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Knowledge graph analysis of artificial intelligence research topics in the field of Journalism and Communication in the past decade

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Abstract

Over the past decade, the domain of journalism and communication has witnessed an exponential trajectory in the application research of artificial intelligence (AI) technology, encompassing a myriad of facets within the field and achieving notable advancements. The present study employs a bibliometric methodology to systematically review and synthesize the pertinent scholarly findings. Utilizing the China National Knowledge Infrastructure (CNKI) as the primary data repository, and leveraging the analytical capabilities of the CiteSpace bibliometric tool, this paper conducts a comprehensive visualization analysis of the foundational landscape, focal research areas, emergent trends, and key thematic constructs within the national AI research corpus pertaining to journalism and communication for the past ten years. The objective of this analysis is to furnish a valuable reference for scholars and practitioners engaged in the field of AI within the realm of journalism and communication.

Key words: Artificial intelligence technology; CiteSpace; Knowledge grah; Co-occurrence cluster analysis

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1. Research objects and methods

This study employs a bibliometric approach, leveraging the CiteSpace tool—a sophisticated bibliometric software engineered by American scholars—to investigate the research trends in the field. CiteSpace, which is constructed on the Java platform, facilitates the analysis of multivariate, temporal, and dynamic complex networks within a specific research domain. It enables the elucidation of the interrelational structure and evolutionary trajectory of the research landscape. The utilization of this software has culminated in the generation of a comprehensive and visually enriched scientific knowledge map. The present paper conducts a visual statistical analysis of the research trajectory of artificial intelligence (AI) technology within the discipline of journalism and communication from the years 2014 to 2023. The dataset for this analysis was derived from the China National Knowledge Infrastructure (CNKI) database, utilizing the advanced search functionality. The search was refined by specifying "artificial intelligence technology" as the thematic focus and constraining the temporal scope to the aforementioned period. To ensure the scholarly integrity of the research, the source category was narrowed down to "Peking University Core journals" and "Chinese Social Sciences Citation Index" (CSSCI). This stringent selection process yielded a corpus of 587 pertinent academic works, which were subsequently exported and constituted the sample dataset for CiteSpace analysis. Subsequent to this, a keyword co-occurrence and cluster analysis were performed to delineate the focal points and emergent trends in AI technology research within the realm of journalism and communication. Ii. Analysis of research status.

1.1Analysis of the number of publications

Upon visual examination of the sample literature dataset, the temporal evolution of scholarly publications pertaining to artificial intelligence (AI) within the discipline of journalism and communication from 2014 to 2023 is delineated, as depicted in Figure 1. A discernible upward trajectory in the proliferation of application research is observed, signifying a pronounced growth trend. Prior to 2017, the corpus of related scholarly works was relatively scarce, with fewer than 50 publications recorded, yet this period already foreshadowed the burgeoning potential of AI applications within the field. The initial growth during this phase was gradual. Post-2017, however, witnessed an abrupt escalation in the publication count, culminating in a peak of 134 publications in 2019. This surge underscores the burgeoning interest and intensive research focus on the application of AI within the news communication sector. Subsequently, from 2020 to 2021, there was a plateau in the publication rate, indicating a stagnation in the growth of scholarly output. This period was followed by a

decline in the number of published articles, suggesting a potential retrenchment in the research momentum.

With respect to the thematic content of published works, the scholarly discourse on artificial intelligence (AI) technology within the realm of news communication predominantly encompasses areas such as natural language processing (NLP), exemplified by intelligent recommendation systems, sophisticated search algorithms, and automated content generation methodologies. Furthermore, the scope extends to encompass the realms of sentiment analysis and the convergence of media within the news communication sector. In a general assessment over the past decade, there has been a marked escalation in the volume of scholarly publications dedicated to AI within the field of journalism and communication, indicating a pronounced research interest and extensive scrutiny. Upon examination of the temporal evolution of content, it is evident that the research foci and trajectories of AI within the news communication domain are in a state of dynamic flux, in tandem with the progressive advancements and iterative enhancements of AI technology. The application of AI within the news communication industry is anticipated to broaden and deepen. Emerging technologies such as AI-generated content (AIGC), ChatGPT, and generative AI continue to be at the forefront of ongoing scholarly inquiry and investigative fervor within the news communication field, projecting their status as enduring subjects of interest and research in the foreseeable future.

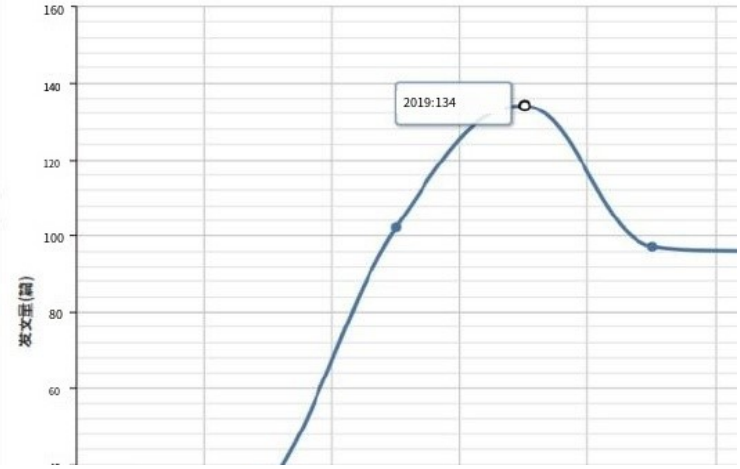

Figure 1 Annual publication trend of related research from 2014 to 2023

1.2 Analysis of publishing institutions and regions

Based on the statistical analysis of contributing institutions, the Communication University of China emerges as the most prolific publisher, with a total of 58 scholarly articles contributed to the field. This is followed closely by the Renmin University of China and Tsinghua University, each of which has contributed over 30 research papers. Additionally, Wuhan University, Beijing Normal University, Fudan University, and the School of Journalism and Communication at the Chinese Academy of Social Sciences have all made significant contributions, with each institution publishing more than 10 papers. Notably, among these, eight institutions have surpassed the threshold of 10 publications, with the Communication University of China, Renmin University of China, and Tsinghua University each exceeding 30 publications, thereby establishing themselves as high-yield research entities within the domestic sphere of artificial intelligence technology research in journalism and communication. Upon examination of the typology of publishing entities, it is observed that the primary contributors are academic institutions specializing in journalism. This suggests a current homogeneity in the types of institutions engaged in AI technology research within the field, predominantly centered around higher education establishments, with a notable absence of participation from non-academic entities such as corporate bodies and research organizations. Regarding the collaborative aspect of research institutions, while there is evidence of interdisciplinary, inter-institutional, and cross-regional collaboration, it is observed that the majority of research entities engage in limited cooperative efforts with other institutions.

Upon the construction of a co-occurrence knowledge graph delineating the inter-institutional relationships among publishing entities within the sphere of domestic news communication research on artificial intelligence technology—as depicted in Figure 3—the findings reveal a modest network. The graph comprises a limited number of nodes (197) and a sparse quantity of interconnections (123), culminating in a low overall network

density of 0.0064. These observations suggest a fragmented distribution of AI research institutions within China, characterized by a dearth of inter-institutional collaboration. The majority of collaborative efforts appear to be confined to academic institutions, with weak ties between entities. Consequently, there is an absence of a robust, large-scale academic research cooperation network in this domain.

From the perspective of spatial geographical distribution, the geographical distribution of research papers on artificial intelligence technology in the field of journalism and communication in China has a trend of gradual expansion from point to surface, showing the characteristics of high concentration and diversification. Its concentration is reflected in the fact that related research is mainly concentrated in economically developed and technologically advanced areas. And diversification is reflected in the fact that different areas have different focuses, forming research themes with regional characteristics.

An analysis of the publishing institutions reveals that Beijing, Shanghai, Guangdong, and Jiangsu are the principal hubs for research on artificial intelligence (AI) technology within the field of journalism and communication in China. The volume of scholarly publications emanating from these regions constitutes an overwhelming majority of the national research output in this domain. Notably, Beijing stands out as a focal point for AI research within the realm of journalism and communication, with a higher concentration of research areas and institutions. This prominence can be attributed to several factors. Beijing is home to numerous comprehensive universities and colleges that specialize in journalism and communication, which fosters a robust academic environment. Additionally, the city's advanced state of AI technology development and its abundant media resources create a conducive ecosystem for scholarly inquiry. These elements collectively provide an advantageous milieu for researchers to delve into the evolution and application of AI technology in the field of journalism and communication.

Regions such as Zhejiang, Hubei, and Sichuan are also actively engaged in the research of artificial intelligence (AI) technology within the field of journalism and communication, leading to the emergence of research topics with distinct regional attributes. For instance, Zhejiang has achieved significant advancements in the areas of intelligent recommendation and intelligent question-answering systems. Meanwhile, Hubei has demonstrated a keen interest in the exploration of AI applications within the realms of media monitoring and public opinion analysis. Furthermore, an increasing number of other regions are progressively integrating themselves into the research domain of AI technology in news communication, yielding a spectrum of research findings. Collectively, over the past decade, the geographical distribution of scholarly publications on AI technology in the field of journalism and communication has exhibited a pattern characterized by both concentration and diversification, with varying emphases across different regions.

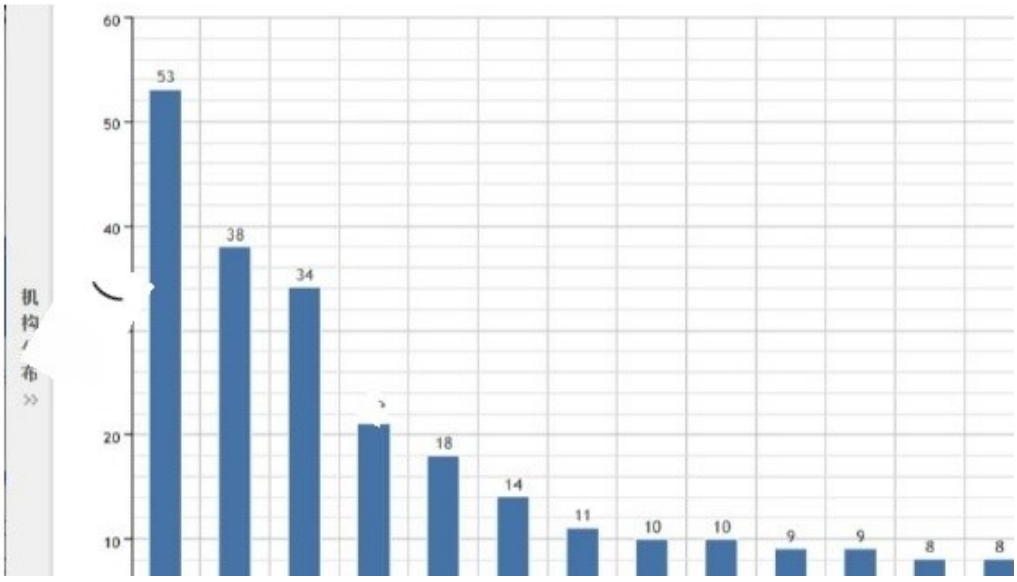

Figure 2 Research institutions with more than 6 articles published by artificial intelligence technology in the field of journalism and communication from 2014 to 2023

Table 1 Top 10 institutions in the field of artificial intelligence in the field of journalism and communication from 2014 to 2023

Serial number	Research institu
1	Communication Universi
2	Renmin University c
3	Tsinghua Univer
4	Wuhan Universit
5	Beijing Normal Uni
6	Fudan University
	Institute of Journalism and Communication, Chine

Figure 3 The co-occurrence graph of the institutions publishing artificial intelligence technology research in the field of journalism and communication

1.3 Distribution of main authors

Among the cohort of the top 10 authors as depicted in Figure 4, Chen Changfeng has been the most prolific, contributing 16 articles to the field. Additionally, both Yu Guoming and Zhang Hongzhong have each authored more than five articles. Furthermore, an Internet-based analysis reveals that 17 individuals have published three or more articles.

Utilizing CiteSpace software, the importation and subsequent analysis of literature research data on artificial intelligence technology within the domain of news communication from 2014 to 2023 were conducted. With the temporal resolution set to one year and the node type parameter designated as 'author,' an author cooperation graph was generated. This graph elucidates the collaborative relationships among authors. Within the author cooperation network, the most extensive collaboration network is formed by Chen Changfeng and Yu Guoming, along with other authors. Notable collaborations are observed between pairs such as Huang Chuxin and Tang

Xujun, Wang Dan, Hu Yu, Yuan Chunjie and Wang Wei, and Liu Na, Qiu Luyi, and Ji Yajun. Additionally, several two-person collaborative networks are also identified. Yu Guoming exhibits the highest degree of cooperative engagement, with Chen Changfeng following closely behind. From a quantitative perspective, the ratio of co-authored articles to individually authored articles stands at 0.0026, indicating a relatively low collaborative index. In conclusion, the overall network cooperation density within the scholarly research of artificial intelligence technology in the field of journalism and communication warrants enhancement.

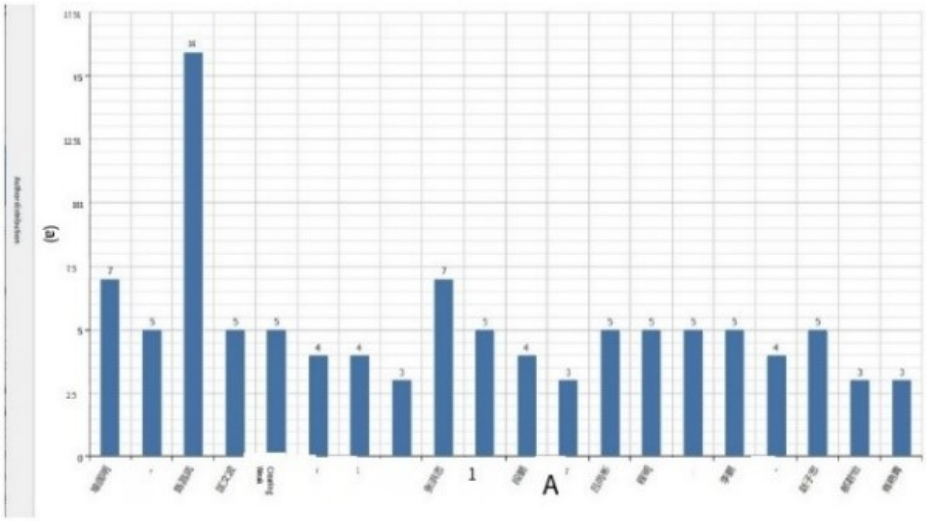

FIG. 4 Research author collaboration network

Figure.4 Collaborative network of study authors

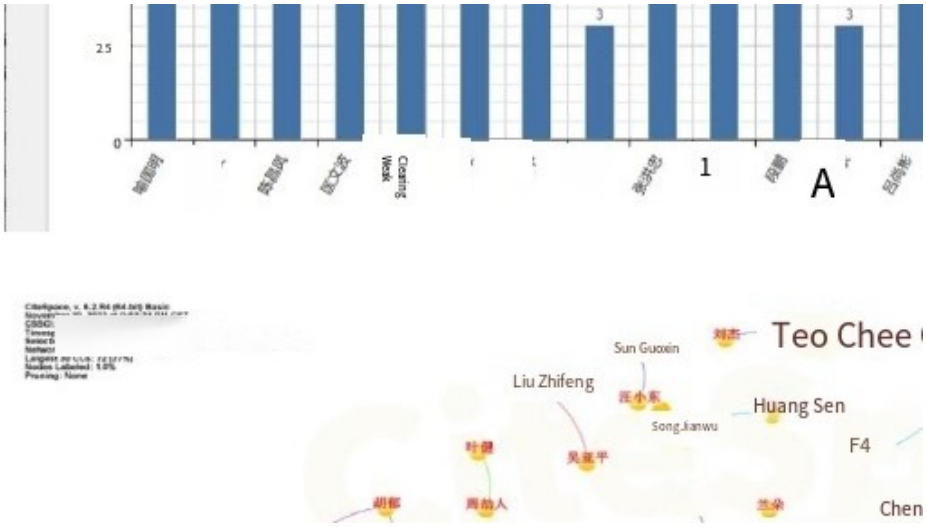

Figure 5 Research author collaboration network

2. Research hotspots and trend analysis

2.1Keyword co-occurrence

Utilizing CiteSpace software, a comprehensive extraction of keywords from the scholarly literature pertaining to artificial intelligence technology within the field of news communication from 2014 to 2023 was conducted. The temporal parameter was set to an annual interval, facilitating the generation of a keyword clustering map. The resultant graph depicted a network comprising 265 nodes and 517 edges, with a network density of 0.0148, as illustrated in Figure 6. Through keyword co-occurrence analysis, it was discerned that the focal points of

research on artificial intelligence technology in China's news communication sector predominantly revolve around high-frequency keywords, including "artificial intelligence," "intelligent media," "intelligent communication," "media convergence," "news production," and "big data." The analysis also delineated the interconnections among these keywords, as represented in Figure 6.

Keyword frequency serves as an indicator of the intensity of research interest in a particular area over a specified period. The frequency distribution of keyword nodes, which highlights the prevailing research themes, is presented through CiteSpace and detailed in Table 1. Among the identified keywords, those with the highest frequency were as follows: "artificial intelligence" (N=233), "intelligent media" (N=34), "media convergence" (N=22), "news production" (N=22), "big data" (N=17), "intelligent technology" (N=15), "news communication" (N=14), and "algorithm" (N=14).

As presented in Table 2, the research graph of artificial intelligence technology within the field of journalism and communication features nodes with high centrality, specifically "artificial intelligence," "intelligent media," and "intelligent communication." These nodes exhibit a centrality score exceeding 0.1, signifying their pivotal role as conduits that interconnect other nodes across related research domains. The scholarly community has predominantly concentrated its efforts on these three pivotal areas, which serve as robust conduits within the overarching network knowledge graph. Furthermore, the research on artificial intelligence technology encompasses high-frequency keywords such as "intelligent technology," "algorithm," "human-computer collaboration," and "news communication." Notably, the centrality indices for "media convergence," "big data," "algorithm," and "human-machine collaboration" are also elevated, suggesting a substantial expansion in the application scope of artificial intelligence technology amidst the digitalization wave.

Based on the graphical analysis of these keywords, the author delineates the following as the significant and burgeoning topics within the research of artificial intelligence technology in the field of journalism and communication.

2.1.1. Artificial intelligence

The keywords central to the discourse on artificial intelligence predominantly encompass terms such as "journalism," "media transformation," "media industry," "traditional news," and "discourse power." It is evident that as artificial intelligence reshapes the news industry and potentially the very format of news dissemination, the traditional media sector confronts critical decisions regarding transformation and risks losing control over discourse power. In the age of artificial intelligence, the primary agents of mainstream ideological discourse may extend beyond human voices. Research in this domain has highlighted that within the epoch of intelligent media, social media platforms continue to provoke the expressive desires of participants. This dynamic has, to a certain extent, reinvigorated the potency of discourse, particularly enhancing the persuasive power of traditional news narratives. The role of artificial intelligence in augmenting discourse power is becoming more pronounced and profound, solidifying the persuasive potency of AI-driven communication strategies.

2.1.2. Smart propagation

Key terms within the domain of intelligent communication encompass a spectrum of ethical considerations, notably including "news ethics," "technical ethics," "communication strategy," "communication ethics," and the concept of the "ethical subject." Within the contemporary landscape of new media, scholars in the field of news communication are particularly attuned to the transformative impact of artificial intelligence on the production and dissemination of news. While the content generated by AI has been recognized for its potential to enhance the efficiency of news production, the extensive deployment of such technology also engenders ethical dilemmas and the risk of ethical anomie within the journalistic sphere. Consequently, it becomes imperative for the consumers and purveyors of these technologies to engage deeply with the interplay between technological advancement and ethical standards. A judicious balance must be struck between the leveraging of technological innovations and the upholding of journalistic integrity and ethical norms.

2.1.3. Smart Media

In the realm of smart media, the pivotal keywords include "algorithm recommendation," "information cocoon effect," "algorithmic bias," "ethical values," and "media ethics." Within the epoch of intelligent media, artificial intelligence, as a burgeoning agent of communication, has accrued significant influence over discourse. Concurrently, the phenomenon of algorithmic bias has become an inevitable concern. Academic inquiry has increasingly focused on the replication of biases based on gender, race, religion, and other factors within the algorithms, mirroring societal discrimination in the collection, creation, and distribution of information. The term "information cocoon effect" describes the self-reinforcing informational silos that emerge from the content selectively recommended by AI-driven algorithms to users. To address these challenges, a multifaceted approach is essential—one that employs a diverse array of perspectives and leverages both technological and legal mechanisms to impose constraints and facilitate governance.

2.1.4. Media Convergence

The lexicon of media convergence encompasses critical terms such as "content production," "human-computer interaction," "communication modalities," "usability," and "human-computer symbiosis." In the epoch of intelligent media, it is imperative for journalists to strike a balance between the utilization of intelligent technology and the adherence to journalistic ethics. Moreover, fostering a dynamic, two-way interaction between these domains is essential. Against the backdrop of media convergence, the interplay and dialogue between humans and machines have redefined the interrelations between media and audience, as well as between machines and their users, rendering these connections more intricate. Media convergence, in essence, represents the synergistic integration of human, machine, and environment. Consequently, in the age of intelligent communication, the transition from mere mechanical utilization to a state of human-machine communion has become a matter of significant importance.

2.1.5. Smart News

Key terminologies within the domain of intelligent news production notably encompass "AI anchor," "value co-creation," "human-computer symbiosis," and "subjectivity." As artificial intelligence technology advances rapidly and AI entities increasingly assume a prominent role as autonomous agents in discourse, AI anchors have risen to prominence, meeting the evolving demands of our times. AI anchors, underpinned by digital and network technologies, fulfill the functions of hosting and broadcasting, thereby exerting a profound impact on the media industry, particularly on traditional anchors. In this milieu, the limitations of traditional media anchors regarding their compatibility with AI-driven platforms are becoming increasingly apparent, while the benefits of integrating AI anchors with artificial intelligence platforms are gaining prominence. This paradigm shift is poised to have a considerable impact on the organizational and production processes within the traditional media industry, necessitating a reassessment of talent requirements and a strategic reallocation of resources.

2.1.6.Human-machine collaboration

The lexicon of human-machine collaboration prominently features concepts such as "human-machine relationship," "ethical anomie," "instrumental rationality," and "value rationality." In the contemporary epoch, marked by the swift progression of scientific and technological advancements, humanity has ventured into an era characterized by human-machine symbiosis. Consequently, the dynamics of human-machine relationships have ascended to the forefront of journalistic discourse. Within the realm of journalism and communication, the advent of artificial intelligence has catalyzed the evolution of a society predicated on "human-machine collaboration." In the realm of intelligent media, the synergistic role of machines in connecting humans with data resources is becoming increasingly pivotal. This synergy serves to augment and amplify human intellect and capabilities in the domain of news production. Despite the potential pitfalls associated with the human-computer collaborative content production model, such as emotional deficit, algorithmic limitations, and ethical quandaries, it is widely anticipated that this mode of collaboration will represent the emergent norm in news production in the new era. This paradigm shift is expected to enhance the efficacy and precision of news creation and dissemination processes.

Table 2 Top keywords of artificial intelligence technology research centrality

sort	Keywords	Frequency	
1	Artificial Intelligence	233	
2	Smart Media	34	
3	Smart communication	24	
4	Media Fusion	23	
5	News Production	22	
6	Big Data	17	
	Smart		

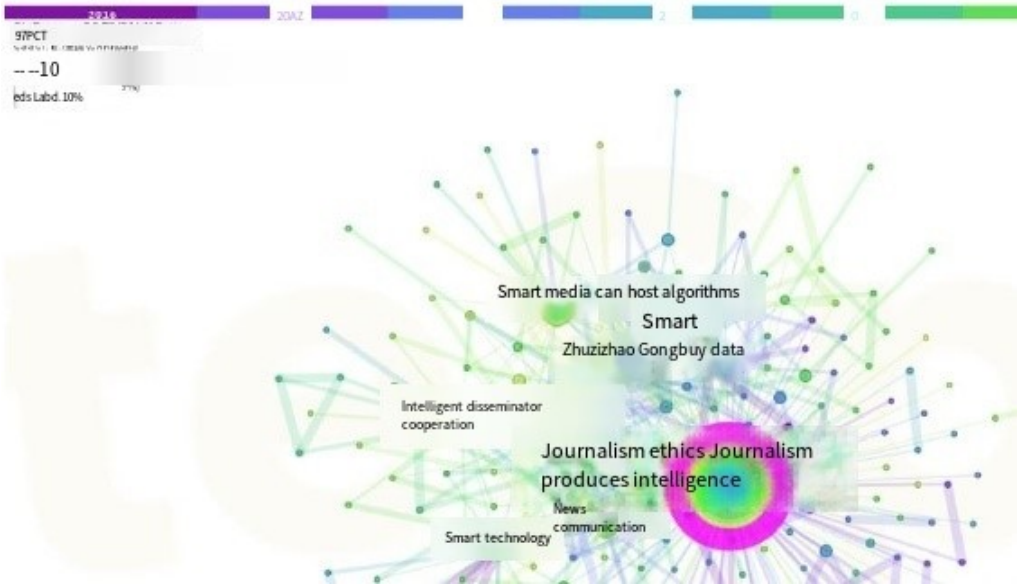

Figure 6 The co-occurrence graph of keywords in artificial intelligence technology research

2.2 Keyword clustering analysis

Utilizing the keyword co-occurrence graph as a foundation, this study employs the Log-Likelihood Ratio (LLR)

algorithm to derive the keyword clustering map for domestic research in the field of news communication pertaining to artificial intelligence technology from 2014 to 2023, as depicted in Figure 7. Figure 7 provides a more discernible representation of the research status, hotspots, and trajectories within this academic domain. The modularity of the keyword cluster map is denoted by Q=0.5386, and each cluster exhibits a Silhouette value exceeding 0.5. Furthermore, the Weighted Mean Silhouette (S) is calculated at 0.8986, surpassing the threshold of 0.7. These metrics suggest robust clustering quality, thereby conferring significant research value. The keyword clustering graph is detailed in Figure 8, where the nine thematic clusters are sequentially labeled as follows: #0 for artificial intelligence, #1 for intelligent communication, #2 for intelligent technology, #3 for intelligent media, #4 for news production, #5 for value rationality, #6 for media convergence, #7 for content production, and #8 for artificial intelligence anchor.

Within this framework, the cluster labels for content production, value rationality, smart media, and news production exhibit intersections, while the labels for intelligent communication and intelligent technology demonstrate convergence. This pattern of interconnectivity suggests that the focal points of domestic artificial intelligence research in the field of news communication are centered on artificial intelligence, its related technologies, and the transformative impact of artificial intelligence on content production and media ecology.

Based on the variance in research hotspots within the domain of domestic artificial intelligence applied to journalism and communication from 2014 to 2023, the study has distilled nine distinct topics into three overarching thematic clusters. The first category encompasses Cluster #4, designated as 'news production,' Cluster #6, 'media convergence,' Cluster #7, 'content production,' and Cluster #8, 'artificial intelligence anchors.' Within Cluster #4, 'news production,' the primary focal points are 'journalism' and 'big data.' For Cluster #6, which centers on media convergence, keywords such as 'mainstream media,' 'intelligent media era,' and 'intelligent' are frequently cited, representing both hot keywords and research hotspots within this thematic cluster. Cluster #7, identified by 'content production,' features hot keywords including 'artificial intelligence technology,' 'content production,' and 'human-computer collaboration.' Cluster #8, characterized by 'artificial intelligence anchors,' sees recurrent emphasis on keywords such as 'AI anchor' and 'subjectivity.' These clusters collectively represent the transformative impact of artificial intelligence technology on the productivity and operational dynamics of the news and communication industry. Cheng Ming and Cheng Yang have posited that within the context of the integrated development of intelligent technology and the advent of intelligent media, a novel media form emerges—an 'intelligent catalyst'—that facilitates and propels collaborative human-computer advancement.

Category 2 is characterized by Cluster #5, which is predominantly defined by the thematic focus on 'value rationality.' Within this cluster, the keyword 'value rationality' is accompanied by other terms of high frequency, including 'available line' and 'information cocoon.' These terms have emerged as focal points and research hotspots within the sphere of value rationality. This cluster addresses the influence of artificial intelligence technology on the superstructure of the news communication field, provoking critical discourse on moral and ethical considerations. Chen Changfeng and Shi Ze have theorized that the convergence of technological advancement and value rationality can endow artificial intelligence with a more profound reflection of human agency and core values values.

Category 3 encompasses Cluster #1, designated as 'intelligent communication,' Cluster #2, 'intelligent technology,' and Cluster #3, 'intelligent media.' Cluster #1, 'intelligent communication,' is distinguished by key terms such as 'international communication,' 'information communication,' and 'news communication.' Cluster #2, identified by 'intelligent technology,' features prominent keywords including 'technical theory' and 'intelligent technology.' Cluster #3, characterized by 'smart media,' highlights keywords such as 'smart media,' 'algorithm,' and 'media theory.' Collectively, these clusters address the influence of artificial intelligence technology on the dynamics of production relations within the field of news communication. Jiao Yongqin has conducted an analysis on the 'intelligent communication revolution,' a phenomenon precipitated by large-scale model media exemplified by ChatGPT, and its implications for the field of news communication. Furthermore, Xu Yanling has advocated for the integrated application of diverse intelligent communication technologies to foster the profound advancement of international communication.

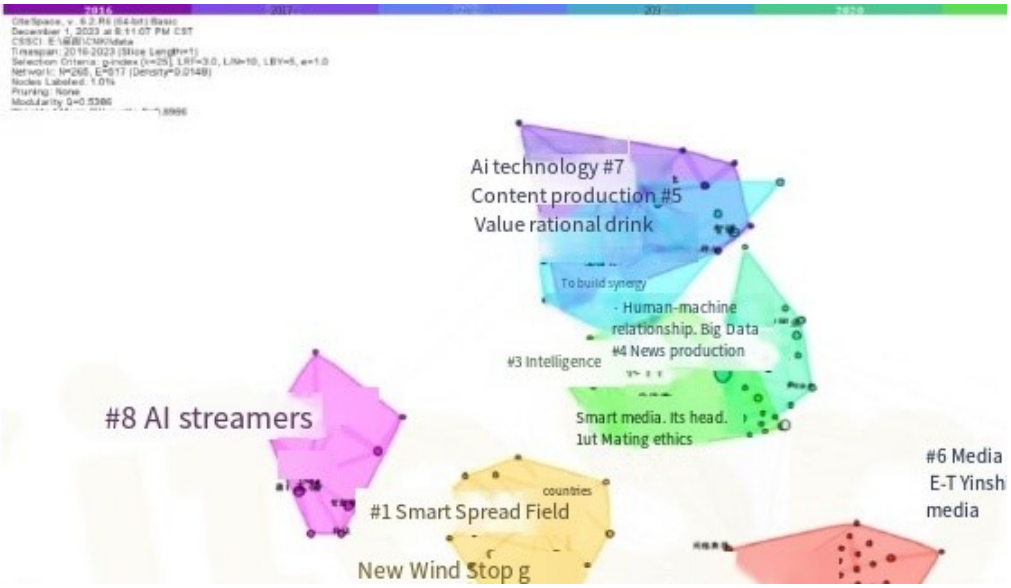

Figure. 7 Keyword clustering map

2.3Timeline analysis of keyword clustering

The temporal analysis of keyword clustering elucidates the research significance of academic focal points within defined temporal frames. As depicted in Figure 9, the clusters #0 'artificial intelligence,' #2 'intelligent technology,' #4 'news production,' #7 'content production,' and #8 'artificial intelligence technology' exhibit extended research trajectories, denoting their enduring research value. These clusters are thus poised to serve as persistent research hotspots and directions for long-term scholarly inquiry. Conversely, the clusters #1 'intelligent communication,' #3 'intelligent media,' #5 'value rationality,' and #6 'media convergence' have shorter research durations, necessitating further in-depth exploration.

Upon synthesis of the research hotspots presented in Figures 7 and 8, it is observed that the research focal points and trajectories of domestic artificial intelligence within the field of news communication from 2014 to 2023 undergo variations and manifest at different stratums. This evolution can be delineated into three distinct phases.

The inaugural phase spans from 2016 to 2018, during which research hotspots and directions were predominantly centered on the conceptual ramifications of human-machine synergy and the integrated development of media, catalyzed by artificial intelligence technology. The emphasis was on the transformative impact of artificial intelligence on the productivity of the news communication industry, shifting from a human-centric paradigm to one of human-machine collaboration. The principal topics of interest included 'artificial intelligence anchor,' 'content production,' 'media integration,' and 'human-computer relationship.'

The subsequent phase, encompassing the years 2019 to 2020, saw research hotspots and directions gravitating towards the influence of artificial intelligence technology on the superstructure of the news communication field. This shift precipitated contemplation on moral and ethical dimensions. The prevailing topics during this period were 'news production,' 'value rationality,' 'media ethics,' and 'big data.'

The final phase, from 2021 to 2023, witnessed research hotspots and orientations concentrating on the

implications of artificial intelligence technology on the relations of production within the information communication sector. This phase ignited discussions on 'intelligent media' and 'intelligent communication,' with the main hotspots yet to be detailed in the original text.

The topics focus on: smart communication, smart technology, smart media, algorithms, algorithmic bias, international communication, etc.

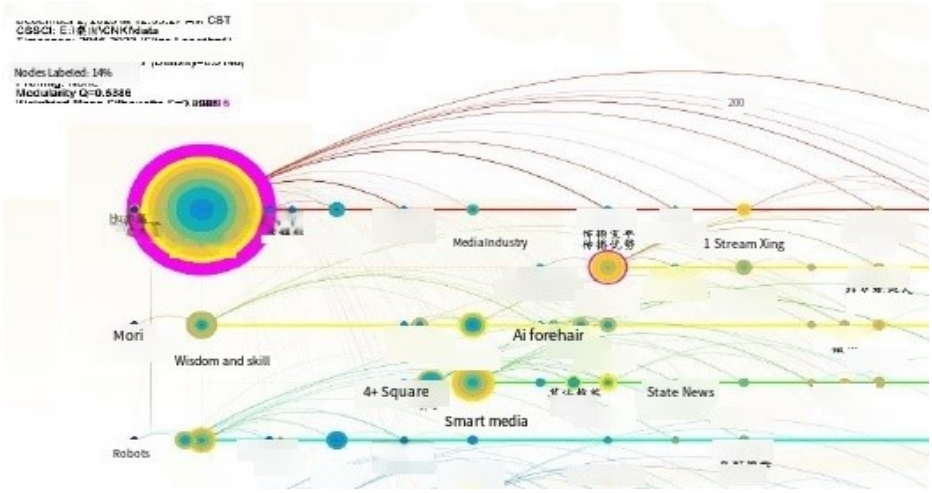

Figure 8 Time zone map of quantitative research hotspots

2.4 Keyword emergence analysis

The analysis of keyword emergence is instrumental in delineating the rapid evolution of a research focal point within a brief temporal span. The keyword emergence analysis chart provides a visual representation of the inception and culmination of keyword prominence, as well as the intensity of their emergence. Employing CiteSpace to generate the keyword emergence map for domestic research in artificial intelligence technology within the field of news communication from 2014 to 2023 offers an intuitive depiction of the research trajectory in this domain. The keyword emergence analysis, conducted on a corpus of 587 articles indexed in the China National Knowledge Infrastructure (CNKI), yielded seven emergent keywords as depicted in Figure 9. It is evident from Figure 9 that the primary focus of domestic artificial intelligence technology research in the field of information communication in 2017 was concentrated within the news industry. Subsequently, in 2018, the advent of algorithmic interventions marked a significant shift, with research from 2018 to 2021 predominantly centered on themes such as the era of intelligent media, intelligent communication, information communication, intelligence, and smart news. This underscores the profound influence of artificial intelligence technology on both the production and communication paradigms within the news communication sector.

Since the year 2021, the metric of emergence intensity for the field of 'intelligent communication' has been recorded at 3.28, representing the apex within the comparative spectrum of the figure. This notable prominence signifies that 'intelligent communication' has ascended to the forefront as a pivotal research trend in the domain of artificial intelligence technology within the field of news communication. Scholars Fang Xingdong and Zhong Xiangming posit that the advent of intelligent communication heralds a significant opportunity to catalyze a paradigmatic shift in the informational and communicative infrastructure of human society.

Figure 9 Keyword emergence diagram ·

3. Research conclusions

Employing CiteSpace software, this study presents a visual analysis of the research hotspots, orientations, and trends within the corpus of 588 Chinese scholarly articles on domestic artificial intelligence technology within the field of information communication, as indexed from 2014 to 2023 in the China National Knowledge Infrastructure (CNKI). The analysis yields the following insights:

Firstly, in terms of publication volume, artificial intelligence technology has established itself as a significant research hotspot in the domain of domestic news communication. The publications from 2014 to 2023 demonstrate a consistent upward trajectory, a pattern attributable to the ongoing advancements and deep integration of artificial intelligence technology within the news communication sector.

Secondly, examining the research status of contributing authors reveals a pronounced trend towards collaborative research endeavors in the field of journalism and communication. The convergence of "communication + artificial intelligence" is increasingly evident, signifying a paradigm where interdisciplinary cooperation and profound collaboration are imperative for the research to flourish. The analysis of domestic authors' research status in the field of journalism and communication offers valuable guidance for researchers in identifying potential collaborators and research institutions. It is noted that there is a necessity for enhancing the overall network cooperation density, as indicated by the current coefficient of 0.0026.

For instance, media entities, including public opinion big data experimental facilities and the Xinhua News Agency's New Media Center, are well-positioned to engage in cooperative research initiatives with academic institutions. By integrating the practical expertise of media organizations with the theoretical research advancements from colleges and experimental institutions, a synergistic approach can be realized to foster new breakthroughs in the research of artificial intelligence technology within the field of news communication.

Thirdly, the thematic focus of publication keywords has evolved significantly. The research trajectory commences with an examination of the synergistic relationship between the integration and advancement of artificial intelligence technology and the field of journalism and communication. This is followed by an exploration of the ramifications of artificial intelligence on the superstructure of journalism and communication, which has provoked considerations of moral and ethical dimensions. Subsequently, the research has delved into the impact of artificial intelligence on the production relationships within the journalistic sphere, stimulating discourse on the concept of intelligent media. The research paradigm in the field of journalism has thus transitioned from a technocentric approach to one that is increasingly concerned with moral, ethical, and relational constructs, marking a substantial shift and indicative of a research domain that is deepening in complexity.

Fourthly, in the realm of research trend analysis, the emergence intensity of 'intelligent communication' has been quantified at 3.28 since 2021, signifying its status as a burgeoning research trend in the field of news communication. The inception of intelligent communication research is traced back to 2018, with a primary focus on areas such as intelligent communication, intelligent technology, and intelligent media. Notable milestones include the establishment of the People's Daily AI Editorial department, the development of China's premier media AI platform, "Media Brain," by Xinhua News Agency, and the innovative applications of the AI

cloud editing platform by the China Media Group. These advancements, which facilitate the intelligent transcription of manuscripts and the sophisticated segmentation of content, have revolutionized traditional production dynamics and have emerged as pivotal topics of inquiry for scholars in the field.

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