

The use of ChatGPT in creative writing assistance

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DOI: 10.18355/XL.2024.17.01.01

Abstract

This paper explores the integration of ChatGPT, an advanced AI language model, into creative writing. The paper investigates the capabilities of ChatGPT in generating novel story ideas, characters, plots, and stylistic elements such as metaphors and dialogue within various genres, including narrative, poetry, and drama. With its generative potential, ChatGPT is a valuable tool to simplify the creative writing process, providing authors with innovative concepts and supporting material that can be further developed and refined. Key findings of the study include ChatGPT's ability to craft detailed character portraits, engage in realistic dialogue, and produce atmospheric descriptions. While the chatbot can occasionally produce repetitive or biased results, careful human curation and interaction with the model can mitigate these issues and improve the writing process. The paper concludes that, despite limitations, AI agents like ChatGPT can significantly reinforce human creativity in writing, provided they are used as inspiration rather than a replacement for human ingenuity. The research underlines the importance of research on AI and creativity, especially regarding the ethical implications and the balance between human and machine contributions to art.

Key words: ChatGPT, AI in creative writing, story development, character creation, stylistic devices, ethical considerations, AI-human collaboration

Introduction

Online instruments for generating texts, images, sounds, videos, etc., based on AI technology have become available to a large number of people. At the end of 2022, OpenAI released ChatGPT, and people started to test this text-generating system, initially perceiving chatbot as a playful activity. Nevertheless, users discovered the generative potential of the language model and began to use it for more advanced tasks, such as writing books.

In Ukraine, two publishing houses used AI technology in their products (Kryzhnia, 2023; Boiko, 2023) to draw attention to the AI-using ethical issues. In the USA, the situation appears to be more expository, i.e., the Amazon site removed suspicious AI-generated books that imitated the work of real authors and limited the number of possible books published to three per day. The company also changed the rules, indicating whether the authors used AI-based tools in their products (Horlach, 2023). This situation caused outrage in the Authors Guild: more than 8,000 writers signed a collective letter to AI companies demanding decent compensation for using their copyrighted works for AI training (Knight, 2023).

As a consequence, new terms “AI-generated” and “AI-assisted” have emerged (Creamer, 2023). The first one is used when the initial text is created by AI-agent, even with significant human editing afterwards. “AI-assisted” is used to describe works initially created by humans but refined using AI tools such as grammar and spellcheckers or even language and style analysis tools (Clark et al., 2018). AI agents could also be used for generating ideas and brainstorming, as far as the initial text is created by the human author (Creamer, 2023). We consider these guidelines from Amazon crucial for identifying the AI role in writing texts because AI-generated works cannot be protected by copyright (Brittain, 2023).

Considering all the above, we believe that AI should not be observed as a threat but rather as a potent tool to expand the boundaries of human creativity. A conscious approach to the use of AI in creative writing will help avoid misunderstandings and copyright violations. This fact leads us to the necessity of a deep and detailed study of the generative potential of the language models, particularly in the context of creative writing.

Literature review

Early works in the AI area relied on classical AI algorithms, such as symbolic and logical planning and graph traversal, to generate stories, typically with some level of user control, such as being able to specify an initial setting of goals and conditions (Turner, 1993). Recent advances in machine learning have significantly perfected computers to “learn and change their behavior through search, optimization, analysis or interaction, allowing them to discover new knowledge or create artefacts which exceed that of their human designers in specific contexts” (McCormack & D’Inverno, 2014, p. 2).

Since creativity requires generating original and productive ideas (Amabile, 1983), AI-powered tools are used for creative writing assistance and human author inspiration. With their unexpected, unusual and novel results (Sternberg, 2005) machines help people to overcome “cognitive inertia,” a phenomenon known in the writing domain as “writer’s block” (Burstein et al., 2008). Just as the use of a traditional word processor, a spellchecker, or a deck of ideation cards to expedite the writing process (Ippolito et al., 2022), the capabilities of using AI tools to assist creative and argumentative writing are now being explored (Lee et al., 2022).

AI agents can significantly alleviate the creative writing process, making it more pleasant for the human author. These systems assist people by suggesting content as they write and are designed to inspire creativity throughout the writing process while still leaving writers in control of the final written artifact (Clark et al., 2018). NLG-powered systems enable people to plan (sketching an outline for the story), write (getting words down) and edit (rewriting existing text) their stories (Coenen et al., 2021). Chatbot is also designed to help users brainstorm ideas, assist the research process, refine the work and evaluate the text afterwards like a beta reader. AI agents like Wordcraft are also used for more specific tasks, such as story seeding, sentence continuation, word meaning expansion, text generation from the prompt, alternative suggestions and text rewriting. Human writers use chatbots in quite different ways; i.e. some prefer to develop narrative ideas and high-level plots, while others generate passages and phrases that can be put directly into the story (Ippolito et al., 2022).

Researchers report on different experiences of the chatbot-human interaction. The writers take inspiration from the AI-generated texts, as AI-agent suggests more unexpected results and uncommon plot twists comparing to human composed pieces (Yang et al., 2022). This process is also related to the fact that machines cannot fully understand the intentions of human writing, so they are more likely to create unexpected plots and drive the development of the story (See et al., 2019). AI suggestions can sway authors from their own ideas about the direction of the story and offer ideas they may not have thought of (Clark et al., 2018). AI systems are also capable of supporting the expression of writers’ unique intentions and moving them in an unexpected direction (Gero et al., 2019). At the same time, users have no consistent view on interaction with AI and the level of its creativity. Some people thought that AI could be quite creative, while others considered AI could to be creative to a certain extent because it is the product of human activity, and others did not think that AI could be creative at all. The opinion might be changed upon interaction with an AI agent, from “it can be quite accurate” to “it is creative enough” (Singh et al., 2023).

Despite the versatile opportunities, AI technologies impose their own limitations, such as the lack of transparency and reproduction of already existing biases (Abdul et al., 2018). Chatbot also lacks an understanding of the semantic contents of narrative discourse, as well as the psychological faculties and communicative practices that constitute fiction as a practice (Ghajargar et al., 2022, p. 232). Oloff C. Biermann et al. (2022) elicited three sets of primary barriers to the adoption of human-AI co-writing: 1) dominance of emotional values over AI-generated writing productivity; 2) distrust in AI when challenging sub-tasks such as creating characters and dialogue; and 3) expectation that the AI generating strategies will mismatch the writer's initial intention.

Regardless of the limitations, AI can assist human writers not only within the narrative but also in poetry and drama. Piotr Mirowski et al. (2023) presented Dramatron, an interactive co-writing tool that allows writers to generate scripts from a provided log line. It was stated that "hierarchical story generation with explicit narrative structures and characters helps to generate more coherent text, especially when generating text as long as theatre scripts and screenplays". (Piotr Mirowski et al., 2023, p. 14) In the case of poetry, language models were able to create emotionally charged poetry following the time-honored tradition of dream-like language (Bena & Kalita, 2020). Tuhin Chakrabarty et al. presented CoPoet, a collaborative poetry writing system. A study with 15 qualified crowd workers showed that users successfully write poems with CoPoet on diverse topics ranging from Monarchy to Climate change. The scientists concluded that "language models acting as writing assistants are capable of understanding user intents and collaborating with them to improve the final outcome, potentially makes a challenging task such as poem writing more accessible to users" (Chakrabarty et al. 2022, p. 9).

Our research **aims** to identify the AI generative potential through using ChatGPT in creative writing.

The **tasks** of our study are as follows:

1. Investigate ChatGPT's capability to supply human writers with unexpected ideas, inspiring interaction with a chatbot for novel concept development.
2. Examine how repetitive suggestions, an excess of artistic devices, and potential copyright violations might hinder human authors from utilizing ChatGPT in creative writing.
3. Evaluate whether a complete and comprehensive story concept can be generated within a single chat session, starting from a general idea and concluding with stylistic device suggestions and refinement.

Methods

We have conducted a Google Scholar search to find the most relevant research articles, conference proceedings and book chapters related to the AI-agents usage in creative writing. We also studied reference lists of selected academic articles and used non-academic media references to substantiate the relevance of the issue.

Then, we conducted an experiment using the ChatGPT interface to test the generative, creative and comprehensive potential of chatbots in creative writing. The main writing tasks were identified, such as creating ideas and concepts, developing the plot and characters, writing dialogue, making a description and creating an appropriate atmosphere, and adding stylistic devices. According to these functions, five coherent story concepts in different genres (children, young adult, romance, fantasy and detective) were developed using ChatGPT (Figure 1).

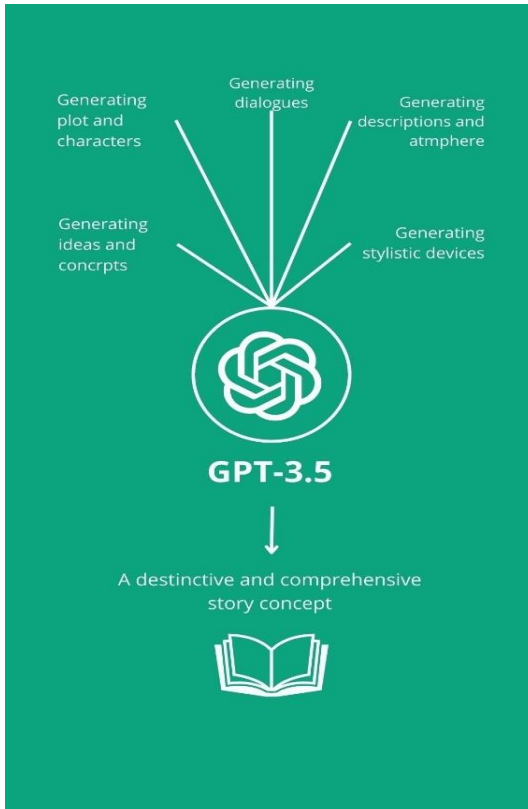


Figure 1. General scheme of chatbot operation to create a complete story concept

Results

Generation of ideas and concepts. Our research method is based on a gradual creative writing process, from the general idea to the stylistic devices’ development within one chat. ChatGPT proposes an idea of the story from the first prompt in the view of generalization as fundamental for AI agents’ operations. The AI-generated answer can be used as a hint for further questions to the chatbot, a source of inspiration to develop a detailed plot, characters, etc. ChatGPT accommodates all the story’s details within one chat, providing an artistic space for human creativity and an enjoyable writing experience. Considering these principles, five distinctive story concepts in different genres have been generated using ChatGPT (Table 1).

Table 1. Summary of comprehensive stories generated by ChatGPT

No	Genre	Title	Plot summary
1	Children	“The Adventures of Whiskers the Wonder Kitten”	The story about kitten Whiskers, who travels through time with the help of his magic tail. Together with his owner Emma, Whiskers discovers different historical periods: from Ancient Egypt to the 22nd century. Along the way, they meet friends in each time period

			who help them to overcome difficulties and advance to the next level. The ultimate goal of their adventure is to solve a mystery of the Whiskers’ magic tail – to protect the balance of time and preserve true friendship.
2	Young adult	“Eclipsed Echoes”	<p>In an imaginary world, people have the ability to share memories with others and store them in a collective database. However, there are people who want to erase or change some memories, because they are traumatic and unpleasant. This leads to the appearance of the Memory Outlaws, a group that protects such memories, called Eclipsed Echoes, from any corruption.</p> <p>The main character Elara wants to become a memory curator to operate the memory database. At the same time, she has a genuine interest in the ethics of memory modification and want to explore the Eclipsed Echoes more deeply. Together with her friend Liam, Elara explores the world of the Memory Echoes, uncovering secrets linked to her family’s past and competing with her main enemy Dr Malloy.</p>
3	Romance	“Love on the line”	<p>There are two parallel storylines in this concept: Emma and Max love story at the present day and Evelyn and James love story a few decades ago. Emma and Max meet each other by chance in a stalled subway car, discover that are quite different, but want to spend time together. One day they accidentally find a secret Evelyn’s diary, which tells the story of true love between her and James, people from two different worlds, that can’t be together due to class division and social expectations. However, Evelyn and James finally meet each other at the present day with the help of Emma and Max. It makes a deeper connection between two plot lines.</p>

4	Fantasy	“The Chronicles of Aetheria”	Fantasy novel with the elements of adventure that tells us the story of a fictional world, Aetheria. The country is made up of regions corresponding to the five elements: fire, water, air, earth and spirit. Corwin, a young boy who lives in the Earth region, has a unique ability to manipulate all five powers and keeps it secret. But with the Abyssal Overlord threatening to consume all of Aetheria, Corwin and his friends embark on a journey to win the favour of the Elemental Guardians, collect the necessary artefacts, defeat the Abyssal Overlord and save Aetheria.
5	Detective	“The Cipher Conundrum”	Professor Alexander Hayer has been mysteriously murdered in his study. Detective Sarah Michaels believes that it has something to do with the ancient medieval manuscript the scientist was actively deciphering just before his death. Together with her colleagues, experts and friends, Sarah solves this intricate and mysterious case, uncovering the true murder and his hidden motives.

While generating ideas, the chatbot’s answers are quite structured and include such notions as “concept”, “plot summary”, or “main topic”. For children’s novels, there might be suggestions for illustration material. This structure is helpful for text skimming, time-saving and taking for further work only the part of the generated text that is valuable to the human author. Chatbot works similarly not only while generating ideas but also while describing characters and places. The human author can ask ChatGPT to shorten the text to avoid processing a large amount of information.

ChatGPT generates not just a single idea but also the main points of the future plot and prototypes of the characters simultaneously. The holistic answer could be taken for further development and refinement. This peculiarity of an AI agent’s work must be considered while asking the chatbot about the direction of the plot development or the character’s features. A human author should better do it smoothly, like talking to a real person (Figure 2). It helps to find out more details about the imaginary or real novel’s world, making the story sound more complex and deeper. However, the generation of such a concept using ChatGPT requires curiosity from human authors and the ability to formulate the right questions in order to get clear answers. It is important to ask chatbot consistently and follow the logic of the story.

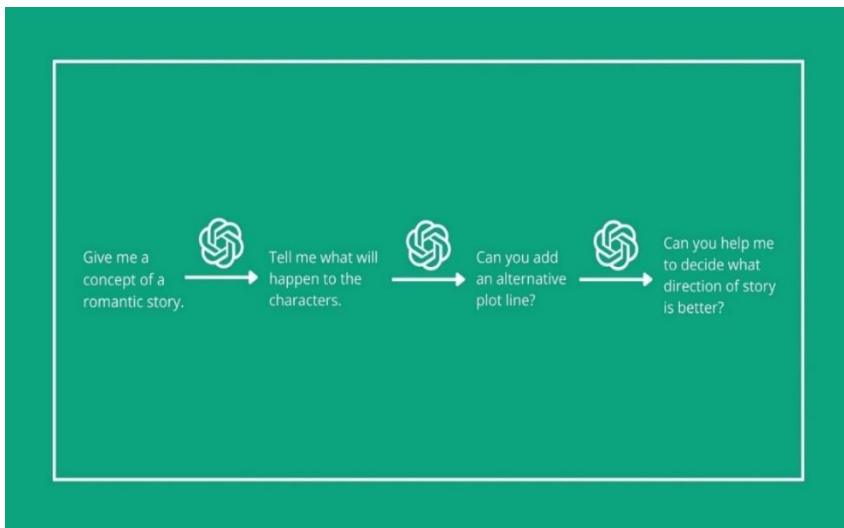


Figure 2. The creative writing process using acquisitive prompts to ChatGPT

The chatbot effectively combines incompatible ideas and creates unobvious and extraordinary story concepts. For example, combining detective and historical aspects in one story makes it more complex and interesting for a diverse range of readers (Table 1, Story 5). At the same time, adding psychological elements of memory preservation to the young adult fantasy story provides a better understanding and resonating among teenage readers (Table 1, Story 2). In terms of the content, ChatGPT usually proposes concepts connected with time travel and includes something magical in the answer, irrespective of the genre. It can also solve riddles and decipher secret signs, codes, treasure maps or journals.

However, the chatbots cannot be specific, and their answers may be only taken as inspiration and further research and exploration. For example, in the detective story, ChatGPT provided us with some historical clues from the Middle Ages to elaborate the story and boost the creative writing process. The chatbot can also help to decide between two or more plot twists and even explain what will happen if this concrete concept is chosen (Table 1, Story 3). It is important to give the chatbot correct prompts and modify them if the results do not meet expectations.

In addition to the wide range of options in using AI to generate extraordinary ideas, there are threats that can prevent author's creative writing. The more ChatGPT is used by a human author, the less creative it could be for him personally. Chatbot offers similar ideas repeatedly, regardless of the genre. For example, if the story has fantastic components, AI can mindlessly cluster them together, making it difficult to detect strong logical connections (Table 1, Story 4). As a result, the human author may not understand the chatbot's response at the first reading and refuse to interact with ChatGPT. He can also generate another story concept if he/she does not like the one offered. From the perspective of the future reader, the author has to choose carefully among the generated ideas and incorporate into the text only original ones to avoid falling into stereotypes and bore the reader.

ChatGPT can also generate biased or unverified information. At the request to add an alternative world to the children's story, the chatbot produced a description that highly resembled the one in "Alice in a Wonderland" by Lewis Carroll (Figure 3). So, it must

be considered to double-check the results of a generated text so as not to resort to plagiarism.

Plot Summary:

In this new adventure, Whiskers stumbles upon an ancient and ornate mirror in the heart of the enchanted forest. When she gazes into it, she is transported to an alternate dimension known as "Wonderland." Wonderland is a place of endless imagination and wonder, where talking animals wear hats and teapots sing merry tunes.

Whiskers meets a group of quirky characters in Wonderland, including a riddle-loving Cheshire Cat, a tea-loving Hare, and a helpful White Rabbit. With their guidance and her own clever thinking, Whiskers embarks on a quest to find her way back to her world. Along the way, she encounters puzzles, riddles, and magical challenges, all while learning about the power of imagination and the importance of kindness.

Figure 3. ChatGPT generated answer to the children's story, making it look like "Alice in Wonderland" by Lewis Carroll

Generation of plot and characters. After generating the main idea, ChatGPT, upon the appropriate request, conducts the main points of the plot and creates character portraits. It can be outlined only in a general way, but can also be developed in more detail, depending on the author's intentions and willingness to cooperate with a chatbot.

In the romance genre (Table 1, Story 3), the chatbot conducted two plot lines in different historical periods and matched them together, making the holistic concept of a romantic novel that captivates a human reader. It was not something completely new to the literature world, but depending on its realization, the chatbot generated a concept that could be a start for further plot development. It is important not to blindly input the first generated chatbot's answers into work but to ask clarifying questions to make the story more comprehensive. However, character generation takes place in conjunction with the creation of the plot, so it is necessary to ask more about their temper, behavior, relationship, to get a complete image of a hero. In our case, the chatbot described in detail two loving couples, their characters, and the motives for their behavior and linked it to the main idea of the story. This information will be used for further descriptions, dialogues and stylistic device generation.

The same happened during the generation of the young adult novel (Table 1, Story 2). Apart from creating a distinctive concept, the chatbot easily incorporated new characters into the story (protagonist friend Liam and antagonist Dr Malloy). From the first attempt of generation, the character's portrait was not unique, but after asking additional questions, ChatGPT made it more original, adding drama to the plot and revealing the character from a different perspective. For example, after asking more questions about the antagonist's personality, it appeared that he once lost his beloved daughter, looking exactly like the main character, Elara, and this was one of the reasons for his antagonistic role in the novel. This plot twist was generated using

additional questions and could hardly have been created by ChatGPT from simple generation.

We have observed a different process of creating the plot and characters in a detective story (Table 1, Story 5). From the perspective of logic, it is better to develop the action from the end, starting from the murder – the novel's main mystery. It helps to get a comprehensive concept, understand the story's key message, and give chatbot more details that could be used in further answers. For example, we asked the chatbot who truly killed Professor Haynes, then developed the portrait of the antagonist, then generated three potential suspect characters, and only after fully understanding the picture of the murder did we start to ask the chatbot about the portrait of Detective Sarah Michaels. This leads us to the thought that while developing the plot, the human author creates characters, inquires about their psychological portraits, and finds out their motives for acting. The Chatbot interface naturally fits all parts of the story together, making it look complex and logical, which is important in the detective genre.

Sometimes, the plot can be outlined generally, as well as the portraits and roles of the characters. In this case, the writer should use the AI's answers as drafts or ask clarifying questions, for example: "Give me more details about this character", "What personal drama could he relive?", "What will happen if he chooses to act in that way". This approach allows the extraction of new details and makes the plot more intricate and dynamic. This happened during children's story generation (Table 1, Story 1): From the first generation, the main character's portrait was quite blurred and uneven, but after asking more questions about Whiskers, it turned out that the kitten has a magic tail to travel through time and space. Chatbot identified Whisker's character's main positive and negative qualities and even explained why it is important to focus on the positive ones. ChatGPT also suggested incorporating a historical concept into the novel, making each new time period an obstacle to overcome. However, the chatbot didn't put the historical periods in order on our request. Apart from this, ChatGPT made clear the story's main concept – preserving the time balance.

In the case of fantasy novel generation (Table 1, Story 4), a complicated imaginary world picture and too diverse a range of secondary characters made their description by AI stereotypical and not connected to the real world. Describing Element Guardians and their role in the novel, ChatGPT only provided us with such information as "safe balance" and "protect harmony", depending on which element the guardians are responsible for. It appears the imaginary world is not well constructed, which is important in the fantasy genre. We presume that for the best development of the fantasy plot, it is necessary to introduce human ideas into the chat through prompts, as well as carefully analyze each plot twist and character. This is tiring and requires a lot of time, but it is due to the specificity of the genre. This leads us to the following conclusion: if the result does not truly fascinate the writer or he/she is not ready to interact with a chatbot for a long time, it can be an obstacle for the creative writing process using an AI agent. However, a detailed study of chatbot capabilities, as well as a conscious approach to using AI in creative writing and not relying solely on its results, will help improve the novel, find new ways to make the story more fascinating and develop an interesting plot and characters.

Generation of dialogues. The chatbot generates human-like dialogues based on the previous information about the novel. The ability of ChatGPT to generate high-quality dialogues varies from time to time; sometimes, answer regenerating or prompt clarifying may help. We noticed the following pattern while working with the chatbot interface: the more information is provided to ChatGPT about a concrete story, the more creative it could be while writing character lines. If AI is asked to generate dialogue from scratch, the replicas will be stereotypical, the characters will speak like

robots, and readers will not feel an emotional connection with the story. It was also noticed that the Chabot can mix different styles of writing, and it leads to an unexpected result the human author must take into consideration. For example, in a friendly conversation two teenagers are talking as if they were discussing important ethical issues of preserving memories in a university lecture (Table 1, Story 2). Human writers try to avoid such generalization in their novels by adding distinctive details that fully reveal the issue.

In contrast, if the chatbot has enough preliminary information, it could create human-like dialogues not only from the perspective of similarity to human language but also considering the meaning of the lines, adding some notes of humor, skepticism, and even flirting, according to the genre. The more details are generated from the previous steps, the easier it will be for the chatbot to create truthful dialogues that have an emotional and psychological impact on the reader. We also noticed that creativeness in dialogue generation depends on the genre: if the story is more adventurous, the lines will be written in a general way. However, ChatGPT appeared to write quite interesting and human-like dialogues in the detective genre (Figure 4).

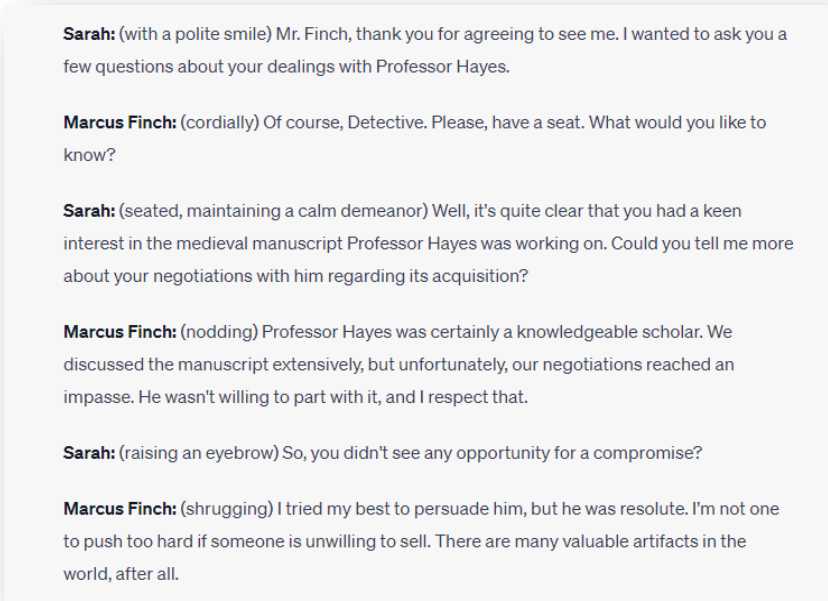


Figure 4. A dialogue generated by ChatGPT that looks like a human-written one in a detective story.

Generation of description and atmosphere. The generated descriptions can be presented in the form of a complex text, as well as divided into semantic parts, depending on what is being described. In both cases, the answer has a well-established structure: beginning, main part and conclusion. Chatbot also includes into the description words from a prompt. For example, if the request contains the words “joy” and “pleasure” the result will be: *The world seemed to radiate with pure joy and boundless pleasure.*

In most cases, ChatGPT generates exceptional descriptions of places that could be used in human-written texts. However, the chatbot uses too many stylistic devices

within one sentence, which makes the output overwhelming. The writer has to choose and carefully implement them into the original text. At the same time, artistically valuable examples could be found: *In the heart of New York City's bustling subway system, passengers fill the car, each with their own stories and destinations; The bookstore ... had an enchanting, old-world charm that was almost like stepping into a time capsule of literary wonders. It was a hidden gem nestled in a quiet corner of a historic neighborhood in New York City.*

The raw output will be uninteresting for readers, so the chatbot's result needs to be edited and refined. The AI-generated description could be used as the canvas for the original text, and the author has to find distinctive details on his own to make the novel's image vivid and memorable. For human readers, it's better to give concrete examples and show action rather than explain what the reader should feel. This phenomenon is known as the "show, not tell" principle and doesn't always fit the way ChatGPT works: the chatbot generalizes huge amounts of information and provides ready-made solutions. For the time being, ChatGPT is not always able to generate authentic details; it's more common for the chatbot to combine data in different ways. However, the system is constantly being improved and updated, so new aspects of this issue require deeper research and study.

It was also noticed that ChatGPT uses the same language passages regardless of the genre. In the children's story, the description of a place was creative enough and fully conveyed the atmosphere of the story, but it was initially rather difficult for childish perception. After prompt correction and result regeneration, we managed to obtain the following authentic description (Figure 5).

Vines with green leaves climbed up the walls, as if they were giving the castle a big, leafy hug. The doors were tall and heavy, like doors to a secret treasure, and they made funny creaking sounds when they opened.

Inside the castle, there was a big courtyard with a cobblestone path. It felt like a special garden full of bright flowers and statues of knights and princesses made out of stone. Each statue was like a hero from a story, frozen in time.

The castle had towers that went really high up in the sky. On top of them, there were flags waving in the wind. When you walked inside, it was a bit dark, but torches on the walls lit up the way. There were colorful pictures hanging on the walls that told stories about brave adventures and knights.

This castle was like a magical place where history whispered secrets, and every corner had a story to tell. It was waiting for new adventures and young explorers to come and discover its hidden wonders.

Figure 5. An example of a ChatGPT-generated description that can be used without significant refinements.

Generation of stylistic devices. ChatGPT is rather creative in producing simple artistic devices that enrich the description or dialogue, making it more coherent and interesting to read. We propose the following best examples of stylistic devices generated by the chatbot in three different genres (Table 2).

Table 2. Examples of the stylistic devices generated by ChatGPT in three different genres.

Genre	Stylistic device	Example
Children	Metaphor	<ul style="list-style-type: none"> • Emily knows when to hold tight and when to let go, allowing Whiskers to navigate the wild seas of curiosity, but never straying too far from the shore. • Whiskers, the adventurous kitten, is a sparkling comet of curiosity, leaving trails of inspiration in her wake.
	Comparison	<ul style="list-style-type: none"> • Whiskers is full of energy, like a bouncy ball, and her laughter is like the happiest song you've ever heard. • Their friendship is like a beautiful painting, full of bright colors and happy moments.
Young adult	Metaphor	<ul style="list-style-type: none"> • It's the painful memories that make the joyful ones shine brighter. • Elara's room is a delightful clutter of memories and questions, where the past and future intertwine in beautiful chaos.
	Comparison	<ul style="list-style-type: none"> • The windows of their vehicle were rolled down, allowing the refreshing sea breeze to cascade inside, like a gentle serenade from the ocean. • Upon arriving at the coast, the sight before them was a breathtaking tableau, resembling a postcard from paradise.
Fantasy	Metaphor	<ul style="list-style-type: none"> • The labyrinth seemed to breathe, its passages expanding and contracting as if toying with their sense of direction. • The walls held secrets that were best left undiscovered.
	Comparison	<ul style="list-style-type: none"> • He could hear their [<i>ghosts</i>] gentle murmurings, like the faintest rustling of leaves in the breeze, encouraging him to trust his instincts. • The oppressive ambiance made it feel as though they were navigating the very depths of their darkest fears.

Despite the powerful capabilities of chatbots for creating impressive artistic devices, there are threats to using them for this purpose, such as their excessive and repetitive application in the original text. Using three to four such expressions in a row make the text difficult for the readers' perception, and they may not perceive this mass of artistic devices adequately. At the same time, frequently used expressions make the story homogeneous and uninteresting, so the writer must pay attention to it don't use them too often.

We collected examples of chatbot-generated answers that appeared in different genres of stories. The chatbot used an artistic image “tapestry of” in children’s and young adult stories concepts: *they paint a tapestry of companionship, where every stroke on the canvas is a moment of joy; They believe that these hidden memories have a unique and crucial role in the overall tapestry of shared memories; Elara’s room is a tapestry of memories and questions.*

It was also noticed that ChatGPT builds stylistic devices on the principle that something is embodied in the form of something else: *Each step they took reverberated with uncertainty; the air was charged with an eerie stillness; air appeared to thicken with foreboding; their voices trembling with unease; a journey fraught with an eerie ambience.* The chatbot uses a similar tactic to create the atmosphere of a place using typical phrases like “it’s creating an atmosphere” or “sets the tone”. Then, it may add words from the prompt like “mysterious”, “uneven”, or “frightening”, depending on the prompt. For example: *The atmosphere of academia and enigma seemed to hang in the air; the air was filled with a sense of togetherness and belonging.*

Like a human author, ChatGPT uses idioms and common language reversals in the generated descriptions and dialogues: *atmosphere that sends shivers down their spines; a place where the characters’ darkest imaginings and deepest anxieties were brought to life; memory modification can be a double-edged sword; guilty as charged; I can’t help but feel that...; there’s more to this case than meets the eye; someone who would go to great lengths to obtain it.*

While generating descriptions, we noticed an interesting detail: ChatGPT uses wooden things description to create an appropriate atmosphere: *a wooden staircase that creaks beneath her feet; the floors, made of creaky wooden planks, bore the weight of countless visitors over the years.* These two examples are taken from two different genres of story (Table 1, Story 5 and 3), but they seem to come from the same text and can even be placed in the same paragraph. It doesn’t matter whether ChatGPT is describing a professor’s study, an old bookshop or a room of a teenage girl, the result will look similar.

Human writers also use similar expressions and make different kinds of mistakes in their texts. However, it is essential to develop a literary taste, to be able to distinguish between a high-quality stylistic device that will beautify a piece of writing and artistic incompetence and even graphomania. This leads us to the necessity of a conscious approach and critical thinking development while using AI agents for creative writing. A mindful AI usage will help find inspiration in its answers, save time, and create valuable artwork that will be appreciated by human readers.

Discussion

The results of our research show that ChatGPT, as well as other AI-powered tools for text generation and transformation, can be quite useful in idea proposing, different parts of the story development and stylistic device refinement. In human-machine collaboration, it’s the human who empowers the chatbot, adding unique concepts and working on an idea with a machine in a loop. We agree with the point that using chatbots will drive human creative writing in another direction (Clark et al., 2018). However, we also consider that language models can boost the story concept creation if the peculiarities of the system are considered while working (Ippolito et al., 2022). This is confirmed by the results of our research, where the principles of generalization and clarifying questions were taken into account when creating story concepts.

Ultimately, it’s a human choice whether to use AI agents in creative writing and to what extent the output will be presented in the original work. Our research shows that some threats considering the usage of AI exist, but at the same time, there is a broad range of possibilities, including combining plot lines, distinctive character

development and high-quality artistic device conditioning. In an age when originality is hard to come by, utilizing AI instruments for writing inspiration seems promising. However, taking and processing the AI-generated results is all a human choice and responsibility.

This leads us to the question of how roles are assigned in the joint work of machines and humans. According to Lee et al. (2022), the more writers got suggestions from GPT-3, the less they wrote and the less they felt ownership over the final texts. At the same time, other research shows that users didn't experience the feeling of looseness of the authorship while working with an AI agent (Singh et al., 2023). This correlates with Yang et al. (2022), where users estimated AI to be an active writer in the collaborative process rather than simply a passive AI writing assistant. Collaborative writing contributes to students' learning outcomes and prepares them for teamwork (Fiitalka et al., 2021). Given the scientists' opinions and our study's results, we believe that the role of AI depends on the type of text generation system (for example, Wordcraft & ChatGPT) and the expectations of the human author regarding interaction.

Interaction with a chatbot can also be viewed from the perspective of improving writing skills and enhancing writers' mastery (Calderwood et al., 2020). ChatGPT can be a useful tool for beginning authors to learn the main writing principles and avoid making common mistakes. The ability of the chatbot to generate large amounts of text encourages the author to look for original solutions and distinctive details to include in the story. We also found that ChatGPT goodly emulates human writing manner, but not always from the perspective of sense.

For editors there is a need to identify whether the text was created by AI or by human, so-called Turing Test. Several recently proposed neural network-based language models have demonstrated their astonishing capabilities to generate texts that are challenging to distinguish from human-written texts with the naked eye (Uchendu et al., 2020). Christer Clerwall (2014) revealed that algorithm-generated content is not necessarily distinguishable from content written by journalists. To develop the ability to distinguish between human-written and AI-generated texts, the editor should interact more with a chatbot interface and discover its way of generating responses.

Absurdity from AI might be viewed as a failure from the perspective of a data scientist and a success from the point of view of a literary artist (Adema, 2017). It is not the artistic quality of the generated text that impresses people but the extent to which the result resembles human writing. This matches with the two approaches of AI results perception: "human-centered" and "rationalist" (Miroshnichenko, 2018). AI outperforms people in some analytical tasks such as situation prediction (He et al., 2015), as well as text summarization (Veselovsky et al., 2023), but, as our research results show, there are some boundaries to AI outperforming people in tasks that contain a creative component. This means that in the nearest future people of creative professions will find under low or no risk of automation (Bakhshi et al., 2015). Regarding writing novels, human-written equivalents could be found for all five generated stories in our research. This fact leads us to the necessity of improving human writing and paying more attention to finding new ideas and their development rather than scoping on the writing issues (Yang et al., 2022).

AI-based technologies, including ChatGPT, are constantly evolving and updating. We strongly believe that such improvements will only empower humans with a more accomplished instrument to expand the boundaries of creativity. AI can bring a novel creative experience to users with no or little creative experience, inspire the discovery of little-known topics and broaden the horizons of vision.

Conclusion

AI technologies significantly impact the world of literature and creative writing in particular. ChatGPT became a powerful tool in the hands of writers, allowing them to

find uncommon ideas within the chatbot, conduct drafts for future plots and characters, and improve the stylistic language of the story. At the same time, in case of inappropriate use, stereotypical content and biased information production may lead to copyright violations.

The results of our study show that a coherent story concept can be created within one chatbot, moving smoothly from general to specific. ChatGPT's ability to produce a huge amount of coherent text will allow the writer to focus mainly on developing a unique and original idea, not spending time on monotonous work. If the AI agent's peculiarities are considered, the process of AI-assisted writing will be successful and pleasant for the human author.

We understand that chatbot cannot completely replace the writer because unique cognitive processes take place in the writer's head, which cannot be reproduced by AI technologies. Apart from this, creative writing, from poetry to journalism, is at the crux of human ingenuity and social interaction. It conveys not only information but also experience and emotion. So far, AI has not been learned to generate truly emotional text as humans perceive it due to context variations and database limitations. However, as the technology evolves, we expect existing features to improve and new opportunities to emerge.

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Words: 7532

Characters: 49 421 (27,5 standard pages)

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