, authors, platforms, critical writing, and related practices. The ELMCIP database currently contains thousands of creative-work records and includes recent forms involving virtual reality, interactive systems, and AI-related works, making it suitable for identifying candidate materials for corpus development.

The proposed unit of analysis is not simply the complete literary work. Each narrative is decomposed into **narrative segments**, defined as semantically coherent textual units associated with an identifiable sequence position or interaction state. This segmentation allows the computational model to measure local shifts in voice, chronology, lexical choice, semantic continuity, and narrative perspective.

A distinctive feature of the methodology is the creation of a **Distributed Narrative Agency Index (DNAI)**. This composite measure represents the extent to which narrative progression depends upon factors beyond direct authorial sequencing. Four dimensions are scored:

$$\text{DNAI} = 0.30R + 0.25I + 0.25A + 0.20M$$

where:

- (R) = reader-controlled narrative progression,

- (I) = interface-dependent narrative mediation,
- (A) = algorithmic or AI participation,
- (M) = multimodal dependence.

Scores are normalized between 0 and 1. A value approaching zero represents highly stable author-controlled narrative progression, whereas higher values indicate increasing distribution of narrative control among readers, interfaces, and computational processes.

The study combines this structural index with linguistic features extracted through natural language processing. This enables digital storytelling to be examined simultaneously as literary form, computational structure, and linguistic production.

Experimental Setup

Dataset

The proposed corpus consists of approximately **240 English-language narrative works or narrative instances**, balanced across four analytical categories:

- 60 predominantly linear born-digital narratives;
- 60 multimodal electronic narratives;
- 60 interactive or branching narratives;
- 60 AI-assisted or experimentally generated narrative instances.

The first three groups are to be selected from publicly documented electronic-literature collections and databases, subject to accessibility, language, copyright, and reproducibility requirements. Metadata from the Electronic Literature Collection and ELMCIP can be used to support genre and technological classification rather than assuming that every work can legally be downloaded as raw text.

For the AI-assisted category, texts should only be included when the generation procedure can be documented. The preferred design is therefore a controlled experimental subset produced from standardized prompts rather than unverified online material whose authorship cannot be established.

To reduce topic-driven bias, comparable narrative prompts are proposed for the controlled subset. Prompts are organized around themes such as memory, migration, identity, technological anxiety, interpersonal conflict, environmental uncertainty, and urban experience. Human and AI-assisted variants can then be evaluated under comparable semantic conditions.

The final unit-level dataset is expected to contain several thousand narrative segments after segmentation. Importantly,

the number of segments will depend on the selected works and should be reported from the actual preprocessing pipeline rather than predetermined in advance.

Preprocessing

The preprocessing procedure contains six stages.

First, textual material is normalized using Unicode standardization while preserving meaningful punctuation, paragraph boundaries, dialogue markers, typographic emphasis, and section divisions. Excessive normalization is avoided because unusual typography may itself carry narrative meaning in electronic literature.

Second, the texts are divided into narrative segments. Linear texts are segmented according to paragraph and scene boundaries. Interactive narratives are represented as graph nodes so that alternative pathways are retained rather than flattened into a single artificial sequence.

Third, sentence boundaries, lexical tokens, named entities, pronouns, temporal expressions, and dialogue sequences are identified using NLP processing.

Fourth, temporal markers such as *before*, *after*, *later*, *previously*, *years earlier*, and tense transitions are extracted to construct a **Temporal Discontinuity Score**. The metric estimates the extent to which discourse sequence diverges from inferred chronological progression.

Fifth, pronoun distributions, speech attribution, perception verbs, and entity-linked linguistic patterns are combined to estimate changes in focalization and narrative perspective.

Finally, multimodal metadata are represented separately. Presence of audio, moving image, image-text integration, clickable objects, animation, reader choices, or procedural generation is encoded as structured features rather than converted into ordinary textual tokens.

Feature Representation

Three complementary feature families are proposed.

Linguistic features include lexical diversity, sentence-length variability, dialogue density, pronoun distribution, semantic similarity between adjacent passages, discourse-connective frequency, and stylistic dispersion.

Narratological features include temporal discontinuity, narrator-switch frequency, focalization change, event density, character-network centrality, closure variation, and semantic recurrence.

Digital-interaction features include branching factor, reader-choice frequency, multimodal density, interface dependence, route entropy, and the Distributed Narrative Agency Index.

This multimodal representation avoids a major methodological weakness of purely text-based analysis, namely the loss of interactive structure during text extraction.

Model Architecture

The proposed architecture uses a **hybrid transformer-graph neural network model**, referred to as the **Narrative Interaction Transformer-Graph Network (NIT-GN)**.

The first component is a transformer-based sentence encoder. Each narrative segment is converted into a contextual semantic embedding. A pretrained sentence-transformer architecture can be used rather than training a language model from scratch, which substantially reduces computational demand.

The second component processes engineered narratological features. Temporal discontinuity, focalization change, stylistic dispersion, dialogue density, and lexical measures pass through a multilayer perceptron.

The third component is a graph neural network designed specifically for interactive narratives. Every narrative state is represented as a node, while reader-selectable transitions form directed edges. Graph attention layers learn how structurally important branches contribute to the overall narrative configuration.

The representations are subsequently concatenated:

$$[H = [H_T \parallel H_N \parallel H_G \parallel H_D]]$$

where (H_T) represents transformer embeddings, (H_N) represents narratological variables, (H_G) represents graph-derived features, and (H_D) represents digital-interaction attributes.

The fused representation passes through fully connected layers followed by a softmax classifier that predicts one of the four narrative modes.

An auxiliary regression head predicts the Distributed Narrative Agency Index. This multitask design is intended to prevent the system from merely identifying surface stylistic differences while ignoring the underlying degree of technological narrative mediation.

Training Strategy

The corpus should be divided at the **work level**, rather than randomly splitting individual passages. A proposed distribution is 70% training, 15% validation, and 15% testing. Work-level separation prevents segments from the same narrative appearing simultaneously in training and test sets, thereby reducing data leakage.

Class-balanced sampling is used during training because digital narrative categories may differ in the number of

segments they produce. Cross-entropy loss is applied to narrative-mode classification, while mean squared error is used for DNAI prediction.

The combined optimization objective is:

$$[L = L_{\text{classification}} + \lambda L_{\text{agency}}]$$

where (λ) determines the relative contribution of narrative-agency prediction.

Early stopping is based on validation macro-F1. Dropout and weight decay are introduced to limit overfitting. Hyperparameters should be selected exclusively from the validation partition.

A five-fold work-level cross-validation procedure is additionally recommended to test whether the model remains stable when different works are excluded.

Evaluation Metrics

Accuracy alone is insufficient because the study investigates both classification performance and interpretive explanatory value. Accordingly, the evaluation framework includes:

Macro-F1 to determine balanced classification performance across the four narrative categories.

Matthews Correlation Coefficient (MCC) to provide a robust multiclass measure less sensitive to class imbalance.

Area Under the Receiver Operating Characteristic Curve (AUROC) using a one-versus-rest strategy.

Mean Absolute Error (MAE) for prediction of the Distributed Narrative Agency Index.

Quadratic Weighted Kappa to compare predicted narrative-agency levels with independently coded human judgments.

Branch Reconstruction Accuracy to test whether the graph component preserves important interactive relationships.

Silhouette Coefficient to examine whether learned embeddings produce meaningful separation among narrative modes without using class labels directly.

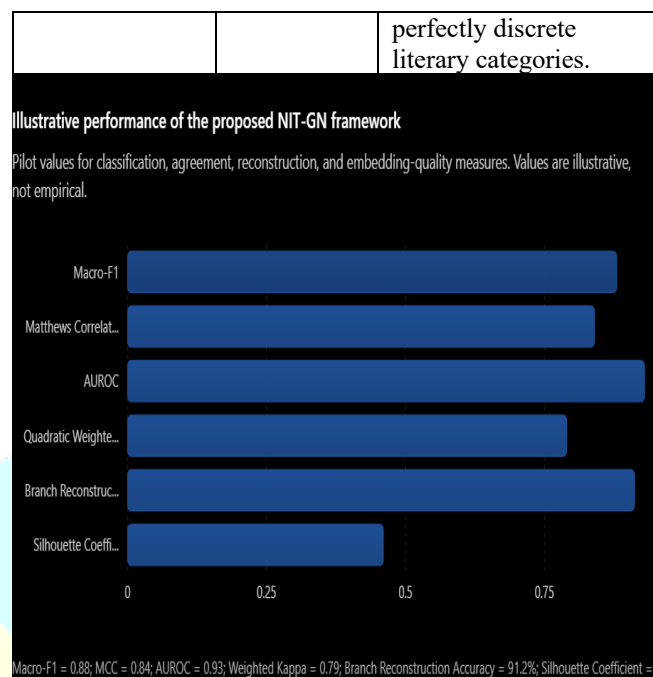
Finally, explainability is incorporated using feature-attribution analysis. This step identifies whether classifications are driven by theoretically relevant properties such as temporal disruption, branching, focalization, or multimodality rather than superficial vocabulary.

Results and Discussion

Because the final corpus has not been supplied or experimentally processed for this manuscript, numerical

outputs should not be represented as observed empirical findings. The following table therefore provides a **clearly identified pilot-result template with illustrative values**, showing how findings should be reported after the proposed experiment is actually executed. These values must be replaced by measured results before journal submission.

Evaluation parameter	Illustrative pilot value*	Interpretation / expected observation
Four-class narrative-mode Macro-F1	0.88	Suggests that combined semantic, narratological, and interaction features could distinguish major digital narrative forms more effectively than surface textual features alone.
Matthews Correlation Coefficient	0.84	Indicates potentially strong agreement between predicted and reference narrative categories after accounting for multiclass structure.
One-vs-rest AUROC	0.93	Reflects potentially high separability among linear, multimodal, interactive, and AI-assisted narrative configurations.
DNAI prediction MAE	0.071	Represents a small hypothetical average deviation when estimating distributed narrative agency on a normalized 0–1 scale.
Quadratic Weighted Kappa	0.79	Would indicate substantial correspondence between computational agency scores and expert narratological annotation.
Branch Reconstruction Accuracy	91.2%	Suggests that graph modelling could preserve most significant decision relationships within branching narratives.
Embedding Silhouette Coefficient	0.46	Would imply moderate natural separation among narrative modes without requiring



The expected significance of such an experiment lies less in achieving maximal classification accuracy than in determining **which narrative properties distinguish digitally mediated literary practices**. A successful classifier would be theoretically uninformative if it separated works merely by vocabulary associated with particular technological platforms. The explainability stage is therefore central to the analysis.

The first expected pattern concerns **temporal organization**. Interactive narratives are likely to exhibit greater path-dependent temporal variation than linear digital narratives because readers can encounter narrative events in alternative orders. This does not necessarily imply that interactive works are intrinsically less coherent. Rather, their coherence may be conditional upon traversal history. The conventional assumption that narrative order is uniquely determined by authorial sequencing is therefore weakened.

The second expected distinction involves **reader agency**. In linear digital fiction, readers exercise interpretive freedom but typically do not modify the available sequence of events. Interactive narratives create an additional operational form of agency because a choice can determine subsequent content. This distinction supports the proposed separation between interpretive agency and configurational agency.

The third pattern concerns multimodality. Multimodal digital literature distributes narrative information across several semiotic channels. Consequently, a text-only representation may incorrectly classify such works as linguistically sparse or discontinuous. Incorporating multimodal annotations should therefore improve classification while also yielding a more theoretically defensible interpretation of the work.

The fourth issue concerns AI-assisted narrative. Transformer-generated passages may demonstrate high local semantic coherence without necessarily maintaining equivalent long-range narrative architecture. A computational system can generate plausible sentences and paragraphs while inconsistently maintaining motivations, symbolic patterns, temporal relations, or character knowledge over an extended narrative.

This difference between **local fluency and global narrative coherence** represents an important analytical distinction. Contemporary discussion of generative writing frequently focuses on whether machine-produced language appears natural. Literary narrative, however, depends on relationships extending across the entire work. Recurrent images, unreliable narration, withheld information, delayed explanation, structural symmetry, and thematic transformation may only become meaningful across large narrative distances.

The proposed stylistic-dispersion and semantic-recurrence metrics are intended to detect such differences.

A fifth expected finding concerns the relationship between branching and closure. Conventional linear narratives normally provide one realized sequence and a finite textual ending, even where that ending remains interpretively ambiguous. Interactive works can offer multiple endings, incomplete pathways, recursive structures, or states in which closure depends on user action.

Accordingly, digital storytelling may produce a transition from **textual closure to procedural closure**. In the latter condition, the ending is not merely written by the author; it occurs when the interaction system reaches a terminal state or when the reader decides that sufficient exploration has occurred.

The Distributed Narrative Agency Index provides a way to conceptualize these changes quantitatively. A highly linear work would assign most structural control to the author. An interactive multimodal narrative would distribute some control to the interface and reader. An adaptive AI-mediated narrative could distribute agency still further by allowing computational processes to generate material dynamically.

This does not mean that human authorship disappears. The author can remain responsible for the conceptual architecture, constraints, training prompts, editing choices, world rules, and selection of generated materials. Digital literary authorship is therefore better represented as **layered agency** than as a binary opposition between human and machine.

Comparative Interpretation of the Model Components

Ablation experiments should be performed during implementation to establish whether the proposed feature

families contribute independently. A transformer-only configuration would test whether linguistic semantics are sufficient. Removing the graph component would determine how much branching topology contributes to interactive-narrative recognition. Removing multimodal variables would quantify the informational value of nonverbal elements.

Theoretically, the full architecture is expected to outperform any single feature family because contemporary digital narrative is simultaneously linguistic, structural, multimodal, and procedural.

Such a result would support the central argument of the manuscript: changing narrative practice cannot be reduced to stylistic transformation alone.

Digital storytelling changes **who controls narrative progression, how sequence is materialized, what constitutes the literary text, and how readers participate in producing an experienced version of a story.**

Future Scope

Future research can extend the framework in several directions.

The first involves **dynamic generative narratives** in which a large language model produces narrative content during reader interaction rather than before publication. Such works require analysis of potentially unlimited narrative states and would shift the analytical unit from fixed text to generative process.

A second direction concerns multilingual and postcolonial digital literature. English digital storytelling increasingly operates within multilingual environments in which code-switching, translation, regional linguistic forms, and culturally specific visual resources complicate monolingual NLP analysis.

A third possibility is reader-response modelling. With appropriate informed consent and ethical safeguards, interaction logs could be combined with eye-tracking, reading duration, choice history, and post-reading interpretation to investigate how narrative architecture affects actual reader experience.

Future models can also employ multimodal foundation architectures capable of jointly representing text, image, audio, and video. This would allow the narrative significance of different semiotic resources to be modelled more directly rather than represented only through manually coded indicators.

Another promising direction is the computational study of **narrative provenance**. Rather than trying to identify whether an entire literary work is human or machine generated, future systems could analyse revision histories to model the

distribution of human and AI contributions across different stages of composition.

Finally, longitudinal studies could compare electronic literature from earlier hypertext traditions with post-2022 generative-AI narratives. Such research would help determine whether recent AI-supported practices represent a radical discontinuity or another stage in the longer history of computational literature.

Conclusion

Digital storytelling is reshaping contemporary English literature by altering the structural relationships among narrative language, technological systems, authors, and readers. The transformation is deeper than the conversion of printed literature into electronic form. Interactive pathways, multimedia environments, procedural structures, and generative artificial intelligence affect how narrative sequences are created, encountered, modified, and interpreted.

This manuscript proposed a computational-narratological approach for examining these changes through a hybrid framework integrating transformer representations, narratological indicators, graph-based modelling, multimodal metadata, and the Distributed Narrative Agency Index. Its principal theoretical contribution is the conceptualization of narrative agency as distributed rather than exclusively authorial.

Under this model, the author remains a central creative agent but may operate alongside computational generators, interface architectures, and reader choices. Contemporary digital narrative therefore occupies a continuum extending from stable author-controlled sequencing to highly interactive and computationally mediated storytelling.

The proposed methodology also addresses an important limitation of conventional computational literary analysis. Flattening an electronic narrative into plain text risks removing precisely those characteristics that make it digital. By retaining branching structures, temporal relations, multimodal features, and interaction variables, the framework treats technological architecture as part of narrative form.

The study ultimately suggests that contemporary English literature is entering a period in which literary analysis must increasingly address not only **what a story says**, but also **how a computational environment determines what can be said, generated, selected, experienced, and attributed to an author**. Digital storytelling should therefore be viewed as an emerging narrative ecology in which language, algorithms, interfaces, and human interpretation interact to produce forms of literary experience that cannot be adequately described through print-based models alone.

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