



Thematic Evolution and Knowledge Landscape of AI and New Media Research (2016–2026): A Bibliometric Analysis Based on CiteSpace

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Abstract. The present moment is of particular significance for AI and new media research, as the field undergoes substantial technological transformation and paradigm reconstruction. Anchored in the Technology–Organization–Environment (TOE) framework and employing CiteSpace bibliometric visualization, the study analyzes 168 core CSSCI articles from 2016 to 2026. The findings reveal three developmental phases: the rapid emergence phase (2016–2018), the in-depth consolidation phase (2019–2023), and the renewed growth phase (2024–present). Research trends have undergone a sequential shift, moving initially from "artificial intelligence" and "central kitchen" to "short-form video," and most recently to "large language models." Four core thematic domains have come to the fore: the transformation of human-machine relations, the systemic reform of mainstream media, technology empowerment and industry restructuring, and the governance of intelligent communication. Theoretically, this study delineates the evolutionary characteristics of human–machine relations over the decade and validates the applicability of the TOE framework to intelligent communication research. In practice, it provides a reference point for tracking academic frontiers, guiding media digital transformation, and optimizing intelligent governance policy.

Keywords: artificial intelligence; new media; CiteSpace; bibliometric visualization

1 Introduction

In 2025, the breakthrough achievements in open-source large language models (LLM) like DeepSeek marked a new stage of generative AI [1]. AI is evolving from an assistive tool to a "smart intermediary" capable of autonomous judgment and action. Research topics in AI and new media increasingly exhibit convergence and cross-disciplinary penetration, underscoring the need for a holistic grasp of the field's knowledge landscape and evolutionary trajectory.

Bibliometric methods offer considerable value for addressing this gap. This study employs CiteSpace to analyze CSSCI literature from 2016 to 2026, addressing three research questions: (1) Into what developmental phases can this field be divided? (2)

How have research hotspots evolved, and what factors have driven these shifts? (3)
What major thematic domains constitute this field?

2 Literature Review

Existing research from 2016 to 2026 can be organized around four thematic clusters. As AI evolves from an assistive tool to an "intelligent intermediary", human-machine relationships have undergone profound reconstruction. Studies examine both human-machine interaction reconfiguration [2] and paradigmatic transformations toward a "symbiotic mindset" [3].

Technological advancement generates governance challenges, including algorithmic security risks intensifying "filter bubbles" [4], technological ethics concerns [5], and platform regulation issues requiring a shift from textual compliance to practical efficacy [6].

Mainstream media transformation has consistently attracted attention. Liu Peng [7] characterizes systemic reform as a top-level design response, while Zhu Hongjun et al. [8] note persistent systemic predicaments intensified by AI-era pressures.

Driven by technology, the new media industry undergoes iterative reinvention, transitioning toward a "large model+" ecosystem [9]. Nevertheless, extant research consists predominantly of qualitative analyzes, with few studies systematically revealing the field's overall structural evolution.

3 Research Design

Using CNKI's advanced search with CSSCI as the data source (2016-2026), subject terms "new media" and "AI" with exact matching, restricted to "Journalism and Communication," an initial corpus of 241 articles was retrieved. Following manual screening, 168 articles were selected. Data were exported in RefWorks format and imported into CiteSpace for keyword co-occurrence, clustering, and burst detection analysis.

4 Findings

4.1 Research Trajectory

Annual Publication Trend Analysis.

From 2016 to 2026, cross-disciplinary research exhibited a wave-like pattern with three distinct phases (see Fig. 1).

Phase1 (2016-2018) was characterized by rapid emergence. Annual publications surged from 4 (2016) to 34 (2018), forming the first peak. In 2016, China's AI industry grew 43.3%, termed "China's Year Zero of Artificial Intelligence" [10], prompting scholars to integrate AI into communication studies.

Phase2 (2019-2023) represented a period of in-depth consolidation. Publication volume declined from 31 (2019) to 9 (2023), but research depth increased, shifting from

broad-horizon forecasting to substantive subjects including algorithm ethics, digital platform governance, and human-machine collaboration.

Phase3 (2024-present) has seen renewed growth. Annual publications showed a V-shaped recovery to 16 (2024) and 18 (2025), concomitant with generative AI proliferation. The rise of DeepSeek in 2025 galvanized discussion on localized AI application.

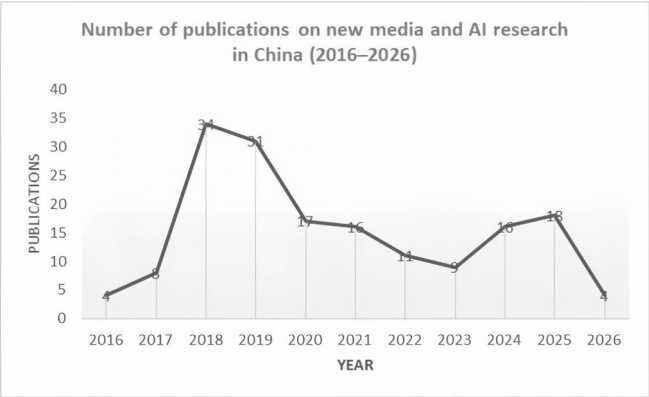


Fig. 1. Annual Publication Trend in Domestic New Media and AI Research (2016–2026)

4.2 Thematic Distribution

Keyword Co-occurrence Map.

The present study utilized the CiteSpace software to identify keywords that appeared on more than three occasions. This process generated a keyword co-occurrence map illustrating the centrality and prominence of key terms within the research domain(see Fig. 2). The map clearly shows that “artificial intelligence” occupies the central position with the most prominent node, indicating its pervasive presence across all dimensions of research in this domain. Adjacent high-frequency keywords, including “media convergence,” “new media,” “big data,” and “mainstream media” reflect the scholarly community’s particular concern with how technology is embedded in the media convergence process and how it activates the digital transformation of mainstream media. A secondary research cluster has been identified, comprising the keywords “all-media,” “intelligent communication,” and “internet.” Furthermore, while “short-form video” “intelligent media” and “central kitchen” manifest as smaller nodes, their dense connections to core nodes serve to underscore their significance as pivotal research directions. When considered as a whole, the academic landscape of new media and AI research exhibits a structural character centred on artificial intelligence as the technological hub, with media convergence as its context and multiple application scenarios as extensions. The co-occurrence relationships among keywords trace a research trajectory spanning from technology-driven change to industry transformation, and from platform practice to social governance.

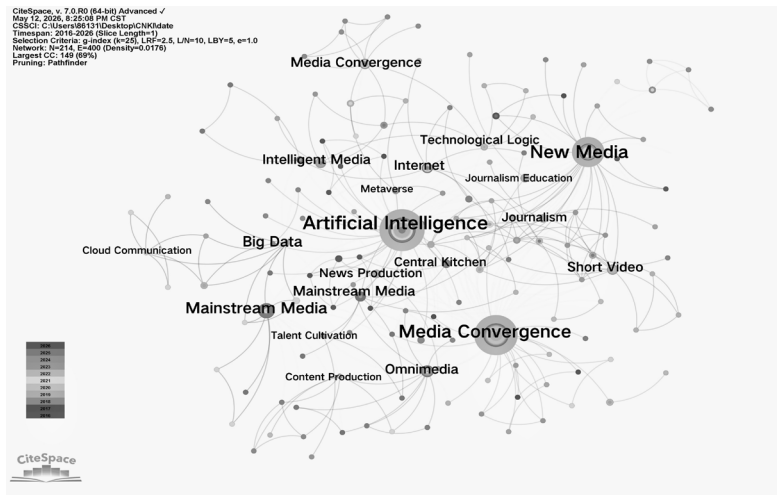


Fig. 2. Keyword Co-occurrence Map of Domestic New Media and AI Research (2016–2026)

Keyword Cluster Map.

This study employed the CiteSpace LLR algorithm to cluster keywords exhibiting strong co-occurrence relationships across the ten-year network. The analysis yielded eight cluster labels: “new media,” “artificial intelligence,” “central kitchen,” “media integration,” “content production,” “media convergence,” “short video,” and “cloud communication,” (see Fig. 3). The clustering modularity $Q > 0.3$ and the weighted mean silhouette coefficient $S > 0.7$ indicate significant network structure and reliable clustering results.

The cluster labels indicate a discernible gravitational pull of research towards the content production processes driven by artificial intelligence. The intertwining of AI, as underlying technological enablers, with content production and media convergence, indicates a shift in scholarly discourse from a surface-level discussion of “technology entering media” to a more substantive engagement with specific operational workflows. These include editorial, distribution, and moderation processes, such as the application of intelligent review systems in broadcast new media [11] and the disruptive impact of generative AI on video production [12].

A thorough investigation reveals that the eight clusters can be systematically aligned with the four analytical dimensions. Specifically, the clusters of “artificial intelligence” and “new media” collectively point to the dimension of human–machine relations and their transformation. The clusters of “central kitchen,” “media integration,” and “media convergence” focus on the dimension of systemic reform of mainstream media. The clusters of “content production,” “short video,” and “cloud communication” represent the dimension of technology empowerment and industry restructuring. Regarding the dimension of intelligent communication governance and ethical risk, although no single cluster exclusively captures it, these issues are implicitly embedded in cross-cutting discussions across multiple clusters, particularly those involving “artificial intelligence” and “cloud communication.”

To summarize, the extant research literature in this field over the past decade can be organized around four dimensions: human–machine relations and their transformation, systemic reform of mainstream media, technology empowerment and industry restructuring, and intelligent communication governance and ethical risk. The eight clusters thus retain traditional media convergence themes while simultaneously pointing towards the intelligent turn in news production and communication in the AI era. The cross-cluster linkages indicate that researchers tend to treat technology, platforms, and content as a mutually constituting whole rather than as isolated variables.

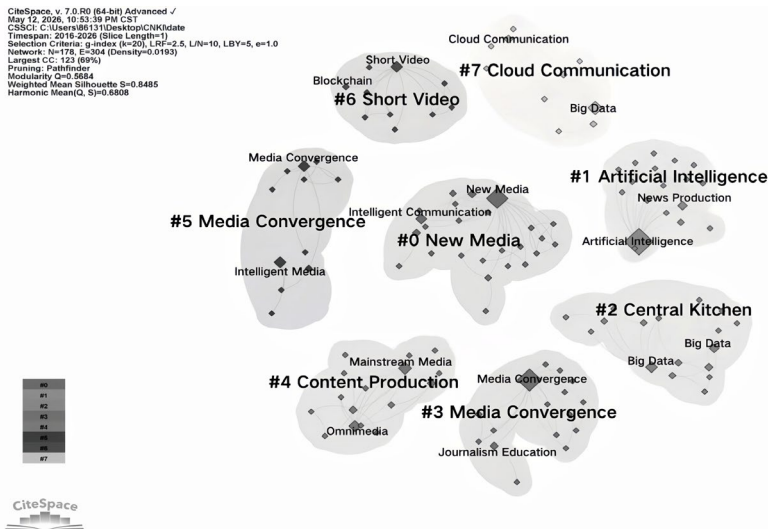


Fig. 3. Keyword Cluster Map of Domestic New Media and AI Research (2016–2026)

Keyword Burst Analysis.

To reveal shifts in research hotspots and emerging frontiers, this study employs CiteSpace to conduct keyword burst detection. The burst map identifies seven keywords with the highest burst strength (see Fig. 4), effectively representing the research frontiers and core themes of each period.

Top 9 Keywords with the Strongest Citation Bursts



Fig. 4. Keyword Burst Map of Domestic New Media and AI Research (2016–2026)

Regarding the evolutionary trajectory, intensity, and trends of keyword bursts: the burst map reveals a clearly phased evolution of research hotspots, with notable variation in the intensity and duration of different burst keywords, reflecting specific patterns in scholarly knowledge production. The first phase (2016-2018) was characterized by initial technological exploration and convergence, focusing on the introduction of foundational technological concepts and early media convergence practice, accomplishing a transition from instrumental applications such as robot journalism and algorithmic recommendation toward a systematic examination of the intelligent media ecosystem. The second phase (2019-2023) constituted a period of application proliferation and metaverse exploration, shifting the research focus toward specific media forms such as short-form video and the metaverse. Short-form video's sustained burst confirmed its deep embedding in everyday communicative life, while the metaverse's brief but intense burst advanced forward-looking topics such as embodied communication, producing a pattern in which empirically grounded inquiry and speculative, forward-looking exploration advanced in tandem. The third phase (2024-2026) marks the paradigm reconstruction era dominated by large language models, as LLM, through their roles as platform infrastructure and intelligent agent capability, have reshaped the underlying architecture of new media, redirecting research focus toward deep-level questions such as new mediation mechanisms in intelligent communication and the reconstruction of human-machine relations.

The profound shift in human-machine relations that has occurred during this decade is also evident. From 2016 to 2026, there was a marked progression in the academic understanding of AI-human relations, which can be characterized as follows: from the perception of AI as a mere assistive tool, to its consideration as an entity with a certain degree of autonomy, to its current status as an intelligent intermediary that is deeply embedded in the communicative ecosystem. During the preliminary research period (2016-2019), AI was conceptualized as a tool for enhancing news production efficiency, with a distinct delineation between human leadership and machine assistance. During the second research period (2020-2023), scholars initiated the examination of affective connections between AI and users that transcended purely instrumental relationships. As AI began to exhibit emerging subjecthood, the human-machine relationship shifted from unidirectional use to bidirectional interaction and affective engagement. Since 2024, the advent of the era of large language models has precipitated a fundamental shift in the role of AI. The evolution of AI from an assistive tool to an "intelligent intermediary" with the capacity for judgment and autonomous action has been accompanied by a shift in the human-machine relationship towards deep mutual embedding and collaborative symbiosis.

In the context of analyzing emerging frontiers, the forefront of AI and new media research is organized around four primary dimensions. Firstly, the paradigm shift from "AI+" to "large model+" focuses on how large language models, as new infrastructure, are driving a comprehensive upgrade of production and commercial paradigms. Secondly, the systemic reform of mainstream media extends concern from single technological applications to a holistic reconstruction encompassing institutional mechanisms, organizational structures, talent development, and value systems. Thirdly, emerging forms of human-machine relations and ethical governance address issues of AI-human

emotional interaction, algorithmic bias governance, and the construction of human-centered ethical frameworks for intelligent communication. Fourthly, the concepts of ideological security and platform governance are centred on the prevention of risks such as filter bubbles, post-truth phenomena, and deepfake content. These concepts are also focused on achieving a transition from textual compliance to practical governance efficacy.

5 Conclusion and Discussion

The present study employs the Technology–Organization–Environment (TOE) theoretical framework as an integrative perspective, utilizing CiteSpace bibliometric visualization to systematically survey and analyze 168 core articles from the CSSCI database on AI and new media research spanning 2016 to 2026. The present study employs annual publication trend analysis, keyword co-occurrence and clustering analysis, and keyword burst detection in order to map the field’s knowledge landscape and evolutionary trajectory over the past decade. This approach is intended to address the existing gap in macro-level, systematic reflection to a meaningful degree.

5.1 Main Conclusions

In accordance with the aforementioned theoretical framework, the primary conclusions of the present study can be synthesized as follows.

Firstly, research in this field has followed a phased, wave-like evolutionary pattern. From 2016 to 2026, the publication trajectory in AI and new media research completed a full cycle of “explosion-decline-renewed growth,” which can be further divided into three phases: a rapid emergence phase (2016–2018), an in-depth consolidation phase (2019–2023), and a renewed growth phase (2024–present). This evolutionary arc has been demonstrated to be highly correlated with major technological breakthroughs, national policy orientations, and the field’s own theoretical deepening.

Secondly, there has been a progressive evolution in research focus, moving from foundational technological concepts to specific application scenarios and ultimately to paradigm reconstruction. Keyword burst analysis reveals that research hotspots have exhibited a progressive evolution from technological concepts to application scenarios and onward to paradigm reconstruction. From 2016 to 2019, the prevalence of keywords such as “artificial intelligence,” “Internet of Things,” “central kitchen,” and “intelligent media” signalled the dominance of national top-level design for media convergence strategy. From 2020 to 2023, the popularity of the term “short-form video” and the concept of the “metaverse” was driven by the deep penetration of mobile internet and the maturation of VR/AR technologies. Since 2024, the emergence of the term “large language model” has signalled a paradigm shift in the field of generative AI, propelling research from the instrumental rationality of “AI+” thinking towards a symbiotic paradigm of “large model+”.

Thirdly, the research themes converge around four core dimensions. A comprehensive review of the literature and analysis of keywords reveals four fundamental thematic

domains: the transformation and reconstruction of human–machine relations, the systemic reform of mainstream media, technology empowerment and industry restructuring, and intelligent communication governance and ethical risk. The four domains are not isolated from one another; rather, they exhibit an interlocking logic of “technology-driven change,” “organizational response,” “social regulation”. Collectively, these domains constitute the field’s comprehensive knowledge landscape.

5.2 Research Value

The study’s theoretical contributions are threefold. Firstly, it provides a macro-level, diachronic cognitive reference point for research in the fields of AI and new media. Existing scholarship predominantly focuses on synchronic surveys, lacking a systematic grasp of the long-term thematic evolution over the decade. Secondly, this study identifies the phased characteristics and internal logic of the shift in human–machine relations, abstracting the evolution into a three-stage model – “instrumental assistance,” “para-social interaction,” “inter-subjective symbiosis” that reveals the cognitive leap in scholarly understandings of AI’s role. Thirdly, it validates and enriches the applicability of the TOE framework to intelligent communication research.

From a pragmatic standpoint, the study’s contributions are equally significant. In the context of academic research, the study identifies four dimensions: paradigm shift, systemic reform of mainstream media, human-machine relations, and ideological security, as the primary research frontiers for the current and near-future periods. These dimensions provide scholars with a reference for navigating disciplinary development. The findings demonstrate a close interactive relationship between industry practice and academic research in the media industry. Technological breakthroughs swiftly generate scholarly attention, while academic reflection in turn feeds back into practice to some degree. This can thus serve as a theoretical reference for media organizations pursuing AI-driven transformation. The study provides a solid foundation for policy-making by offering scholarly evidence to support the refinement of policy frameworks and the optimization of governance instruments by relevant regulatory bodies.

5.3 Limitations and Future Directions

The study’s data sources are limited to Chinese-language CSSCI journals indexed in CNKI, and do not encompass international journals or other document types. This constraint limits the study’s capacity to represent the global scholarly landscape. In view of these limitations, future research could include a wider range of literature sources and extend the temporal coverage, address emerging topics, and enhance cross-disciplinary dialogue.

In summary, from 2016 to 2026, research in China on artificial intelligence (AI) and new media traversed a decade of development. This development can be subdivided into three phases: initial introduction, in-depth reflection, and paradigm reconstruction. During this period, a pluralistic research configuration emerged, centred on human–machine relations, organizational change, industry restructuring, and governance eth-

ics. Bibliometric analysis reveals the internal evolutionary logic and structural characteristics of this knowledge landscape. In an era of continuous AI advancement and rapidly evolving media ecosystems, the influence of AI on new media will continue to deepen, bringing increasingly transformative implications for the communication industry.

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