

An Analysis of the Impact of AI from the News Practitioners' Perspective: Opportunities and Challenges

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Abstract: The release of ChatGPT (Chat Generative Pre-trained Transformer) has led to a new wave of applications of artificial intelligence in journalism. As the research on the functions of ChatGPT continues to be completed, many media companies and organizations have begun to use ChatGPT in their work. There are more studies discussing the impact of AI from the perspective of journalism as a whole, but fewer studies discussing the issue from the perspective of individual journalists. This essay on the impact of AI from a journalism practitioner's perspective: opportunities and challenges aims to visualize the specific impact of AI involvement on the work of journalism practitioners from a relatively microscopic perspective. The involvement of AI in the whole process of news production blurs the boundaries between different positions within the news industry, and news practitioners must become all-rounders in order not to be eliminated by the wave and work with AI. In response to the ethical problems of journalism caused by artificial intelligence due to its lack of fact-checking ability, news practitioners need to strengthen their information verification abilities to try to circumvent them.

Keywords: AI, journalists, ChatGPT, personalized delivery

1. Introduction

On November 30, 2022, Chat GPT, an AI-generating chatbot from Open AI Labs, which was invested in and founded by Musk and others, was launched. It is a system that uses machine learning for training and thus human-machine interaction. As the latest achievement of the generalized large model of artificial intelligence, Chat GPT has a huge database, amazing arithmetic power, and is able to automatically generate multiple types of text content, which attracted widespread attention worldwide upon its launch. As one of the fields that has made deep integration with AI technology, the journalism industry has had a wide-ranging discussion about AI technology, including Chat GPT [1]. Artificial intelligence has been used directly in journalism for a decade. The Associated Press was one of the first news outlets to utilize AI and automation to support its core journalism. In 2014, the Associated Press began using AI programs to process stories about corporate earnings, giving journalism a new look [2]. The quest to apply AI directly to journalism never stops, and academics have conducted extensive research on the impact of AI technology in the news industry. AI has the potential to revolutionize the way we live and work, with the ability to automate tasks and processes, improve decision-making, and enhance the overall user experience [3]. Mathias-Felipe de-Lima-Santos and Wilson Ceron use the case study method to conclude that AI can take different forms in

the news industry and their findings reveal three major subfields that are more present in the news ecosystem: machine learning, computer vision, and planning, scheduling, and optimization [4]. Mark Hansen analyzes the use of AI in the newsroom, the technological changes brought about by AI, and the algorithmic and ethical issues that demand a response from journalists [5]. Although academics have covered a wide range of studies on the impact of AI on journalism, this paper will delve into the topic from the perspective of journalists. In the context of the rapid development of AI, as an important intermediary of information transmission, journalists are facing the important topic of how to cope with the challenges and opportunities of AI technology, and from the perspective of journalists, it can intuitively reveal the actual impact of AI on their daily work. The innovation of this paper lies in its unique structural design, which analyzes two different types of AI from two different perspectives. The findings of this paper provide guiding methodological suggestions on how news practitioners should better synergize their production relationships with AI to promote the better development of the entire news industry.

2. Background on Artificial Intelligence

Artificial intelligence (AI) is a branch of computer science that aims to create intelligent machines that can perform tasks that normally require human intelligence [4]. AI systems can learn from experience and improve performance over time without being explicitly programmed [5].

According to the stage of development of AI technology and the depth of its involvement in news production, AI technology in journalism can be categorized into three phases: assisted enhancement, initial automation and automated content generation [6]. AI has the potential to change how news is curated and spread, making it more efficient and increasing its reach. However, it also raises important concerns about bias, inaccuracies, and the role of human editors being taken over [7]. AI has barely touched investigative journalism, let alone transformed it. This failure could be an issue of technology diffusion or inadequate investment. Or perhaps the problem is simply difficult. There are a number of domain-specific issues that make it challenging to apply AI techniques to investigative journalism [8]. The incorporation of AI into the newsroom has led to a significant breakthrough in the ability of reporters to act as amateur data scientists. AI can augment the human reporter in several ways: helping to classify and categorize documents, identifying outliers in data worthy of closer examination, or finding needles in the haystacks of data [9]. From the perspective of communication, ChatGPT has brought about several problems. The powerful ability of ChatGPT to generate text based on given prompts and its self-organizing and adaptive language-logic learning ability may lead to an increase in the dissemination of false information [10]. It is widely acknowledged that the vast majority of ChatGPT training data comes from English-speaking countries with corresponding Western values, which may exacerbate its inherent biases and prejudices, leading to the further dissemination of Western values worldwide. Although biased and discriminatory data have been screened out, the remaining bias in the data is difficult to detect and can subtly influence public perception.

3. Challenges and Opportunities Presented by Assistive AI

News production is the entire process of taking news from gathering to editing, typesetting, and publishing, involving multiple players and steps. The entire process is designed to provide accurate, objective, and timely news information to meet the information needs of the public. Auxiliary artificial intelligence mainly refers to a class of artificial intelligence that participates in the process of news production and distribution as an auxiliary tool so as to improve the production efficiency of specific links. Examples include translation software, content editing and layout tools, real-time news pushes, and big data personalized recommendations.

3.1. Advantages in the Process of Data Collection and Analysis

AI's breadth of data collection empowers news practitioners with greater access to information. By collecting data from different types of data sources, such as social media, news websites, academic papers, etc., they can access information from different fields, which helps to reduce the one-sidedness of information, prepare more comprehensive and diverse news reports, and enhance the breadth of reporting. Artificial intelligence's ability to analyze data is conducive to improving the depth of news coverage. Efficient algorithms and big data processing facilitate news practitioners to mine a large amount of data and find out the stories hidden behind it. Artificial intelligence can discover potential trends and patterns from massive data. By analyzing big data, news practitioners can better understand public interest, social trends, and topic evolution. This helps them more accurately predict possible future events and create targeted reports that enhance the foresight and impact of news.

3.2. Advantages in News Distribution

Personalized delivery:

By analyzing a user's reading history, interests and behaviors, AI is able to customize personalized news content recommendations for each reader, reducing the workload of manual screening and distribution, and eliminating the need for news practitioners to manually select target audiences and content, thus saving them a great deal of time and effort and enabling them to interact with their audiences more effectively. Personalized push enhances the user experience of news platforms, and readers feel that the news content is more closely aligned with their interests and needs, thus increasing their satisfaction. This helps to increase reader interaction, including comments, sharing and feedback, and gives news practitioners a better understanding of readers' reactions and expectations, prompting them to continuously improve the quality of their news.

Time and frequency optimization:

Artificial intelligence can help news media optimize the timing and frequency of news pushes based on users' online time and reading habits. By analyzing a user's historical behavior, such as the time of day they often visit a news site or click on a news notification, AI can choose to push news to users when they are most likely to be online, thus increasing the chances of news content being noticed. This personalized schedule ensures that news organizations are maximizing their resources and avoiding publishing news outside of the times when users are online to reduce waste. By using AI for time and frequency optimization, news practitioners can better manage the smoothness of content distribution. Avoid over-delivering news in short bursts that may fatigue or upset users while ensuring that necessary coverage is available at critical moments. This balance helps maintain a good relationship between news organizations and their audiences and increases user loyalty.

User feedback mechanisms:

Artificial intelligence can provide real-time feedback based on data, helping journalists to understand readers' emotional inclinations towards the latest stories faster and thus make better decisions on the direction of coverage. At the same time, the user feedback mechanism molds news into a commodity and users into consumers, and the news market is molded into a competitive environment in which high-quality news content is highly popular among users and therefore gains greater exposure in the market. Conversely, poor-quality news content receives negative feedback from users, and thus AI technologies can help reduce their exposure. This phenomenon reflects the supply and demand relationship in the market mechanism: users demand high-quality information, while the market is more willing to promote and support content with high exposure. This competition and feedback mechanism lead to the fact that the more popular news content will get more listing opportunities, so the market share of quality news gradually increases. The user feedback mechanism

actually unknowingly screens news content for the best and the worst, which helps to encourage news practitioners to create high-quality news content.

3.3. Disadvantages of Personalized Delivery

Personalized news delivery requires the collection and analysis of users' personal data, including browsing history, interests, geographic location, and so on. If these data are inappropriately processed, stored, or shared, users' privacy may be violated, resulting in the leakage of personal information. Although there are certain laws and regulations to protect users' privacy leakage, AI cannot objectively serve as the subject of legal application, so news practitioners are irreplaceably responsible for these consequences. Personalized news delivery may cause users to increasingly see only content that matches their own views and interests, thus exacerbating the information bubble effect and limiting access to diverse perspectives and a wide range of information. This phenomenon may further impact journalistic diversity by reducing journalists' creative drive to explore diversity and different areas of coverage.

4. Challenges and Opportunities Presented by Generative AI

Generative Artificial Intelligence is a machine learning system, a technical system that creates text, audio, image, video, and code based on algorithms, models, etc., with representative applications such as ChatGPT, GPT-4, and other intelligent programs released since the end of 2022. It is like a neural network system for data learning and has been widely used in various fields for half a decade. Generative AI does not exist in isolation from assistive AI; on the contrary, as a new stage of development based on assistive AI, generative AI and assistive AI have many overlapping functions and features. To avoid redundancy, this section will focus on the impact of the unique features of generative AI.

4.1. Realizing Fully Automated News Production

Generative AI can be utilized in every aspect of interviewing, writing, editing, and distributing news. Kevin Roose, a technology columnist for The New York Times, wrote in March that he had asked ChatGPT to come up with his own interview questions. He pasted his interviewee's bio into ChatGPT and asked it to ask the guest 10 thoughtful, perceptive interview questions. Most of the questions generated by ChatGPT were so good that Roose used them on his show! The majority of the questions generated by ChatGPT were very good and were used by Roose on the show [11]. In terms of text, generative AI's content generation capabilities are very powerful and can generate both paragraphs and articles, as well as creative content such as planning outlines, advertising slogans, etc. It can also tautologically rewrite established text into other specified genres and logically concatenate given words into statements..... And it's not just text that can generate images, audio, video, and other forms of content. ChatGPT is also very good at distilling and summarizing, such as when a major and complex news story breaks and a summary needs to be quickly distilled from a lengthy document (a court ruling, an earnings report, or a politician's financial statement). When Trump was indicted, Inside Edition Editor-in-Chief Carlson put purchased long-form documents into ChatGPT and had it give a 300-word summary, thus aiding Inside Edition in making decisions about how to cover the story quickly [12]. Generative AI not only increases the speed of reporting but also gives journalists more time and flexibility to respond to breaking news.

4.2. Lack of Information Verification Capabilities

ChatGPT does not have actual fact-checking capabilities. It is a generative AI model trained on large-scale text data that generates responses based on patterns and information in its training data. In journalism, fact-checking usually requires professional news practitioners to confirm the authenticity of information by verifying multiple sources, evidence, and data. ChatGPT can be used to assist in fact-checking, e.g., by providing potential sources of information, and retrieving data, but the final judgment and verification need to be done by experienced news practitioners to ensure the accuracy and credibility of the news story. Generative AI has become a far-reaching technology without its ability to learn, however, it is also this ability to learn that makes it highly likely to be misled by misleading information and false facts. For example, if it receives intentionally or unintentionally false information during an interaction with a user, ChatGPT is highly likely to include this in its subsequent answers. The lack of true logic and judgment is always a shortcoming of AI, and this limitation is most evident in investigative journalism. Often, the process of acquiring data for investigative journalism is not rigid but full of variations. “Open data” refers to data that is required by law to be available to citizens but is not necessarily publicly accessible. Often, these data are requested, negotiated, crawled, or purchased. Moreover, investigative journalism relies heavily on background and contextual information, and the lack of AI’s ability to resolve ambiguities will inevitably lead to a decline in accuracy, which is very demanding for investigative journalism. So until now, the use of AI in the field of investigative journalism has been very scarce.

5. Adaptation and Response by Journalists

Generative AI changes the working mechanisms of news practitioners. From data collection to news distribution, generative AI runs through the entire work process. Automated collection and screening of data changes the way news practitioners acquire data, and intelligent algorithms can discover trends and patterns hidden in massive amounts of information, providing news practitioners with more opportunities for in-depth analysis and insights. Personalized news distribution changes the notion of transmitter-centricity and challenges the notion of the subjective identity of news producers. Automated multimedia transformation allows the barriers between journalists responsible for different areas to be broken down; the traditional organizational structure of copywriting teams, video teams, and other job distinctions may no longer be applicable, and journalists will need to have the ability to grasp the entire production process.

For the changes in news production brought about by AI, news practitioners need to improve their personal media literacy. First, with generative AI weakening the boundaries between positions within journalism, news practitioners need to have the ability to familiarize themselves with every aspect of news production and master the entire process. Second, in response to the multimodal transformation of news driven by generative AI, the ability to create multiple media forms such as text, images, audio, and video is a must. They also need to have the ability to verify information, effectively obtain information from multiple channels, and recognize the accuracy and credibility of information in order to avoid the dissemination of false information. It is equally important to familiarize themselves with journalistic codes of ethics and legal requirements to maintain ethical and legal compliance in reporting.

The changes brought about by AI are not only functional but also conceptual. In the past, AI was used more as a tool, so in the relationship between humans and AI, AI was at a disadvantage. But now, as the function of AI continues to become more powerful, it does liberate the productivity of the news industry to a large extent, freeing news practitioners from relatively tedious repetitive labor to devote themselves to creative labor. Therefore, news practitioners have a dependence on and need for artificial intelligence, and the production process of news is jointly accomplished by the two, and

the relationship between human beings and artificial intelligence is gradually becoming equal. Journalists need to face up to and accept the adjustment of this relationship, and the relationship between human beings and artificial intelligence should be a partnership, not a mere utilization relationship. AI for journalism is a great tool, offering many benefits. However, it is also true that AI in journalism has yet to realize its true potential. Artificial intelligence and the future of journalism go hand-in-hand [7]. How to better utilize the potential of AI and integrate the technological revolution into the wave of social development requires constant efforts from journalists.

6. Conclusion

Artificial intelligence provides a lot of help in the workflow of news production such as big data analysis and processing, personalized push, content generation, and multi-media conversion of news, which effectively improves the efficiency of journalists and facilitates the development of the news industry. But at the same time, there are some fundamental limitations of artificial intelligence, making it difficult to participate in many specific types of news reporting, such as investigative news reporting. The involvement of AI in the process of news production also brings some ethical issues, and challenges to the professional ability and professional philosophy of journalists. Although the current paper provides a guiding methodological suggestion on how news practitioners can better synergize their production relationship with AI so as to promote the better development of the whole news industry, there is still the problem of a single research methodology and a lack of data support. These limitations will be remedied in future research to explore the research question from a more multidimensional perspective based on more complete data and theory.

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