МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ
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ІТ-ПРОСТІР СЬОГОДЕННЯ: ТЕНДЕНЦІЇ, ІННОВАЦІЇ ТА ПЕРСПЕКТИВИ РОЗВИТКУ

Збірник тез доповідей
ІІ Міжнародної науково-практичної студентської конференції

(15 жовтня 2025 року, м. Харків, Україна)

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UDC 004.89

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A COMBINED METHOD FOR LEVERAGING LARGE LANGUAGE MODELS IN THE ANALYSIS AND GENERATION OF CREATIVE TEXTS

The rapid development of large language models (LLMs) has opened new opportunities for creative industries, particularly in the field of literary text generation and analysis. Yet, despite their impressive ability to generate coherent text and mimic literary styles, LLMs still face notable challenges. They often produce superficial or formulaic narratives, often lack emotional depth and originality, and struggle to maintain consistency over long passages, leading to contradictions or fragmented storylines. To overcome these limitations, a combined method for leveraging LLMs is introduced. The method integrates the most effective LLMs for analysis and generation into a single workflow, ensuring higher overall quality, consistency, and adaptability of results.

At the core of the method lies the experimental selection of two distinct models: an LLM-Analyst (responsible for semantic and logical interpretation and structuring of input data) and an LLM-Generator (responsible for producing coherent literary text). These models are chosen based on their empirical strengths – some LLMs demonstrate higher performance in analysis, while others excel in creative generation.

The proposed method is structured into several sequential stages, each addressing a specific aspect of literary text analysis and generation:

Stage 1. Input Data Formalization. This stage involves structuring and formalizing the input information provided by the user. The inputs include unstructured descriptions of characters, locations, world rules, and prior events in the story, which together define the narrative context. In addition, the user provides a prompt specifying the intended scene, stylistic preferences, mandatory and prohibited elements and events, illustrative examples, and generation parameters such as maximum length or tone. The purpose of this stage is to decompose these inputs into structured components that can be systematically interpreted by the LLM-Analyst [1].

Stage 2. Analytical Representation. At this stage, the LLM-Analyst performs a detailed semantic and logical analysis of the structured character descriptions and narrative context prepared in Stage 1. This structured interpretation provides a comprehensive profile for every character, enabling the system to reason about their behavior and interactions within the narrative. Based on these profiles, the LLM-Analyst generates a set of permissible actions for each character.

Stage 3. Text Generation. In this stage, the LLM-Generator receives the structured prompt produced by the LLM-Analyst and produces the literary text of the scene. The generator takes into account the comprehensive scene model, including character profiles, permissible actions, world context, previous events, and stylistic or tonal instructions from the user prompt. During generation, the model aims to maintain logical consistency in the plot and character behavior, adhere to the desired style and tone, ensure that mandatory actions are performed, and avoid any forbidden actions.

Stage 4. Quality Evaluation. The final stage of the method focuses on assessing the quality and consistency of the generated text. The output is evaluated against a comprehensive set of criteria, including adherence to mandatory actions and prohibitions specified in the prompt, logical consistency of the plot, coherence of character behavior, and conformity with the desired style and tone. If any discrepancies are identified – for instance, missing mandatory actions, violations of narrative logic, or stylistic inconsistencies – the text is iteratively refined. The iterative validation and regeneration process guarantees a high-quality, contextually appropriate, and stylistically consistent result [2].

Figure 1 provides a visual overview of the proposed combined method for leveraging large language models in literary text analysis and generation.

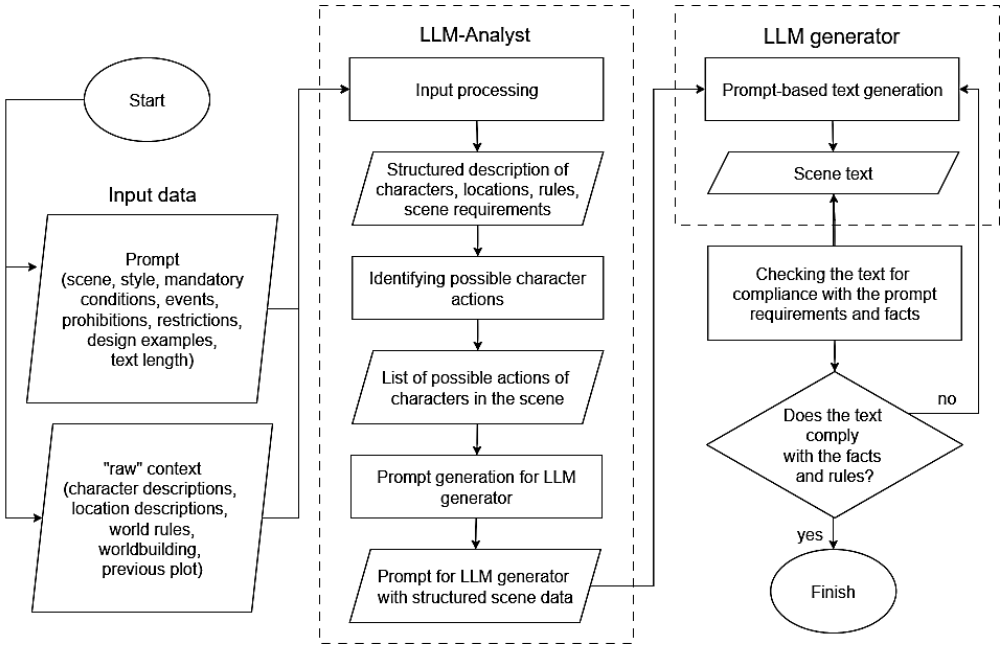

Figure 1 – Diagram of the combined method for leveraging large language models in the analysis and generation of creative texts.

The proposed combined method leverages the complementary strengths of multiple LLMs to produce coherent, stylistically consistent, and logically sound literary texts. By integrating structured analysis, generation, and iterative quality evaluation, it ensures narrative consistency, character fidelity, and adherence to user-defined constraints, offering an effective tool for creative text generation and literary analysis.

Further research plans to integrate the steps described above into computer vision tasks [3-11].

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UDC 004.67

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DESIGNING APPLICATIONS FOR PROCESSING AND ANALYZING LARGE AMOUNTS OF DATA (BIG DATA) IN DISTRIBUTED SYSTEMS

Introduction. In today's digital economy and information society, processing and analysis of large amounts of data, known as Big Data, is becoming a critically important component of any organization that seeks to effectively use information resources for decision-making, forecasting trends, and optimizing business processes. The proliferation of sensor networks, social media, the Internet of Things, and mobile applications leads to a continuous increase in the amount of data that needs to be collected, stored, processed, and analyzed in real time. This requires new approaches