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A review of the role of artificial intelligence in Journalism

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Abstract: Artificial intelligence (AI) technologies have revolutionized journalism in the digital era. This study is constructed on a general literature review revealing the role of AI in journalism and emphasizes the following key facets: (i) automated reporting, (ii) automated content creation, (iii) automated transcription and translation, (iv) data mining and analysis, (v) fact-checking and verification, and (vi) content personalization. The role of AI is observed in creating news reports like financial digests, sports outcomes, and weather updates, gearing up the automated content creation, transcribing the interviews, providing multilingual support for content translation, data mining and analysis, detecting fake news, personalizing the content in line with audience's preferences. The wide application of AI in journalism automates routine journalistic tasks, thereby improving efficacy and productivity and saving time and effort. Though AI is transforming journalism, there are several challenges facing journalism using AI, including biased algorithms, data availability and quality, data privacy and security, the need for training and education, transparency, and cost concerns. Journalists must be trained to identify and address issues such as data privacy, algorithmic bias, and the ethical implications of adopting AI in news reporting. News agencies should also implement strong data protection measures and transparent AI algorithms to overcome these challenges. They must attain a balance between considering user privacy and offering personalized content. It is paramount to have robust regulatory frameworks to oversee the utility of AI in journalism. Also, warranting ethical standards in AI implementation is crucial to preserving journalistic integrity.

Keywords: *Artificial intelligence, Content, Data, Ethics, Journalism.*

1. Introduction

Artificial intelligence (AI) is the simulation of "human intelligence" in machines designed to think like human beings and imitate their activities. It can also be employed in any machine that displays human cognitive functions like problem-solving and learning (Rahman, 2024). AI denotes computer technologies echoing mechanisms reinforced by the human mind, such as in-depth learning, transformation, logical reasoning, sensory comprehension, and commitment (Tagliaferri et al., 2020; Tran et al., 2019). Russell and Norvig (2021) stated that AI includes various applications ranging from robotics to natural language processing (NLP). It also has several subfields: machine learning (ML), deep learning, and neural networks. It functions by using large volumes of data, investigating the data patterns, and making estimates or decisions based on those patterns. Furthermore, NLP highlights the connections between computers and human language (Sadiku et al., 2018). ML comprises algorithms that study from and make decisions using data (Russell & Norvig, 2021). Deep learning uses composite neural networks and further transforms the field of AI by allowing the mining of complex designs out of vast information (Ali Khan et al., 2024). The crucial developments in deep learning presented convolutional neural networks (CNNs) and repetitive neural networks organizations (RNNs). CNNs are used for image processing tasks, while RNNs are used for handling serial data like natural language data and time series by preserving a memory level to gain temporal dependencies (Masood, 2023). Chat Generative Pretrained Transformer (ChatGPT), a large language model was developed by OpenAI, San Francisco, and drastically altered AI's view (Lee et al., 2024; Stanescu et al., 2023). It is an AI-based

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conversational tool that employs NLP and ML algorithms to imitate human-like chats (Hassani & Silva, 2023). The metaverse embodies a 3D space built on virtual and augmented reality, where people can use their avatars to work, play, and concurrently communicate with each other (Trunfio & Rossi, 2022).

Besides, AI is progressively being applied in many areas, like finance, transportation, healthcare, and journalism, to improve precision and efficacy (Russell & Norvig, 2021). Specifically, AI has extended its contributions to journalism (Cardas-Raduta, 2024) since journalism educates society with the data they require to proceed with their lives (Adams, 2022). The application of AI in journalism has created substantial developments in news reporting and the media landscape. AI has rapidly progressed from a novel experiment to a crucial element in contemporary journalism (Nurelmadina et al., 2021). This progression was initiated with simple algorithms designed to automate news stories, such as monetary digests or sports outcomes. Nevertheless, in recent times, the role of AI in journalism has expanded intensely by strengthening content personalization, data analysis, investigative journalism, and editorial decisions (Bahroun et al., 2023). In journalism, AI has not only reformed the process of conventional news production but also transformed the means through which news content is tailored, confirmed for accuracy, and conveyed to global audiences (Diakopoulos, 2019). AI tools like NLP and ML algorithms have empowered newsrooms to automate usual activities, letting journalists emphasize comprehensive analysis and reporting (Thurman et al., 2017). AI systems can also aid journalists by means of event announcements, escalating the implementation of complex operations grounded on massive data and focusing on earlier uncovered zones (Partha, 2024). Moreover, the rise of AI in journalism echoes a wider drift of the digital revolution, reforming how news is collected, reported, and consumed. The upward significance of AI is evidence of technological development and a sign of the varying desires and drift of news consumption in the digital era (Gollmitzer, 2023).

While reviewing previous literature, a qualitative approach was made to discover how the journalists were accepting AI and reveal the challenges and breaks faced while adopting AI (Adjin-Tettey et al., 2024). A recent study was conducted to reveal the knowledge and perception of AI in journalism among Bangladeshi journalists and comprehend the present and future of AI in newsrooms (Partha et al., 2024). Another recent study observed the incidence and influence of AI acceptance in Indian media agencies using a comprehensive review, case studies in those agencies, and content analysis of news produced by AI (Tiwari, 2024). Previous reviews studied the scientific output of AI in journalism in various academic databases such as Scopus, WoS, or Google Scholar (Calvo Rubio & Ufarte Ruiz, 2021; Parratt-Fernandez et al., 2021). Recently, Ioscote et al. (2024) studied the effect of AI in journalism using a systematic review of 10-year scientific literature using databases and qualitative analysis of articles with above 50 citations. A recent study analyzed the use of AI in journalism and the merits of ChatGPT in newsrooms using a mixed methodology (Gutierrez-Caneda et al., 2023). Furthermore, a review was conducted to analyze the implementation of AI in journalism, outlining from the early period to modern applications, including ethical issues. It highlighted the impact of AI in journalism, case studies related to AI in journalism, controversial instances, and ethical concerns (Verma, 2024). A recent review investigated the transformational effect of AI on journalism, discovering its complex implications in news generation and distribution (Rahman, 2024). Another review performed an in-depth examination of the complex role of AI in journalism (Amponsah & Atianashie, 2024). Since AI is broadly applied in journalism, thereby improving efficacy and productivity and automating routine activities, this study intends to conduct a general literature review of the role of AI in journalism. It would support the existing literature to reveal the use of AI technologies one step further in journalism.

1.1. Role of AI in Journalism

1.1.1. Automated Reporting

Automated reporting encompasses the utility of AI algorithms to create routine news reports such as weather reports, financial updates, and sports results (Bahroun et al., 2023; Needhi, 2024). This kind of technology influences NLP and ML algorithms to analyze data and generate human-legible content (Needhi, 2024). AI's ability to produce comprehensible and precise reports from structured data has become crucial for time-sensitive and data-driven news or stories. AI can generate automated financial

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digests, sports outcomes, weather updates, and election reports, which confirm that news is appropriate, realistic, and reliable. It is vital in reinforcing newsrooms to face the rising demand for fast news distribution, mainly in a non-stop news cycle. This automation emancipates journalists to deal with in-depth and complex stories in depth and enhance their investigative skills (Amponsah & Atianashie, 2024). For instance, in journalism, "Wordsmith," an AI system, was adopted by "The Associated Press (AP)" to create earnings reports. This system analyzes financial data and generates thousands of reports swiftly (Needhi, 2024). Those AI-generated reports on financial earnings were precise like those prepared by humans and confirmed the AI's ability in automated data-driven reporting in journalism (Needhi, 2024; Carlson, 2015). Moreover, AI can empower real-time reporting by observing live data sources and creating updates on current proceedings. This kind of reporting is valuable for handling stock market variations, natural catastrophes, and sports activities. For instance, the Los Angeles Times formed an AI-based application titled "Quakebot," which produces live earthquake reports using data from the US Geological Survey (USGS). This application generates reports swiftly with key features like location, scale, and effect of the earthquake, letting the news agencies deliver sensible updates to their audiences (Needhi, 2024).

Besides, the application of virtual reality (VR), augmented reality (AR), and 360-degree video in news reporting to develop in-depth, attractive, and interactive storytelling experiences for audiences is termed Immersive journalism (Mandela, 2024). Dominguez (2020) also stated that immersive journalism characterizes a substantial development in the field of news reporting, enriching innovative technologies to generate more attractive and impactful stories. The audiences who watched the news reporting using VR felt more emotionally linked to the events and seemed to remember the story content more. Their engagement was improved by immersive storytelling using VR (Mandela, 2024). Further, AI applications aid journalists to induce a robust emotional response and in-depth comprehension of composite issues through submerging the audiences in the story (Mandela, 2024) and being practices by media agencies of various countries (Mandela, 2024). The Reuters Institute Report found that 30% of media agencies have trialed VR content; however, a minimum (6%) has entirely incorporated VR into their routine reporting practices (Newman et al., 2023; Mandela, 2024). Besides, video analysis using computer vision (CV) can detect important moments, reveal patterns, and derive related information from the video footage, thereby strengthening the precision and depth of journalistic reporting (Wanda et al., 2021).

1.2. Automated Content Creation

In the digital era, AI plays a key role in accelerating the process of automated content creation. It is meant as a fair and modern growth of journalism (Ali & Hassoun, 2019; Graefe, 2016). In recent times, automated content creation plays a major role in news agencies' news production and future journalism (Liu et al., 2017). The rising demand for supplementary news stories will be handled only with the use of automated content creation technologies in the presence of the continual rise of rivalry within the news industry. Furthermore, AI primarily comprises automated software and algorithms, which are accomplished by generating news stories on their own (Diakopoulos, 2019). NLP may generate written content grounded on predefined variables, which results in time-saving while producing reports, articles, and blog posts. Furthermore, NLP algorithms automate the writing process, permitting content writers to emphasize creativity and action plans, thereby boosting the value and efficacy of content creation (Ota et al., 2024). Specifically, Natural language generation (NLG) is an innovative technology in automated content creation, which means the automated generation of text from digitally structured data (Caswell & Dorr, 2018). This technology rapidly progressed and extended its contributions to the news industry (Diakopoulos, 2019). Besides, ML algorithms may assess data and its trends to develop perceptions that can be used in creating content rapidly and proficiently. These algorithms can also aid content makers in creating data-driven content that echoes with their readers (Ota et al., 2024). The benefits of AI technologies in journalism include increased journalists' competence to redefine their fundamental skills, enhanced creative autonomy in their job, and a noteworthy rise in the output of publishing stories with no human interference (Ali & Hassoun, 2019; Milosavlijevic & Vobic, 2019). These benefits meet the rising market demands for fast and accurate new

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stories and demonstrate the value of news content creation using algorithms (Diakopoulos, 2019). On the other hand, the adoption of automation by the news industry should face challenges such as the inevitable movement of workers and an overall drop in human resources since AI technologies have become more proficient in substituting human manpower for definite responsibilities (Carlson, 2015).

Besides, AI-based image recognition software can examine photographs and recognize scenes, objects, and persons. This software is beneficial for content creation since it permits creators to find pertinent photos speedily and competently, enhancing their job's visual appeal. Also, image recognition lets content creators regulate images for several audiences and platforms, consequently improving the overall efficacy of their visual content tactics. Further, spoken language can be translated into text using AI-built voice recognition technology, which is outstanding for content creators who favor dictating instead of typing their information. This technology saves their time and effort during the wiring process. It also permits content creators to produce automated content, which surges output and efficacy (Ota et al., 2024).

1.3. Automated Transcription and Translation

AI can aid journalists in the automated transcription of interviews (Stanescu, 2023). Automated transcription refers to one of the advanced methods of AI integration in the new creation process. AI tools such as Amazon Transcribe and Google WaveNet are used to transcribe interviews and generate automated subtitles and audio files for articles (Simon, 2024). AI-powered transcription can be more precise, and its accuracy will rely on various factors, such as the quality of the language, audio recording, and dialect being spoken. Notably, it is mandatory to cautiously screen the transcripts for errors (Abid Ali, 2021). Furthermore, AI transcription can be more cost-effective than human transcription; however, the cost can alter with the quality and difficulty of the transcription task. The responses of the interviewee must be kept intimate while applying AI-powered transcription, which may store or share audio files or transcripts. Hence, it is vital to select a valid transcription service with strong data privacy rules and regulations (Abid Ali, 2020).

In addition to transcription, AI can help journalists with automated translation, in which ML tools help translate information (Moran & Shaikh, 2022). Automated transcription and translation boost active and precise language processing, allowing journalists to cover news from different linguistic areas (Appelgren & Nygren, 2014). Furthermore, NLP involves the computational processing of human language, allowing computers to manipulate spoken and text words parallel to humans. It engages in comprehension and responding to text or voice data, mining sense from text, and creating readable information. It is used in translation, clustering, and extracting information (Castro & Joshua, 2016). A recent study by Gutierrez-Caneda et al. (2023) observed that journalists used ChatGPT to translate text, make it easy to redraft and restructure a text, and perform brainstorming, data analysis, and processing.

1.4. Data Mining and Analysis

In journalism, AI is used for data mining, which denotes to the withdrawal of valuable information from a massive subset of data and is a dominant part of knowledge discovery (Kotenidis & Veglis, 2021). In news creation, data mining technology can intensely involve news detection, information gathering, editing, and processing (Raza et al., 2019). In the case of the news distribution process, ML algorithms are used for deep data mining to suggest relevant content to audiences (Ken Redekop, 2018). A previous study discussed the news big data mining process using deep learning algorithms, which include semantic network analysis, topic model algorithms, and sentiment analysis using NLP (Yuxin, 2021). The deep learning in data mining uses neural networks to model complex data patterns and effectively handle unstructured data such as text, sound, and images (Tien et al., 2022; Taye, 2023; Lian & Chen, 2024). Furthermore, journalists deal with too many massive datasets, which are hard to comprehend and create in real time. This condition justifies the use of algorithmic data mining in handling such datasets. Data mining can aid journalists in revealing past unnoticed associations between statistically significant variables, leading to the verification of composite ideas and theories. It can also uncover current social drifts and automatically focus on exact clients who might observe the content as being more pertinent

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and being applied along with automated content creation (Kotenidis & Veglis, 2021). For example, Quakebot is helpful for data mining and automated content creation since the application can find and use information from more massive datasets. Chatbots have been used extensively in data mining process (Veglis & Kotenidis, 2022).

Moreover, previous studies stated that Generative AI has a significant role in data analysis and insights by using AI algorithms to analyze massive datasets, recognize patterns, and extract valuable insights for journalistic drives (Fiesler et al., 2018; Hamilton, 2019). Diakopoulos (2019) discovered the ability of data-driven journalism using automated data processing, visualization, and interpretation. Furthermore, AI can execute predictive analysis of what consumers need and thus lead editorial actions, which is valuable for content creation (Cardas-Raduta, 2024). Predictive analytics is a subset of ML devoted to creating predictions about future consequences based on historical data (Russell & Norvig, 2021). It is a method to estimate future events and behaviour grounded on observed data patterns following analysis of current data. In the news industry, ML-based predictive analytics typically analyzes new and historical data to predict audience behavior and implement the insights (Cucchiarelli et al., 2019; Jaaskelainen et al., 2020). AI also has a significant role in analyzing extensive visual datasets such as satellite pictures or graphs. CV, a field of AI with powerful tools, aids journalists in improving and streamlining data analysis. It permits computers to derive valuable information from digital images using facial recognition and image interpretation. It aids journalists in boosting their image and video analysis capacities, improving their ability to interpret visual content more competently. In journalism, CV tools are also used to improve the storytelling and accuracy of reporting (Marconi, 2020).

1.5. Fact-Checking and Verification

AI plays a crucial role in fact-checking and verification processes, controlling the transmission of fake news. AI algorithms can recognize deceptive information and inconsistencies through a quick analysis of massive datasets and help journalists deflate false claims and confirm the correctness of their reporting (Diakopoulos, 2019; Carlson, 2021). AI-driven fact-checking technologies also offer reliable sources to counter misinformation. The capacity of such technologies to analyze patterns and sense anomalies plays a significant role in recognizing fake news (Chen & Li, 2023). The deep learning tools function on artificial neural networks analysing fake news built on linguistic features (Goodfellow et al., 2016). Moreover, AI tools comprise NLP and ML algorithms are being applied to improve the precision and efficacy of fake news detection (Rahman, 2024). NLP tools comprehend the context and semantics of statements, whereas ML recognizes the patterns of false information (Needhi, 2024). ML techniques apply algorithms and statistical methods to train models on unlabelled or labeled data, allowing the system to simplify and create precise forecasts or groupings on new, hidden data (Berrondo-Otermin & Sarasa-Cabezuelo, 2023). The University of Texas created an AI-built application named "ClaimBuster," which uses ML algorithms to analyze statements made by political leaders and other public celebrities, flagging those that need verification (Needhi, 2024). Notably, AI can offer real-time fact-checking during live events, such as political disputes and press conferences. It can find their false or misleading statements through analysis and comparison of their speech to a database of tested facts. For instance, Truth Teller, an AI-powered tool of The Washington Post, performs real-time fact-checking during political speeches. It transcribes the speech, recognizes realistic claims, and cross-references them with a database of tested facts. This tool permits journalists to rapidly confirm statements and deliver precise reporting (Needhi, 2024).

Besides, CV is used for fact-checking and verifying visual information, such as videos and images in news content. It aids journalists who routinely observe user-generated content (UGC) disseminated on social media like Instagram, YouTube, and Twitter. This content may contain images and videos that portray particular incidents or actions. Moreover, CV tools are adopted by journalists to conduct reverse image searches, where these tools quickly scan cyberspace to detect images similar to an uploaded image. This facility aids in verifying the genuineness of the image and finding its real origin. CV can derive and analyze metadata rooted in images, such as time, location, and date where the image was captured, which aids journalists in verifying the obtained information with the claims raised on the content and fixing its accuracy. Concerning image forensics and deepfake detection, CV tools are used to

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detect signs of image and video manipulation or tampering by recognizing edited variations in lighting, the addition of items, and analyzing audio differences, visual signals, and facial actions, respectively (de-Lima-Santos & Ceron, 2021; Gondwe, 2018). On the other hand, ML algorithms are applied in AI-powered applications such as Sensity and Deeptrace to detect deepfakes by checking discrepancies in audio and video content. These tools support fact-checkers and journalists in recognizing and showing manipulated media and confirming the accuracy of content delivered to the audiences (Needhi, 2024). Besides using CV tools, journalists ensure the authenticity and accuracy of visual content within their reports (Harvard, 2020). They can also augment their storytelling and investigative capacities and boost news reporting with improved visual comprehension and reliable context (de-Lima-Santos & Ceron, 2021). Subsequently, the story continues to be appropriate for distribution following severe fact-checking and human editorial review (Deuze & Beckett, 2022).

1.6. Content Personalization

AI has extended its significant paces in personalizing news content (Amponsah & Atianashie, 2024). ML algorithms observe the audience's favorites and behavior and deliver tailored news content, improving their engagement and satisfaction. AI technology is adopted by news platforms such as Google News and the New York Times to curate news information tailored to an audience's desires (Diakopoulos, 2019). Tiwari (2024) stated that the New York Times, using AI, intended to offer personalized content to audiences, tailoring news experiences to individual interests. Such personalized content augments audience engagement and raises a robust association between news platforms and their audiences, which results in more loyalty and time expended on the platform among audiences. The audiences recognize news content that is highly pertinent and attractive to their needs (Amponsah & Atianashie, 2024). Furthermore, AI-driven curation and collection enhance the audience's experience by offering personalized, related content while endorsing a complete comprehension of news proceedings (Rahman, 2024). Diakopoulos (2019) stated that AI algorithms are implemented to generate and deliver news content to audiences through personalized recommendations and curation. Using AI, personalized content recommendations, and focused advertising can augment audience engagement and raise revenues from advertisements. Innovative ML algorithms can investigate audience behavior to offer personalized news experiences, which leads to increasing subscription rates and advertisers' interest (Rahman, 2024). A recent study foresees substantial progress in audience engagement metrics like comments since AI personalization technologies are still progressing in personalized news delivery (Chen et al., 2024). A previous study reviewed the recommendation algorithms adopted by Netflix and discussed how AI-powered personalization effectively improves audience engagement and satisfaction. Further, it stressed the efficacy of ML tools and collaborative filtering in providing personalized content tailored to the audience's preferences, thereby improving their retention and watching time (Gomez-Uribe & Hunt, 2016). An earlier study investigated YouTube's recommendation mechanism through which AI algorithms choose and deliver video content to audiences. It confirmed that AI could actively predict audience interests grounded on watch history and behavior, which results in more engagement and satisfaction with the social platform (Davidson et al., 2010). Also, a recent study detected that news agencies using AI for personalization observed a 15% increase in digital subscriptions and a 20% rise in audience engagement (Garcia & Lee, 2023). Notably, Tiwari (2024) discussed about Bodo's study on European news outlets, which differentiated personalization by publishers and social platforms. Social platforms like Facebook utilize massive audience data to boost engagement for advertising with no editorial oversight. On the other hand, publishers personalize to vend subscriptions or display public grants, pointing to promote interest in quality news content.

Moreover, Chatbots are influential in providing personalized content and aid to customers in real-time. AI-driven chatbots can understand audience queries and deliver pertinent information, augmenting audience satisfaction and decreasing response times (Yella, 2024). A previous study emphasized how chatbots can create news that is highly personal in content and tone. It investigated the use of newsbots developed by the Australian Broadcasting Corporation (ABC). These newsbots function beyond automated headline delivery to deliver news in an informal format within private messaging services. They foster relaxed and close associations between audiences and journalists, elevating their

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news experience and forging new affairs (Ford & Hutchinson, 2019). Jones and Jones (2019) also strengthened the importance of news chatbots in encouraging conversational journalism approaches. In their qualitative study, the BBC's newsbots were documented for their pains in involving underserved audiences, mainly the youth; however, poor empirical evidence was observed on the success of these strategies. Besides, news agencies should strategically execute AI applications to boost content personalization and efficacy while being aware of ethical issues. They should choose AI applications that match their objectives and incorporate them to balance human creativity and decision (Abu Nasser & Abu-Naser, 2024).

1.7. Challenges faced by Journalism Using AI

Although AI technologies are extensively and effectively utilized in journalism, there are some challenges facing journalism using AI in their routine tasks. The risk of algorithmic bias is a significant challenge of AI in journalism, which leads to biased news reporting and impacts people's views and confidence. This impact may be due to training AI-based systems using massive datasets, which possess biases that the algorithms might unintentionally absorb and preserve (Rahman, 2024). Automated journalism depends on structured data since contemporary algorithmic solutions depend mainly on structured data to generate articles. Equally, the quality of data is very important because poor data quality will lead to low precise reporting (Kotenidis & Veglis, 2021). The varied training data and current assessment of AI-based systems are essential to overcome algorithmic bias, thereby warranting correctness and justice in news reporting (Jones & Smith, 2022). It is also mandatory for content creators to carefully assess and redraft AI-created content to check its accuracy and quality. However, this process might consume extra time and energy to retain trustworthiness and active audience engagement (Ota et al., 2024). Regarding data privacy and security, AI-based content generation often claims access to immense data volumes, increasing privacy and security snags. Content creators must warrant applying AI tools that adhere to data protection standards and follow necessary safety measures to protect user data. This process could comprise implementing encryption, anonymizing data, and performing regular reviews of data security guidelines (Ota et al., 2024). In data mining, algorithms are active in determining networks between multiple parameters; often, their outcomes can be worthless or even result in incorrect decisions (Latar, 2015). The causes for these wrong findings may differ from wrong queries to inappropriate data or AI tools. Therefore, AI tools are more capable, and the precise utilization of AI tools is crucial. Subsequently, journalists need enough knowledge of AI technologies to attain the anticipated outcomes (Kotenidis & Veglis, 2021). In addition, Ota et al. (2024) stated that content creators may need training to effectively utilize AI-driven technologies efficiently in the content production process, The training could embrace conducting online courses, participating in workshops/conferences, and teamwork with AI experts to adopt the best practices for AI-driven content generation (Ota et al., 2024).

Besides, news agencies must confirm that AI-powered tools are transparent and that their decision-making methods are comprehensible to the community and journalists. More transparency can strengthen trust in AI-generated content (Rahman, 2024). Williams and Davis (2023) highlighted the necessity for effective frameworks and guidelines to augment AI's responsibility in journalism (Williams & Davis, 2023). Concerning cost concerns, AI-driven tools can be affluent and more beneficial in content creation. However, content makers must match the cost of applying AI and its benefits in content creation. They should conduct a cost-benefit analysis and testing with different pricing tags to fix the most cost-effective option in automated content creation (Ota et al., 2024). Notably, job displacement may occur due to the fast growth of AI in journalism. The fear arises among journalists that AI might replace them in routine data analysis and news reporting tasks since its tools are more capable of handling multifaceted tasks. In addition to the employment, this technical move threatens the inherent worth of journalists' views and competence, which could be weakened in the shadow of automated journalism (Verma et al., 2024).

In summary, the ethical consequences of AI in journalism are immense, encircling problems like consent, the possibility of spreading false news, accountability, transparency, and data privacy (Rahman, 2024). The bias from AI algorithms can lead to biased news coverage and weaken the neutrality of

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journalism (O'Neil, 2016). A previous study stated that news agencies should achieve a balance between user privacy and personalized content. They should execute strong data protection measures and get clear consent from users to overcome these issues (Schmitz & Royal, 2018). A recent study stressed the requirement of governing frameworks to oversee the utility of AI in journalism (Chen et al., 2023). Therefore, warranting ethical standards in AI implementation is vital to preserving journalistic integrity (Rahman, 2024).

2. Conclusion

AI technologies are broadly applied in the field of journalism. These technologies have been implemented to generate news reports, improve the automated content creation, convert speech from interviews or debates to text, translate the news content covered from different linguistic areas, extract and analyze massive datasets, and perform fact-checking and verification, thereby preventing the spread of fake news, personalizing the content matching to audience's preferences that improve their engagement and satisfaction, and upsurge revenues and subscription rates. Nevertheless, AI journalism faces several challenges, such as algorithmic bias, data availability and quality, data privacy and security, training and education, transparency, and cost issues. Notably, adopting AI in journalism automates routine journalistic tasks, thereby improving efficacy and productivity and saving time and effort. However, journalists may fear that AI might substitute them, and their views and competence could also fade in the shadow of automated journalism. They must be fully equipped with knowledge and skills to detect and solve issues such data privacy, algorithmic bias, and the ethical aspects while using AI in journalism. On the other hand, news agencies should also execute strong data protection measures and transparent AI algorithms to tackle these challenges. There is continually a need for robust regulatory frameworks to oversee the value of AI in journalism. Also, confirming ethical standards in AI adoption is vital to preserving journalistic integrity.

Moreover, this study is limited to a general literature review, and further research could conduct a more comprehensive systematic literature review offering an in-depth understanding of this research topic. Qualitative studies can be conducted with journalists and top personnel of news agencies regarding the challenges from AI usage in journalism and strategies adopted by them to overcome those challenges. In the future, the perception of journalists from different parts of the globe towards AI applications in journalism can be revealed.

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