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APPLICATION OF ARTIFICIAL INTELLIGENCE IN SPORTS NEWS DISSEMINATION OF PARIS OLYMPIC GAMES

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Abstract: Since the Paris Olympics were the first to publish the "Olympic AI Agenda," artificial intelligence has been integrated into the entire news dissemination process. This thesis combines descriptive analysis, case study, and inductive methods to explore the specific applications and practices of artificial intelligence technology in sports news dissemination during the Paris Olympics. The study finds that AI technology plays a significant role in various aspects, including news gathering, news production, news release, personalized push notifications, audience interaction, and data feedback. By leveraging AI-driven technologies such as slow-motion replay camera systems, OBSCloud broadcasting, AI news generation, AI news broadcasting and distribution, and AI personalized recommendations, the news production process has been significantly

optimized, the efficiency of news dissemination has been enhanced, the modes of sports news dissemination have been enriched, and audience interaction has been improved. However, this research also discusses the obstacles associated with the use of AI technology, such as the decline of journalistic skills, questions about the authenticity and impartiality of AI-generated content, and concerns about user privacy protection. The study indicates that, while AI technology holds enormous promise in sports news dissemination, it is crucial to address the ethical and security challenges associated with its use to ensure the long-term growth of AI technology in future sports news dissemination.

Keywords: AI, Sports, News dissemination, Paris Olympics

INTRODUCTION

In the context of digital media technology, artificial intelligence (AI) has been fully integrated into news dissemination. From automated news generation to AI news broadcasting, AI data analysis and trend prediction, AI fact-checking, and AI personalized news recommendation and distribution (Simon, F., 2024), the emergence of AI in news dissemination demonstrates a clear trend of digital transformation, reshaping the ways news is gathered, reported, and consumed (Tessemet al., 2024).

Artificial intelligence (AI) has also been widely applied in the field of sports news dissemination. Especially at the 2024 Paris Olympics, it has become a "spectacle of AI technology elements" (Yang et al., 2024). As the first Olympics to launch an "Olympic AI Agenda" (IOC, 2024), AI technology not only enhanced the level of event management and optimized the viewing experience at the Paris Olympics but also integrated into all aspects of news dissemination, setting an excellent example for the application of AI technology in sports journalism.

This article examines the distinctive applications and practices of AI technology in sports news dissemination during the 2024 Paris Olympics. First, it examines the relevant literature on AI in journalism and sports news research to give a theoretical foundation for this study. Next, it creates a process flow diagram for AI-driven sports news distribution during the 2024 Paris Olympic Games, combining existing conventional sports news dissemination procedures with AI applications in use for the 2024 Paris Olympics. It then elaborates on the creative practices of AI technology in various phases of news transmission during the Paris Olympics, providing practical backing for this study. Finally, the research anticipates future trends in artificial intelligence and sports news transmission and discusses potential problems.

The scientific value of the article lies in the fact that, for the first time, the entire news cycle at the Olympics, utilizing AI, is systematically analyzed, and data from interdisciplinary research (journalism, AI, social philosophy) is summarized. The study's results will enable sports journalists, AI developers, and media companies to integrate AI more effectively into the news process while maintaining quality, credibility, and ethical responsibility.

RESEARCH OBJECTIVE

2.1 Research challenge

The modern Olympic Games are becoming not only a sporting but also a technological event, where artificial intelligence (AI) plays a key role in competition management and news coverage. However, despite the active adoption of AI in journalism, there is a lack of systematic analyses of its impact on the

dissemination of sports news. Questions arise: How is AI transforming journalistic processes? What opportunities and risks does its use bring? To what extent does it affect the quality and objectivity of information?

2.2 Research objective

To investigate specific practices of AI application in the news dissemination of the Paris 2024 Olympic Games, to identify the benefits, limitations and ethical challenges of AI journalism, and to determine the prospects for its development in sports journalism.

LITERATURE REVIEW

Research on AI in journalism has been actively developing since 2015, and since 2019 there has been a sharp increase in publications in this field. An analysis of 108 papers in the Web of Science database shows that AI journalism is an interdisciplinary field that includes communication sciences, computer science, linguistics, sociology and economics.

3.1 Key research areas

Firstly, news automation. AI is used to create content, which enables automatic publication speed increases (Tessem et al., 2024). Second, to fact-check and combat misinformation. AI helps verify news, reducing the spread of fakes (Lelo, 2024; Santos, 2023). Third, there is the issue of the AI-to-audience ratio. Studies show that user experience is improved by personalized news and automatic content selection (Moran, 2023). Fourth, ethical and legal challenges are summarized by some authors, who point out the bias of AI algorithms, their impact on public opinion, and the risks of losing trust in news (Fang et al., 2024; Trattner et al., 2022).

3.2 AI in sports journalism

Although the use of AI in sports media remains limited, its potential benefits and barriers are already being explored (Canavilhas, 2022). Automatic sports news generation models and their impact on viewer experience are being explored (Wang, 2022). AI tools can analyze team tactics and statistics to create more in-depth analyses (Cheng et al., 2024).

3.3 Research gaps and shortcomings

Lack of comprehensive analyses of AI in Olympic journalism - previous research has mainly focused on content automation, but has not covered all stages of news distribution at major sporting events. Lack of attention to ethical considerations - there is little work in the sources on privacy issues, AI bias, and the impact on the journalistic profession. Lack of data on audience interaction with AI content: current research does not provide a complete picture of how viewers perceive AI-generated news.

3.3 Related research

The application of AI in the field of journalism has become a focal point of academic research. By using "Artificial intelligence" or "AI" as keywords, along with "journalism" or "news" or "news reporting" as subject terms in the "Web of Science" (WOS) database, a total of 108 research results were obtained (search cut-off date: August 8, 2024). An examination of these study findings demonstrates that AI news research began in 2015 and has steadily increased in publications since 2019. Over the last three years, the average number of publications each year has risen to 20, demonstrating an expanding body of work in this field (Figure 1).

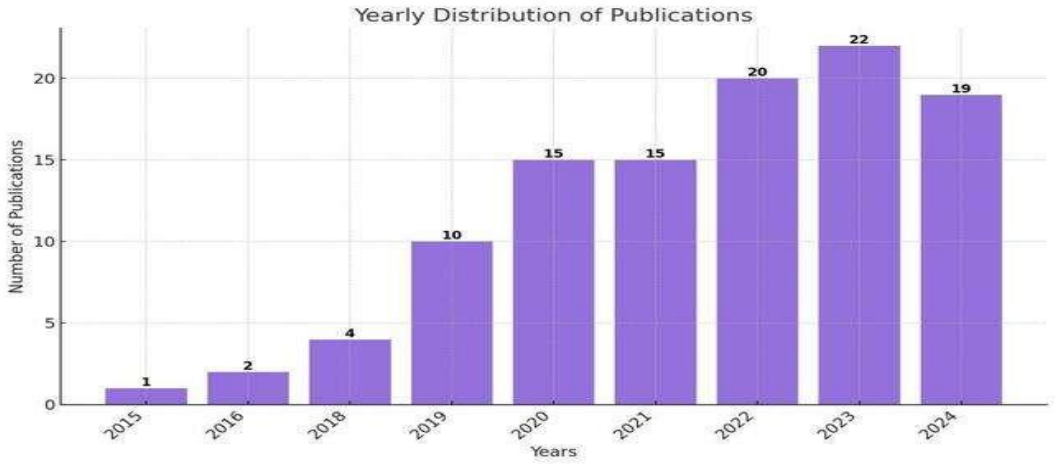

Figure 1: Yearly distribution of publications

At the same time, AI news research has demonstrated multidisciplinary qualities. For example, among the 108 articles on AI news published in the WOS database, 79 are in communication studies and 26 are in computer science and information science, indicating that these disciplines play a prominent role in AI news dissemination. In addition, there are some study findings in business economics, government law, linguistics, and sociology (Figure 2). This multidisciplinary study characteristic shows AI technology's broad impact and application possibilities in news dissemination.

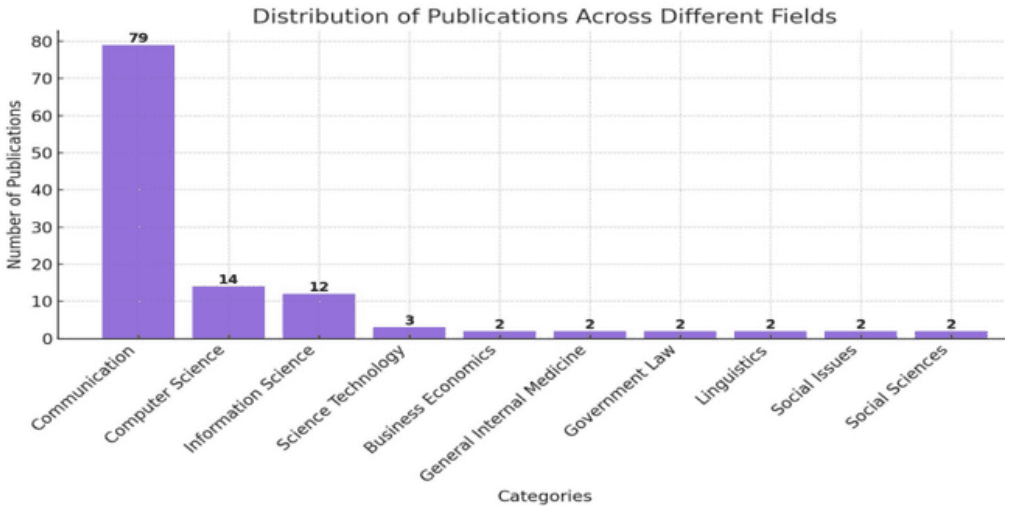

Figure 2: Disciplinary distribution of AI journalism publications

Among the existing research, particularly within the field of communication studies, scholars have explored a diverse range of perspectives. Some studies have examined the technological improvements that AI offers to journalism from the perspective of communicators. According to studies, 75% of newsrooms now use artificial intelligence, which streamlines jobs and frees up journalists' time for creative work. AI also aids in fact-checking and disinformation reduction (Lelo, 2024; Santos, 2023), and it increases the possibilities for investigative journalism (Stray, 2019). Other researchers have investigated the novel experiences that AI-generated news offers audiences (Moran, 2023) and feel that AI news promotes social democracy (Salom, 2024).

Some scholars have taken a macro perspective to identify the current focuses and trends in AI news research. For example, Mathias-Felipe et al. (2021) analyzed the adoption of artificial intelligence in the journalism industry according to seven subfields of AI. Ruiz et al. (2024) did an integrative analysis of 28 funded projects in Europe that combined artificial intelligence and journalism from 2013 to 2023. Their

research found that these projects are mostly concerned with analyzing how to combat misinformation and using bots and algorithms to improve organizational communication. They reckon that future studies should focus on techniques or solutions for overcoming the hurdles of applying artificial intelligence in journalism today, as well as audience views of the quality and features of analytical material.

Other researchers have taken a more critical approach to the matter, investigating the biases inherent in AI-generated news (Fang, X. et al., 2024; Moran, R. E., & Shaikh, S. J., 2022) as well as the ethical (Trattner et al., 2022) and security considerations at stake (Nguyen, 2024; Hamed et al., 2024). For example, Bhadra et al. (2024) argue that the current state-of-the-art artificial intelligence technologies exhibit biases toward a Global North context when combating fake news. This makes them potentially unsuitable for use in the Global South and introduces geopolitical biases that affect the Global South. Forja-Pena et al. (2024) argue that the rapid integration of artificial intelligence into media production processes may lead to a loss of public trust in the information provided by the media, increased political polarization, and a growing influence of misinformation.

As AI news research advances, there is also a small amount of research on AI in sports journalism. Scholars explored the potential, problems, and future development patterns presented by AI in sports news transmission. Wang (2022) investigated AI-driven sports news production models and discovered that traditional methods of sports news transmission no longer meet customer needs. Combining wireless network distribution with AI features to develop new inventive production models for sports news is seen as an unavoidable trend of the times. Canavilhas (2022) found that the Portuguese sports journalism industry has recognized the potential of artificial intelligence, although it has not yet been implemented in newsrooms due to economic and professional constraints. Leng et al. (2022) examined the primary influencing elements of AI on sports news reporting through the perspectives of media ownership, media environment, media power, and media culture. Cheng et al. (2024) investigated how to automatically produce interesting sports news using massive AI language models.

However, existing research on the application of AI technology in Olympic news reporting is limited, and there is hardly any research on the application of AI technology in news coverage of the 2024 Paris Olympics. Therefore, this study holds significant theoretical and practical value.

In conclusion, AI in journalism has undergone rapid evolution since 2015, with significant growth in research across various fields, including news automation, fact-checking, personalized content, and the exploration of ethical challenges. While AI's potential in sports journalism is being explored, especially in automated news generation and in-depth analysis, key research gaps remain. These include the lack of comprehensive studies on AI in Olympic journalism, insufficient attention to ethical issues like AI bias and privacy, and limited data on audience interactions with AI-generated news, highlighting areas for further investigation.

RESEARCH METHODS

This study employs a combined methodological approach, incorporating a literature review, descriptive case study analysis, and an inductive method, to explore the application of Artificial Intelligence (AI) in sports news dissemination during the 2024 Paris Olympics. The approach integrates both theoretical frameworks and case studies to provide a comprehensive understanding of the topic.

4.1 Data collection methods

4.1.1 Review of the scientific literature

A systematic literature review was conducted to establish the theoretical framework for the study. The search was performed in the Web of Science database using the keywords ‘Artificial Intelligence’

combined with ‘Journalism,’ ‘News,’ and ‘Sports News.’ A total of 108 relevant publications were identified, with a cutoff date of August 8, 2024. The analysis revealed that research in AI journalism has been steadily growing since 2015, with a sharp increase in publications from 2019, reaching up to 20 per year.

4.1.2 Analysis of empirical data from the 2024 Olympics

The study utilizes a descriptive case study approach, focusing on the implementation of AI in news dissemination during the 2024 Paris Olympics. Data was collected from publicly available sources, including official reports from the International Olympic Committee (IOC, 2024), media publications (Xinhua News Agency, NBC, CCTV, Alibaba Cloud, OBS), and technical reports and press releases from technology companies (Alibaba Cloud, Intel, Orange, Samsung, Migu Video).

4.2 Methods of data analysis

4.2.1 Descriptive analysis of case studies

The study includes a detailed analysis of specific AI technologies applied during the Olympics. These technologies encompass AI news gathering systems (e.g., slow-motion cameras, 8K cameras, 5G), content generation tools (such as automatic translation, speech synthesis, and AI journalists), personalized distribution methods (AI recommendations, interactivity), and feedback analysis via AI monitoring of social media networks. A graphical diagram illustrating the integration of traditional news dissemination methods with AI technologies is also presented.

4.2.2 Inductive Method

The inductive method is employed to analyze case study data and derive general conclusions about the benefits and risks of AI in journalism. For example, the fact that OBSCloud has replaced satellite broadcasting leads to the conclusion that AI cloud technology enhances news distribution efficiency while reducing costs. Similarly, the fact that AI-generated news (from sources such as Xinhua and NBC) reduces operational costs but raises concerns about objectivity suggests that algorithmic biases should be considered when utilizing AI for news production.

This multimethod logical approach enables the study to:

1) Understand the theoretical context by examining 108 relevant publications.

2) Analyze specific cases of AI applications during the 2024 Olympics.

3) Systematize the changes in sports journalism, highlighting both the positive aspects (e.g., increased speed and content personalization) and the risks (e.g., potential issues with objectivity and privacy).

FINDINGS

5.1 AI News dissemination at the Paris Olympics

As the first Olympics to release the "Olympic AI Agenda" (IOC, 2024), the Paris Olympics incorporated numerous AI features throughout the news dissemination process. From news gathering and production to news distribution, personalized push, audience interaction and feedback, AI is integrated throughout the entire process of sports news dissemination at the Paris Olympics, forming a closed loop. The specific flowchart is as follows (Figure 3).

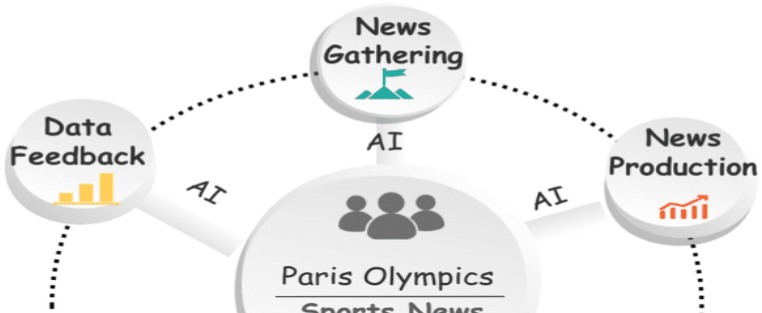

Figure 3. AI News dissemination flowchart for the Paris Olympics

5.2 AI News gathering

Artificial intelligence technology has greatly accelerated the optimization and innovation of the news-collecting process (Wang, 2022). At the Paris Olympics, the application of AI in news gathering was primarily evident in the AI-driven camera systems.

To begin, the Paris Olympics used AI-powered slow-motion replay camera systems offered by Alibaba Cloud for the first time, guaranteeing that every outstanding moment was precisely caught (Luo, 2024). This camera system was utilized to film over twenty different activities, including badminton, athletics, rugby sevens, basketball, beach volleyball, table tennis, wrestling, tennis, and judo. This technology provides 3D modelling without the need of wearable devices, 360-degree all-around replay, and three-dimensional freeze-frame effects, resulting in a "bullet time" effect similar to that seen in science fiction films, in which time appears to stand still. This helps the audience to fully enjoy event details from all angles and viewpoints.

Furthermore, the combination of real-time 5G network transmission and 8K resolution event recording with AI technology improved the efficiency and quality of news coverage at the Paris Olympics. For example, Samsung's Galaxy S24 Ultra phone was utilized in the live broadcast of the opening ceremony, with over 200 phones put aboard 85 boats to enable real-time HDR picture transmission over a 5G network. During the opening ceremony on the Seine River, the French telecom company Orange provided built-in 5G network solutions for the scooters of the various sports delegations to share live footage (Luo, 2024). The use of 5G networks enables AI systems to do real-time processing and speedy replies.

AI technology was also utilized to optimize the transmission and storage of 8K video for the Olympics. The Paris Olympics used 8K quality event recording for the first time. 8K recording is an ultra-high-definition video recording method with a resolution of 7680x4320 pixels, resulting in more detailed and realistic image quality and deeper colors, allowing every aspect of the competition to be seen. AI technologies helped with video compression, augmentation, object recognition, and content generation during 8K video recording.

In addition, virtual studio backgrounds and augmented reality (AR) content have been used for interviews at multiple Olympic venues and villages. Live studio interviews from the Olympic Village can be directly transmitted to the athlete village's studio, which can then choose different levels of studio complexity to integrate with the home studio (Ken, 2024). The use of AI technologies such as VR and AR not only improves the audience's viewing experience, but also gives journalists and reporting teams more flexible tools for telling Olympic stories.

5.3 AI News generation

Artificial intelligence-generated content (AIGC) has been widely regarded as one of the most

revolutionary and disruptive tools (Liu et al., 2024). AIGC efficiently generates large amounts of content, from text to visual and audio formats, delivering fresh and rich multimedia material (Sun, 2024). The Paris Olympics is no exception.

For instance, during the events, China Central Television (CCTV) used CMG Media Cloud for AI transcription, AI lyrics, AI translation, AI dubbing, as well as AI image processing, which considerably improved the productivity of event production. The Xinhua News Agency launched a new column, "AIGC Watch the Olympics," building on the existing "AIGC Watch Sports." This column uses AI technology to achieve real-time automatic generation of event news videos and text, supplemented by a large number of AI-generated images (Figure 4), greatly enhancing the speed and richness of sports news reporting. Additionally, China Mobile's Migu Video introduced the first AI table tennis event review program in China, "AI Ping China." Using AI technology, it collects real-time data on the landing points and trajectories of table tennis balls during Olympic events, automatically analyzes and categorizes them, and then visually presents the data. This process creates technologically advanced and Olympic-themed table tennis event scene videos in a timely and intelligent manner.

Figure 4: AI-Generated News images by Xinhua News Agency
(Data Source: Xinhua News Agency App)

In addition to AI-generated content, AI image restoration technology, AI visualization, VR, and AR are also used in the production of Olympic news. For instance, Alibaba, in collaboration with the International Olympic Committee (IOC), released a short film titled "To the Greatness of HER," which collected the stories of outstanding women from the Olympics' century-long history into a brief 8-minute film. This short video was created utilizing AI restoration technology, which is based on Alibaba Cloud's artificial intelligence platform, PAI. Using AI model development toolkits, picture improvement technology, and AI coloring technology, a black-and-white film from 100 years ago was successfully

restored to color high-definition photos, allowing the magnificent moments of Olympic ladies from a century ago to be viewed again (Luo, 2024).

5.4 AI News release

AI cloud broadcasting and AI news reporting have also improved the Paris Olympics' news release process, making it faster and more vivid. The flowchart of the news release procedure for the Paris Olympics is shown below (Figure 5).

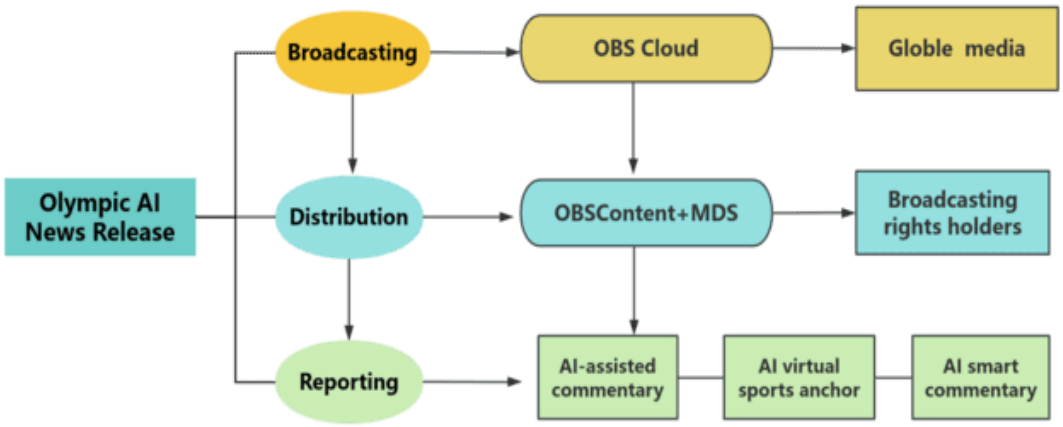

Figure 5 AI News release process flowchart during the Paris Olympics

At the Paris Olympics, AI cloud computing-powered cloud broadcasting overtook satellite broadcasting for the first time, becoming the major means for broadcasting Olympic events. The Olympic Broadcasting Services (OBS) and Alibaba Cloud collaborated to create the "Olympic Broadcasting Cloud" (OBSCloud), which was initially utilized for the Tokyo Olympics, then updated for the Beijing Winter Olympics, and finally replaced satellites as the main method of broadcasting at the Paris Olympics. More than two-thirds of the Olympic live broadcast signals were carried via the Olympic Broadcasting Cloud to over 200 nations and regions worldwide, with a total live broadcast duration of 11,000 hours (Ken, 2024). Cloud broadcasting not only lowers the expensive expenses associated with traditional satellite broadcasting, but it also boasts minimal latency and high bandwidth. This enables it to handle traffic peaks during the opening ceremony and popular events more effectively, as well as transmit 8K ultra-high-definition content.

During the Paris Olympics, all media content produced by OBS was uploaded to the OBSContent+ platform for the first time, allowing for easier future news dissemination. The OBSContent+ platform, supported by Alibaba Cloud, distributes content through the Multi-Channel Distribution Service (MDS) to Olympic broadcast rights holders, including global television stations, online platforms, and self-media. During the distribution of live streams, broadcast rights holders have rapid and flexible access to platform resources from all over the world. They can retransmit videos, add comments, and edit in real-time. They can also enhance their reporting with their own photographs, interviews, statistics, analysis, and comments (Cui & Jiang, 2024).

In addition to AI cloud broadcasting, the Paris Olympics included AI-assisted event commentary, AI virtual sports anchors, and AI intelligent commentary, which considerably increased the depth and engagement of event reporting. To begin, AI-assisted event commentary uses huge amounts of data to deliver exact match analysis and live commentary. At the Paris Olympics, the Alibaba International AI team's Agent framework delivered AI services as part of the commentator scenario structure. It could quickly query relevant databases or documents, perform mathematical calculations, or conduct complex

reasoning to answer specific questions from human commentators on the spot, thus providing more professional and engaging assistance for Olympic event coverage.

Second, AI virtual sports anchors can generate and broadcast event news in real time. For example, during the Paris Olympics, NBC in the United States employed an artificial intelligence-generated voice based on a real sports anchor for the first time in their "Daily Olympic Recap." The voice of the "AI anchor" was trained on previous broadcasts by the well-known American broadcaster Al Michaels. Similarly, AI digital humans based on Chinese athletes Zhang and Zou were introduced, providing users with an innovative AI+ experience through AI studio endorsements and AI broadcasting. You Zixi, the artificial person, also participated in the unique table tennis show "AI Ping China" during the Paris Olympics, providing engaging commentary and interactivity as a digital host. In addition, China's national media Xinhua News Agency, as well as local television stations such as Shandong TV, Guangdong TV, and Beijing TV, have also adopted virtual anchors for Olympic news broadcasts. Most of them are digital twin anchors based on artificial intelligence digital twin technology, capable of mimicking and replicating the appearance, voice, movements, and expressions of real anchors (Jones et al., 2020)

AI intelligent commentary was employed for the first time at the Olympics. Migu, China's well-known video news production firm, trained enormous datasets of video, audio, and text commentary, outperforming important technologies including live event synchronization with text commentary. This lead to the successful creation of the AI intelligent commentary capability. This feature was initially used at the 2024 UEFA European Championship and covered all football events at the Paris Olympics. AI technology enables real-time event data analysis, automatically creating fascinating Olympic trivia commentary, and broadcasting it using "AI star voice separation" technology, providing users with an experience similar to live commentary by celebrities.

5.6 AI personalized push

Viewers may personalize their event reviews and viewing experiences using artificial intelligence (AI). For example, NBC launched an AI-powered "OLI" logic engine that offers the best-watching alternatives to consumers based on match times, time zones, athletes, and event highlights. Viewers can also ask "OLI" questions regarding Olympic programming via natural language chat (NBC Olympics, 2024). Similarly, Apple Vision Pro customers who download and use "Migu Video" for Olympic viewing may enjoy a new immersive experience that allows them to watch five events at the same time on multiple screens. Users can customize and watch five live Olympic games simultaneously in a merged reality setting, guaranteeing they capture every exciting moment without having to switch channels when events overlap.

AI technology can also personalize news feeds and distribution based on user preferences. AI technology can also personalize news feeds and distribution based on user preferences. For example, NBC Universal's Peacock offers subscribers the ability to select specific sports or athletes based on their interests. The artificial intelligence system then provides personalized material, like as game highlights, behind-the-scenes video, top matches, and popular moments, which is automatically pushed to consumers on a daily basis. CCTV's "Yang Xiaopin AI" can interact with users via voice or text, providing real-time information on schedules and medal standings, and guiding users to book or watch live events. Many portals, including Google News, Yahoo Sports, Tencent News, Sina China, and Toutiao, provide personalized news services during the Olympics. Users may select individual sports or nations to receive personalized news updates, live scores, and event results.

Furthermore, the Olympic Broadcasting Service (OBS) uses Intel's Geti platform to train a highlights automation function, enabling the generation of customized highlight packages across several sports that are sent in real-time to spectators. China's Migu Video also utilizes "AIGC content production"

technology to intelligently detect and capture exciting moments from events, generating AI vertical screen reports or short videos with athlete and ball trajectory shadows, and pushing these to users.

5.6 AI audience interaction

With technological improvements, "viewers" are no longer simply "viewers," but also "participants" in the events (Ramchandani et al., 2022). During the Paris Olympics, several media organizations are employing advanced AI technology and unique interactive elements to continually improve viewer engagement and involvement.

For example, during the Olympics, Migu Video's "AI Star Highlight" interactive feature allows fans to follow their favorite athletes with a single click. AI Star Highlight uses AI image recognition and intelligent tracking technology to recognize, monitor, and identify all players in real time during live football and basketball broadcasts. Viewers may click on their favorite players on the live broadcast to acquire information like their position and jersey number, creating a gamified viewing experience.

Similarly, CCTV's "CCTV Sports" has launched the AI Olympic Poster H5 campaign. This campaign creatively combines AI technology with Olympic culture through sections like "AI Paris Tour," "AI Paris Show," and "Treasure Hunt in Paris." The "AI Paris Tour" section, in particular, makes use of Tencent's Hunyuan big model's AI skills to animate static Olympic posters, giving viewers the impression that they are touring the streets of Paris, seeing thrilling Olympic activities and the special beauty of French iconic elements. This interaction not only enhances audience engagement but also makes the dissemination of Olympic culture more vivid and interesting.

Interacting with AI stars and becoming an "AI digital person" are both effective strategies to draw viewers during the Olympics. For example, Byte Dance's Doubao App works with Olympic diving champion Wu Minxia and badminton Olympic champion Lin Dan to build special Olympic intelligent entities, allowing users to interact with AI sports stars regarding Olympic issues. Users can also participate in China Mobile's AI digital person "All-People Support Photo" campaign. By uploading a photo and choosing an Olympic event they want to support, such as tennis, table tennis, sprinting, diving, volleyball, or shooting, users can generate their own exclusive Olympic support digital person photo, transforming into digital athletes to "travel" to the competition site and cheer for the Olympics. The interaction not only fulfills users' "star-chasing" desires, but also boosts their interest and engagement in the Olympics.

5.7 Communication feedback

Communication feedback is a crucial part of the news dissemination process, ensuring that the transmission of information achieves the desired effect and providing a basis for adjustments in subsequent dissemination (Micklos et al., 2023). During the Paris Olympics, AI technology played an active role in realizing communication feedback.

On the one hand, using natural language processing (NLP) and machine learning algorithms, AI can monitor and analyze feedback on social media platforms and comment sections in real time. For example, to ensure cybersecurity and prevent malicious attacks, the Paris Olympics implemented a new AI monitoring system that supports over 35 languages. This system uses AI to monitor thousands of accounts on platforms such as X (previously Twitter), Instagram, Facebook, and TikTok. It uses natural language processing technology and machine learning techniques to swiftly identify harmful speech. Content identified as having cyberbullying tendencies is flagged for the relevant social media platforms to handle, effectively preventing instances of cyberbullying (Lei, 2024).

On the other hand, AI technology has the ability to not only monitor but also extract valuable data from social media. This information can include user sentiment, trending topics, and the frequency of specific keywords. By deeply analyzing these data, news disseminators can better understand public sentiment

and social dynamics, allowing them to adjust content and dissemination strategies in real time. This guarantees that the audience has a better watching experience.

5.8 Sports journalism and artificial intelligence in the dialogue of civilizations

We believe that in the conditions of digital transformation of society, the efficiency of information use depends not only on scientific and technological support, but also on the correlation with the global information flow. Thus, artificial intelligence and informatization of the world space make social relations more open to public control.

The main tasks of information should be: striving for truth, objective news transmission, while avoiding lies, slander, distortion and falsification. It follows that the basis of dialogue should include a significant element - the attitude to athletes and journalists as people who play a unique role in intercivilizational dialogue, because they have the authority and ability to demonstrate positive examples of intercultural and interreligious cooperation, to operate with accurate information in real and virtual life (our concept - D.B.).

It is digitalization and artificial intelligence that intensively form and order the world picture, creating for all participants of interaction also a unified world system and unified ways of behavioral assessment. Perhaps it is in global networks that we should see how the same values, when appropriately packaged and presented, can be used for both destructive and constructive purposes.

Finally, we can also note that even fundamental values, on which our survival depends, are understood differently by cultures, countries, peoples, confessions in a particular historical epoch.

It is obvious that revealing the complex essence of adaptation of global civilization to artificial intelligence and their mutual adaptation is possible only on the basis of using the latest data from many sciences and disciplines (social philosophy, cognitive psychology, social psychology, evolutionary economics, synergetic anthropology, physics, etc.), and not on the basis of their eclectic combination, but by means of philosophical generalization.

DISCUSSIONS

This paper explored the application of AI technology in sports news dissemination during the 2024 Paris Olympics, covering various stages from news gathering, generation, and release to personalized push notifications, audience interaction, and communication feedback. The study discovered that AI technology not only optimized the news production process for the Paris Olympics, but also significantly improved the efficiency of sports news dissemination by lowering costs, enriching sports news formats, providing personalized content recommendations, and increasing audience engagement. These achievements provide a promising example for the future of sports news dissemination.

However, despite the significant benefits of AI technology in the communication of sports news at the 2024 Paris Olympics, some obstacles and issues persist. First, over-reliance on AI technology may lead to a degradation of skills among news professionals. For instance, Xinhua News Agency's "AIGC Olympic Column," while achieving real-time automatic generation of event news videos and text through AI technology, might lead journalists to overly depend on AI for drafting, disregarding the development of their own writing and editing abilities. Although AI-generated images increase reporting speed and visual appeal, they may diminish possibilities and motivation for journalists and editors to think creatively and freely.

Second, the authenticity and objectivity of AI-generated information require consideration. For example, while NBC's usage of AI technology for automated reporting and commentary production during the Olympics improved reporting productivity, it may have introduced biases owing to training data limits

or algorithm design problems. If particular countries' performance is not well represented in the training data, AI may disregard them. Furthermore, if the training data contains prejudices or biases towards specific nations, or athletes, or based on race or gender, it may result in unbalanced reporting, influencing public perception of the events.

Third, protecting user privacy while AI monitors and analyses user data is a critical concern. For example, AI monitoring systems deployed during the Paris Olympics to analyze debates on major social media may swiftly identify harmful comments, but if misused, they may violate user privacy rights. Personalized recommendation systems from companies such as NBC, Migu Video, Google News, and Yahoo Sports, which provide personalized news content to users via AI, may risk privacy breaches and data misuse if they lack effective privacy protection measures and fail to ensure data security and anonymity. Furthermore, activities such as China Mobile's AI digital person "All-People Support Photo" campaign, which asks users to supply a photo to make personalized support images, may result in the misuse or leaking of these photos and related data, infringing on users' portrait rights.

In summary, the application of AI technology in sports news dissemination during the 2024 Paris Olympics not only demonstrated the innovation and potential of AI technology, but also gave significant experience and examples for the future of sports news dissemination. However, with the extensive use of AI technology, concerns such as the deterioration of news professionals' abilities, threats to the authenticity and impartiality of news information, and user privacy protection have become more visible. While appreciating the ease given by AI, it is vital to focus on the ethical and security aspects of AI applications. This will be an important path for future study and practice in AI sports news.

Table 1: Impact of AI on the stages of sports news dissemination

Stage	AI technologies used	Major changes	Potential risks
Newsgathering	AI cameras, 5G, 8K broadcasts.	Faster data collection, higher quality content	Possible dependence on technology companies
Content generation	Automatic translation, speech synthesis, AIGC	Automation, responsiveness, multimedia	Loss of authorial style, possible AI errors
Publication	OBSCloud, AI journalists, virtual presenters	Reduced broadcasting costs, content availability	Reducing the role of traditional journalists
Personalisation	AI recommendations, chatbots, interactive services	Individual approach to the user	Threats to data privacy
Feedback analysis	AI social media monitoring, NLP algorithms	Quickly identifying trends, combating misinformation	Possible censorship, violation of freedom of speech

AI has changed all stages of news dissemination, making it faster, more accurate and personalized. However, ethical challenges remain: the impact on news objectivity, privacy risks, and the declining role of traditional journalism. The future of research should include regulation of AI journalism, prevention of information manipulation, and ethical standards for working with AI content.

The results of the study show that AI has significantly transformed the processes of collecting, creating, publishing and analyzing news at the 2024 Olympics. However, these changes come with both benefits and potential risks. This section interprets the findings in comparison to previous studies and discusses the implications and limitations of using AI in sports journalism.

Table 2. Comparison with previous studies

Study area	Conclusions of the current study	Findings from previous studies	What's changed?
AI in sports journalism	Full integration of AI into all stages of the news cycle	Individual aspects, such as news automation, have been studied previously (Canavil, 2022; Wang, 2022)	For the first time, the entire news cycle at the Olympics is systematically examined
AI and the audience	Increased personalization, new interactive services	Previous work has only analyzed recommender systems (Moran, 2023)	The impact of AI on viewer engagement and feedback is revealed
The ethical risks of AI	Possible distortions of information, threats to privacy	Algorithm biases have been mentioned (Fang et al., 2024)	The Olympics -2024 was an example of real conflicts of ethics and technology

Thus, this study confirmed existing trends, but also revealed new aspects that had not been studied before. AI has fundamentally changed sports journalism. The 2024 Olympics was an example of a complete digital transformation of the news process. The main benefit is the acceleration, personalization and optimization of news distribution. The main risks are the threat to objectivity, data privacy and the diminishing role of traditional journalists. Future research should include analysis of audience perceptions of AI news and finding a balance between automation and journalistic ethics.

This study found that the 2024 Olympics was the first large-scale sporting event where AI was fully integrated into the news dissemination process, from gathering information to analyzing audience feedback. The use of AI cameras, cloud broadcasting, automated news and personalized recommendations demonstrated a new level of digitalization of sports journalism. Key findings:

1) AI has changed the entire news cycle, improving the timeliness, accuracy and personalization of news.

2) The automation of journalism has brought both benefits and challenges: cost reductions and faster publication are coupled with risks of loss of objectivity and threats to data privacy.

3) AI has increased audience interaction with content, but has also raised questions about its impact on news perception and public opinion.

4) The study is the first to offer a comprehensive model of AI journalism using the 2024 Olympics as a case study, filling a gap in research on the role of AI in sports media.

5) A key challenge for the future is finding a balance between automation, journalistic ethics and audience trust in AI content.

The study expands the understanding of the digital transformation of sports journalism by offering an interdisciplinary analysis of AI technologies in news production. The ethical and social challenges identified lay the groundwork for the development of new standards for AI journalism. The results will help media companies and sports organizations to use AI more effectively, preserving the quality and credibility of news. It is important for regulators and journalistic communities to consider the risks of AI bias, the protection of user data and the need to maintain human control.

The 2024 Olympics showed that AI journalism can become the standard for all major sporting events. However, the mass automation of news requires a new level of media literacy so that viewers can critically evaluate AI content. The 2024 Olympics was a breakthrough experiment in the field of AI journalism, and the results of this study can inform future research and applications in AI media.

The development of artificial intelligence in sports news distribution is having a transformational impact on journalism, changing the way content is collected, analyzed, published and personalized. AI technology is accelerating the news cycle, reducing the cost of content production and increasing the personalization of content for audiences. AI also provides journalists with new analytical tools, such as automated match statistics analysis, score prediction and fact-checking, to facilitate deeper and more accurate coverage of sporting events. Interactive technologies, including virtual presenters and augmented reality (AR), are opening up new formats for audience interaction, making sports coverage more dynamic and accessible.

However, alongside the benefits, there are significant challenges associated with implementing AI in sports journalism. One of the key risks is the diminishing role of traditional journalists, as automated algorithms may replace human labor, which could lead to a loss of professional skills and less analytical reporting. In addition, the algorithmic bias of AI systems can affect the objectivity and credibility of news content, forming information 'bubbles' and limiting audience access to diverse viewpoints. The issue of data privacy is also becoming critical, as personalized news recommendations require the collection and analysis of large amounts of user information, which creates risks of unauthorized use of data and information manipulation.

Thus, the future of sports journalism lies not in the complete replacement of the human factor by artificial intelligence, but in the effective combination of automation and professional journalism. AI can become a powerful tool for optimizing routine processes and expanding analytical capabilities, but preserving the principles of journalistic ethics, ensuring transparency of algorithms and regulating the use of AI technologies are necessary conditions for the formation of a balanced information environment. In this context, developing media literacy among news consumers is of particular importance, which will enable them to critically evaluate AI-generated content and recognize its peculiarities.

CONCLUSION

The application of AI technology in sports journalism during the 2024 Paris Olympics has demonstrated significant advancements in news dissemination, improving timeliness, accuracy, and personalization of content. AI tools have not only enhanced the efficiency of content creation, publication, and distribution but also fostered greater audience engagement through personalized recommendations and interactive services. However, the integration of AI also presents notable challenges. The risks of diminishing journalistic skills, the potential for algorithmic biases affecting objectivity, and concerns surrounding data privacy and user trust have become increasingly apparent.

The 2024 Olympics serve as a groundbreaking case study in the digital transformation of sports journalism, where AI has been fully integrated into the news cycle. While the study confirms the positive impacts of AI, such as cost reduction and increased reporting speed, it also underscores the need for caution. Ethical considerations regarding AI's role in news production, privacy protections, and the preservation of human oversight are critical for the future of AI journalism. To ensure the responsible use of AI, future research should focus on addressing these ethical challenges and establishing guidelines for the responsible application of AI in journalism. Furthermore, fostering media literacy among audiences is crucial to equip them with the tools to assess AI-generated content critically. Ultimately, a balanced approach combining the efficiency of AI with the ethical foundations of traditional journalism is essential for the future of sports media.

AUTHOR CONTRIBUTIONS

Xie Pengpeng contributed to the conceptualization, methodology, formal analysis, investigation, data collection, visualization, writing of the original draft, and review and editing of the manuscript. Shahrul Nazmi Sannusi contributed to the supervision of the project, conceptualization, methodology, formal analysis, and the review of the original draft. Kho Suet Nie contributed to the supervision of the project, conceptualization, methodology, formal analysis, and manuscript editing. Denis Brusilovskii contributed to editing and reviewing the manuscript, as well as providing reflections on sports journalism and artificial intelligence in the context of dialogue between civilizations. Apsamatova Elvira contributed to editing the manuscript. All authors have read and agreed to the published version of the manuscript.

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