Literature in the Age of Artificial Intelligence
A Preliminary Study on the Big Language Model AI

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Abstract. This thesis explores the impact of large language model AI, such as GPT-4, on literary creation, examining the potential for new genres and styles while addressing concerns about authorship, originality, and bias. As AI-generated literature gains prominence, questions surrounding copyright and intellectual property emerge, necessitating reevaluation of traditional concepts of authorship. Despite potential challenges, AI-generated content may foster a more diverse and inclusive literary world, bridging cultural and linguistic barriers and encouraging greater participation in creative endeavors. This study calls for a prudent and critical examination of the opportunities and challenges AI presents in the literary domain.

Keywords: Creative Destruction · Creative Industry · Copyright · Creative Diversity · Large Language Models

1 Introduction

The rapid development of artificial intelligence (AI) and machine learning technologies has had a profound impact on all aspects of human life. Scholars [17, 18] pointed out that AI will have a profound impact on the fields of creative production and language expression through continuous iteration. In the past six months, the big language model AI has made a breakthrough in the field of natural language processing, changing the way people interact with text content [3]. GPT-4, BERT and other cutting-edge large language model AIs in the world can already simulate the complex language patterns and literary creation characteristics unique to humans. After training by users, they can also output specific content according to requirements. With the rapid development of this type of AI, it is time to re-explore and re-examine their impact on literary creation and related industries that output text content as the main mode of production. It is foreseeable that as the speed of technological iteration continues to accelerate, more and more literary creations and occupations that rely on words will be affected to a certain extent. Especially in the current era, the general technological blockade cannot lock the motivation of text content creation. Under this general trend in the world, any variable that disturbs the form and method of writing will drive changes in global literature and literature-related fields.

The large language model is a model that continuously generates new text data by processing existing text data around the world and further using deep learning technology to "understand" it [4]. In the continuous cycle of "production" and "understanding", they simulate the linguistic characteristics and narrative logic of existing human text materials, so as to finally output some texts that conform to human expression habits and appear to be "correct". Scholars and engineers led by Radford [15] pointed out that the development of large language models is mainly limited by the different understandings of the "language generation" process of its deep learning mechanism, resulting in differences. Take the recently popular ChatGPT as an example. The GPT (Generative Pre-trained Transformer) model it uses is called a generative pre-training model. Its pattern of generating content can be understood as following a pattern of word cycles. It will judge the content that the next word may need to generate based on the previous word of each vocabulary. Before generating it, it will use the vocabulary that appears in the above context to match the text generated below according to the probability. If the above, the user requires it to determine in the subsequent process of generating new vocabulary that it must display idioms related to the phenomenon of life satisfaction. Then, it will actively filter out the options that do not meet the requirements, so as to generate the content that people "need" it to generate. Using the example above as an analogy, it would show words like "live and work". The way Google's BERT model generates text is more similar to cloze. It will judge the missing phrases or vocabulary according to the length of the sentence in the context, so as to fill in the blanks. As these models increasingly mimic the style and vocabulary of human writing, they have the potential to revolutionize every aspect of creative writing in the future. The continuous development of large language models has led to thinking about the future of literary creation, the role of humans in literary creation, and the possible emergence of new genres and styles.

2   "Creative Destruction" and Big Language Model AI

"Creative destruction" refers to the process in which economic growth and technological innovation promote industrial transformation, often leading to the elimination of old industries and the emergence of new industries [1, 16]. Some scholars believe that "creative destruction" is an important force behind economic and social development. Innovation is a major driver of business cycles [7]. Scholar Bessen [2] further analyzed the role of "creative destruction" in the context of technological innovation, focusing on the impact of artificial intelligence on work. He believes that understanding the "creative destruction" process is critical to understanding how AI technologies will shape the future of content creation. He also highlights what policymakers and scholars should pay attention to that may change the popular culture and educational models in the age of artificial intelligence. He further suggested that adapting to the mass culture and educational models of the new era may be the potential driving force for the whole society to keep up with the times. Vargo and Hopp [19] extend the notion of "creative destruction" in the context of service-dominant logic, emphasizing both positive and negative implications in an evolving economic landscape for understanding value. This phenomenon may imply that with the continuous advancement of AI, industries related

to literature and content creation may first enter the stage of being "destroyed" by AI. At the same time, these industries will also be the first to adapt to the impact of new technologies, so as to take the lead in the next stage of development.

The impact of AI on the creative industries has been a topic of increasing interest as AI technologies become more advanced and integrated into every aspect of the creative process. Flew and Cunningham [8] discussed the impact of artificial intelligence on the creative industry. They believe that the "creative destruction" of artificial intelligence will bring many challenges and opportunities to society. Hesmondhalgh [10] further discussed the interrelationship between technological development and the development trend of cultural industries in a broad sense. He mainly focuses on the way innovation promotes the transformation of the cultural industry, and proposes that the "creative destruction" driven by new technologies will shape a new culture on the basis of promoting the improvement of industrial efficiency. Mateos-Garcia, Windsor and Chataway [13] conducted a comparative study of multiple cases on the impact of artificial intelligence on work. They found that in industries related to text creation and application, artificial intelligence that can generate content will greatly improve the efficiency of related non-creative work. They suggested that those formulaic and modular language jobs may be replaced first after the progress of AI technology. However, they further pointed out that it is difficult for AI to imitate human creative ability. No matter what AI is, it is currently difficult to simulate the process of human literary creation and creative creation through code and complex models. Based on the theory of creative destruction, they propose that people should embrace the technological revolution, embrace and adapt to changes, and participate in shaping a new ecology.

In the field of literary creation, Moretti [14] explored data induction to perform computational analysis on the linguistic structure and development trend of literary works, and summarized a set of relatively elementary data analysis methods for analyzing literary content and trends. Her research demonstrates the potential of artificial intelligence technology driven by data computing to imitate human beings in literary analysis and simple creation. Scholars [5] have discussed the potential of AI-driven language models (such as GPT-3) on the basis of their predecessors. They point out that AI with large language models can help people with various tasks in the creative industries through its autoregressive algorithms, especially in two aspects of writing and generating content.

Artificial intelligence technology has the potential to bring huge changes to industries related to the production of text content through the process of "creative destruction". The driving force of this change, judging from the functions of the current big language model AI, is temporarily limited to helping humans deal with simple text sorting, summarizing and helping to write text content that fits within the scope of its model's formulaic thinking. However, this type of AI iteration speed is getting faster and faster. When the author started this research half a year ago, the GPT model had just released the third generation of GPT-3. Perhaps, big language model AI will reshape the entire creative industry at a faster speed. For example, the integration of artificial intelligence technology into literary creation may bring new forms of literary expression, novel narrative techniques and more efficient content production processes. At the same time, AI-driven "creative destruction" could lead to job losses, changes to traditional creative roles, and

a shift in the balance of power within the creative industries. These opportunities and challenges may suddenly come true someday in the future.

3 "Creative Destruction" and Literary Creation from a Historical Perspective and Its Impact

Technology plays a central role in "creative destruction" as a catalyst and enabler of change. Advances in technology often lead to the development of new business models or the reconfiguration of existing business models, leading to shifts in industry structure and competitive dynamics [9]. For example, the rise of digital technology transformed the music industry through the advent of online streaming services, leading to the decline of traditional record stores and physical sales of music [12]. Furthermore, technology can disrupt existing market dynamics by lowering barriers to entry and facilitating the rise of new competitors. The development of the Internet and digital information technology has spawned many new business models and industries, such as e-commerce and digital marketing, which have disrupted the traditional retail and advertising industries [6].

Looking back at human history, technological progress has brought about significant changes in the way literature is produced, distributed and consumed. Take the Gutenberg printing press in the 15th century as an example. The popularization of printing technology has completely changed the production and dissemination of books and cultural works in the Middle Ages, making reading a choice for the public. Behind this is the progress of printing technology that has brought "creative destruction" to the entire European society. With the traditional printing, the mode of communication has changed, which has led to the creation of creators' creative genres and creative content. This change, in turn, affects the way and efficiency with which knowledge is disseminated throughout the world. Likewise, the advent of digital technology has led to new forms of literary creation and consumption. For example, in the Internet age, more and more people can read and buy books through the Internet. There are also some books that are listened to by the public through the form of audio books. These are all phenomena of "creative destruction" brought about by digital technology. It can be seen that technology-driven "creative destruction" has the potential to reshape the literary landscape, lead the innovation of text production methods and promote the emergence of new literary forms and genres. This phenomenon has occurred for the first time in human history.

The rise of large language models such as artificial intelligence and ChatGPT has brought new opportunities and challenges to the field of literary creation. AI-driven language models could disrupt traditional literary practices by automating some aspects of the creative process, from content production and assisting in editing, proofreading and others. In short, it does not have a stable "evaluation standard". It can change its own output mode arbitrarily as the user's requests.

Imagine a situation where the use of AI in the work of screenwriters and event planners could lead to new forms of storytelling and narrative structures. Different from the traditional production method of inviting authors to write related content, the creation of AI has no personal likes and dislikes at all. Taking GPT-4 as an example, large language model AI also lacks general moral constraints at this stage. The content they generate may

be able to "literally" more closely match the audience's requirements. In other words, more "tailor-made". And the literary content of these creations may contain elements that are difficult for human writers to generate. When human creators create literature and content, they are always influenced by the background of their own era and the general aesthetic and philosophical views of society. However, for large language model AI, their core models are trained by text data that humans have been able to find for thousands of years. For them, the background of the times and the unique aesthetics and philosophy of the times do not constitute the meaning of "thinking" for them. For them, the epistemology and ontology of people in any era only have some differences in data, and it does not affect their usual style of content creation.

As AI-generated literature gains prominence, so do questions surrounding authorship and intellectual property. How the copyright of the works created by artificial intelligence is owned, and even whether the text it creates has copyright still needs to wait for further discussions in the legal and literary circles. It stems from the fact that the line between human and machine-generated content cannot be drawn by intuitive means. Suppose, if one creates an outline for a science fiction novel. Ask the AI to help him fill in the details. Should the finally created science fiction be regarded as the original "literary works" with "originality" and endowed with corresponding legal and dissemination powers? It is conceivable that more and more debates about cultural works created by artificial intelligence will focus on the basis of whether they are considered original works or derivative works. Going a step further, perhaps the debate will eventually turn to the debate over the degree of AI participation in works as a quantitative indicator for the definition of laws and regulations.

The involvement of AI in the creative process has implications for copyright law and intellectual property protection. Currently, copyright law does not grant legal rights to AI-generated works because they are not considered original works of human authors [11]. This could limit the ability of creators to protect their AI-generated works from unauthorized use or copying, posing challenges to aspects such as the publication, dissemination, and intellectual property operations of literary works. Just imagine, as more and more employees in the creative industry begin to use AI to help them complete their daily work, can't the work results completed by them not be regarded as a work that should have copyright attributes because they partially use AI? I am afraid that this will cause the legislatures and legal practitioners of various countries to have similar debates similar to the "Mezer v. Stein case" in the United States. People will redefine the copyrightability of a work.

On the other hand, the use of AI in literary creation may help human authors and AI trained by it form a unique creative system. At present, the large language model AI, taking Chat GPT as an example, has successively opened up the API port of the network. Anyone can directly call the AI data model to serve themselves. The creator can digitize his previously written corpus and upload it to a database. Next, let AI imitate him and generate unique literary content for him that suits his creative characteristics. This phenomenon may come sooner than we expected. The development of this phenomenon in the future may have an impact on the theory of the traditional concept of authorship in the future. This impact may extend to other areas of content production, such as curation and publishing.

Big language model AI may also drive more people to join the ranks of creators. Because it can imitate the characteristics of various styles, genres and languages, it may enable some people who have a lot of ideas for literary creation, but who cannot access good literary education due to objective conditions, can rely on AI to create. Its popularity has objectively lowered the threshold for creation. With the development of technology, perhaps in the future, large language model AI such as GPT can directly convert language and text. This advancement will bring a creative path to those with physical disabilities. In addition, due to the significant differences between different languages, often an excellent author can only write proficiently in his native language. With the popularization of AI technology, perhaps creators can also create literary works in other languages. AI-generated literature can bridge the barriers of cultural backgrounds by generating various languages, thereby promoting cooperation and exchanges of cultures and disciplines around the world.

4   Conclusion

As AI-generated literature technology continues to develop, it is likely that new genres and styles will emerge in the field of literature. This style has a high probability of broadening the boundaries of literary creation in a situation that human authors did not expect. The "creative destruction" brought about by this development will gradually spread to the entire creative industry as the public's understanding and application of AI become more in-depth. The birth and dissemination of new themes and styles will most likely meet the mass culture, social ideology and the needs of the public for content at that time. We should more prudently and critically examine the opportunities and challenges brought by large language model AI such as GPT-4 in literary creation.

The application of large language models like GPT-4 to literary writing has the potential to revolutionize the creative process, introducing new genres, styles, and forms of expression. However, it also raises important questions about authorship, originality, and possible bias and homogenization in AI-generated content. By carefully considering these questions, we can harness the power of AI to augment human creativity, foster diversity and innovation, and create a more inclusive and vibrant literary landscape.

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