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Trends in the Impact of Artificial Intelligence on Audiovisual Productions: A Bibliometric Analysis

TENDENCIAS SOBRE EL IMPACTO DE LA IA EN PRODUCCIONES AUDIOVISUALES: UN ANÁLISIS BIBLIOMÉTRICO

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Abstract: This article analyzes the impact of artificial intelligence on audiovisual through a bibliometric study of 825 articles published between 1977 and 2024. Through the analysis of co-occurrence networks and the identification of thematic clusters, the main lines of research that articulate this field are described: from deep learning and computer vision to the use of generative models in creative and cultural environments. The study proposes an interpretation of the key periods in the growth of scientific literature, focusing on the technological milestones that have reconfigured the relationship between machines, images, and narratives. The results not only allow us to map the development of the field, but also open up new lines of reflection on authorship, automated creation, and the place of artificial intelligence in contemporary culture.

Keywords: Artificial Intelligence; Audiovisual Production; Machine Learning; Deep Learning; Bibliometric Analysis; Bibliometrics

Resumen: Este artículo analiza el impacto de la inteligencia artificial en las producciones audiovisuales mediante un estudio bibliométrico de 825 artículos publicados entre 1977 y 2024. A través del análisis de redes de coocurrencia y la identificación de clústeres temáticos, se describen las principales líneas de investigación que articulan este campo: desde el aprendizaje profundo y la visión por computador, hasta el uso de modelos generativos en entornos creativos y culturales. El estudio propone una lectura de los periodos clave en el crecimiento de la literatura científica, atendiendo a los hitos tecnológicos que han reconfigurado la relación entre máquinas, imágenes y narrativas. Los resultados permiten no solo cartografiar el desarrollo del campo, sino también abrir nuevas líneas de reflexión sobre la autoría, la creación automatizada y el lugar de la inteligencia artificial en la cultura contemporánea.

Palabras clave: inteligencia artificial; producción audiovisual; machine learning; deep learning; análisis bibliométrico; bibliometría.

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1. Introduction

Artificial intelligence (AI) can be defined, in general terms, as the ability of machines to perform tasks that, under normal conditions, would require human intelligence, such as learning, perception, or problem-solving (Bogue, 2022). Since its early developments aimed at automating mechanical processes, AI has evolved into a technology capable of intervening in increasingly complex areas, including the creation and management of cultural content.

One of the first sectors to integrate artificial intelligence-based systems was digital animation, where algorithms made it possible to generate more natural movements, automate repetitive processes, and optimize workflows in 3D environments (Li, 2021; Reddy *et al*., 2023). At the same time, visual effects adopted these tools for particle simulation, environment reconstruction, and the generation of high-precision synthetic images (Tong *et al.*, 2021). As these solutions proved their effectiveness, their use expanded to other areas of audiovisual production such as automatic editing, assisted color grading, sound synthesis, automated translation and dubbing, and even scriptwriting and promotional campaign design.

The impact of artificial intelligence on the audiovisual industry is not limited to the technical level: these technologies are redefining the boundaries of authorship, visual languages, and modes of production, introducing new agents into the creative chain and blurring the line between the human and the automated. In this context, artificial intelligence AI is no longer just a technical automation resource but is now involved in the very definition of audiovisual authorship. The algorithmic generation of images, voices, and narrative sequences, including the aforementioned creation of preliminary scripts, positions AI as an agent that contributes directly to the expressive content of the work, rather than merely to its technical finish. This makes a debate on authorship and creative ownership, aesthetic attribution, and ethical responsibility for visual or audio material generated using models trained with previous files practically unavoidable. Several recent analyses of AI applied to audiovisual production describe precisely the acceleration of these practices and the ethical dilemmas associated with the authenticity of the image and voice, the algorithmic reuse of the performers' identities, and the possible partial replacement of certain traditional creative functions (West & Burbano, 2020) .

Understanding this transformation requires paying attention not only to the tools developed, but also to the narratives, discourses, and imaginaries that surround them.

2. Justification and Objectives

In November 2022, the company OpenAI launched ChatGPT with public access in the form of a free web interface, a turning point in the relationship between users and large language models or LLMs (Large Language Models) implemented with artificial intelligence (Singh & Singh, 2023; C. Zhang *et al*., 2023). Artificial intelligence**,** within the field of computer science, already had a long history in both the industrial and technological spheres as well as in academia. It was in 1956 that the term "*artificial intelligence"* was coined at the Dartmouth Conference, marking the formal beginning of research in this field (Pardeshi & Mude, 2024).

In their chronology of studies on AI, these authors note how, since that date, scientific advances in this field have focused primarily on the field of computing itself: first with the paradigm of *machine learning*; and later through the development of neural networks in the 1980s, a precursor to convolutional neural networks that would bring about the emergence of *deep learning*. As a result of the application of these advances in different sectors, scientific interest in research centers on the use of AI has led to multiple bibliometric and systematic reviews in areas such as medicine (Sidik *et al.*, 2024), education (Palmeiro *et al*., 2025), and economics (Ledro *et al*., 2022).

Particularly in terms of bibliometrics that specifically address studies on artificial intelligence and its influence on audiovisual production, in recent years some studies have partially or sectorially approached this perspective

On the one hand, Oña & Sánchez (2025) offer a bibliometric analysis of publications indexed in Scopus between 2000 and 2024, examining how AI is integrated into specific stages of audiovisual production, from automated script and image generation to 3D animation, motion capture, visual effects, voice synthesis, and automatic dubbing. The authors highlight exponential growth in work after 2019 and the influence of *deep learning* tools on industrial and creative automation. Researchers, however, limit their study to audiovisual production from a strictly technical perspective, without delving into broader cultural aspects such as narrative, social reception, or the role of the mass media. Furthermore, they do not include video games as part of their audiovisual production analysis. Video games, however, have historically been linked to the development of AI, given its implementation in both game mechanics and narrative generation.

On the other hand, Herrera-Viedma *et al.* (2018) use science mapping techniques to chart the first ten years of a journal specializing in artificial

intelligence and interactive multimedia, highlighting the centrality of terms such as *Big Data, Machine Learning*, and *Artificial Intelligence* .

Likewise, recent works on film management and economics, such as Gutzeit & Tiberius (2023) , have identified thematic clusters on industrial success factors, digital marketing, social media, data-driven personalization, *streaming* transformation , and emerging ethical tensions surrounding the use of AI in film production. Nonetheless, the authors' focus is more on the business sphere than on communication.

The main objective of this study is to understand these conceptual, intellectual, and social structures of scientific production and how research in artificial intelligence has evolved in a multidisciplinary area such as audiovisual communication, where technology and art, information and entertainment, reality and virtuality converge. In the complex ecosystem of cultural industries, this bibliometric analysis also aims to cover studies that span the entire spectrum of audiovisual leisure and entertainment, from television series to films, video art products, and triple-A video games.

3. Method

A descriptive and interpretative approach was used to analyze the scientific literature. From a quantitative perspective, bibliometrics was applied as a tool to examine scientific production (López-Rodríguez *et al*., 2022), for the purpose of comparing, measuring, and objectifying research activity (Dávila Rodríguez *et al*., 2009).

3.1. Materials

An exhaustive search was carried out in the Web of Science Core Collection (Clarivate Analytics) to identify and select the relevant scientific literature. The search string used is shown below:

("ai" or "artificial intelligence" or "ia" or "llm" or "chat gpt" or "dalle" or "dall-e" or "adobe firefly" or "bing image creator") and ("audiovisual communication" or "cinema" or "video game*" or "videogame" or "television" or "tv" or "entertainment industr*" or "podcast*" or "streaming platform*" or "broadcast*" or "tv show*" or "movie*" or "motion picture*").

For the study, we used R version 4.3.3 and RStudio version 2023.12.1-402.

This source was chosen because of its recognized methodological soundness and the quality of its content. This multidisciplinary, internationally esteemed database not only guarantees the relevance and reliability of the

documents retrieved, but also allows for advanced bibliometric analysis using standardized indicators, thus contributing to providing the study with a solid and verifiable empirical basis (Codina *et al.*, 2020).

In the search, manuscripts were selected whose subject (title, abstract, and keywords) included descriptors related to the research objective: *artificial intelligence*, *audiovisual communication*, *image generative tools*, *conversational* apps. After the query, the metadata of the scientific production was downloaded for analysis.

A total of 825 publications produced between 1977 and 2024, written by 2,773 authors and collected from a total of 476 sources, were included. The search and extraction of information was conducted on January 18, 2025. The database is open access and can be consulted at Zenodo (Rodríguez & Lomba Pérez, 2025).

3.2. Analysis Procedure

The procedure used to describe the profile of scientific production was carried out by considering the volume of publications, which made it possible to analyze their evolution over time, identify the most influential scholars, and emphasize the most relevant sources.

For the trend analysis, network and graph techniques were applied, used for the quantitative analysis of their structural properties These tools allow key metrics to be calculated to interpret the behavior of the nodes within the network (Robledo-Giraldo *et al*., 2013).

In particular, the conceptual structure of the field was addressed, understood as the set of relevant thematic areas that shape the development and evolution of a specific discipline (Cobo *et al.*, 2001). This phase focused on the analysis of cooccurrence of keywords provided by the authors as a way to identify thematic patterns.

The thematic network was constructed using the *Fruchterman-Reingold algorithm*, a model based on physical principles that simulates forces of attraction and repulsion between vertices, facilitating effective representation even in large networks (Hansen *et al*., 2019). In this model, the links between nodes act as attractive forces, while the nodes exert repulsive forces on each other, whether or not they are directly connected (Golbeck & Klavans, 2015).

In addition, the Leiden algorithm was used, which improves the efficiency of local movement in the network by randomly relocating edges to nearby communities, thereby helping to optimize the detection of modular structures (Traag *et* al., 2019).

The entire analytical process was carried out with the help of the Bibliometrix library (Aria & Cuccurullo, 2017), designed in R, which offers statistical tools for the processing of bibliometric data and its graphical visualization (López *et al*., 2024).

4. Results

4.1. Characteristics of Scientific Production on the Use of Artificial Intelligence in Audiovisual Productions

There is an annual growth rate of 4.32% (1977-2024), with six periods observed according to the production trend, between the years 1977-1993, 1994-1999, 2000-2012, 2013-2019, 2020-2022, and 2023- 2024 (see Figure 1).

In the first period (1977-1993), a total of 35 scientific articles were collected, which represents 2.34% of the total research output, with the journals *Weed Science Society of America* (N=8), *Oxford University Press* (N=7), *and Cambridge University Press* (N=6) standing out.

The second period (1994-1999) includes 54 articles, 6.66% of total production, with the *Weed Science Society of America journal* once again being the most relevant (N=6), followed by *Pergamon-Elsevier Science Ltd* (N=5).

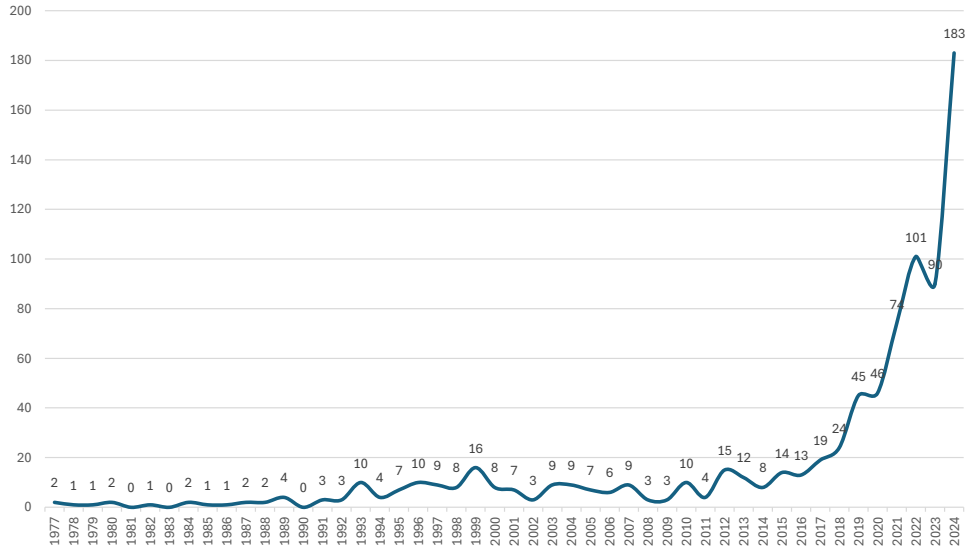
The third period (2000-2012) includes a total of 93 scientific articles, representing 11.47% of scientific output, with *Cambridge University Press* as the leading journal (N=14).

The fourth period (2013-2019) includes a total of 135 studies, representing 16.65% of scientific output, with the *journal Institute of Electrical and Electronics Engineers Access* (IEEE Access) receiving the highest number of citations during this period (N=41).

The fifth period (2020-2022) has a total of 221 articles, representing 27.25% of scientific output, with IEEE Access once again contributing the most articles (N=46), followed by Elsevier (N=28).

The sixth period (2023-2024) has the highest number of publications with a total of 273 articles, accounting for 33.66% of total article production, with the IEEE group again contributing the majority of papers (N= 71).

Figure1. *Annual scientific output*



Source: own elaboration.

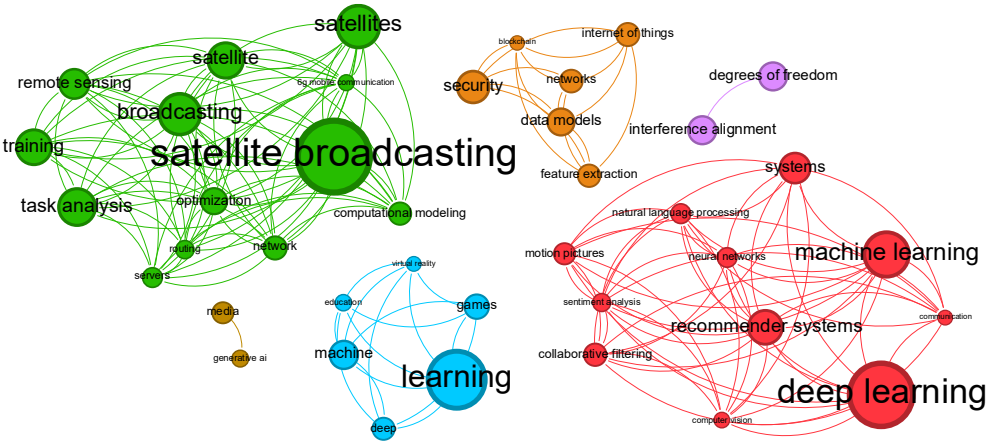
Regarding authorship, the most notable are engineer Yuzhi Li (n=13) from Shanghai University (Shanghai, China); engineer Yuting Wang (n=12) from Rutgers University (New Jersey, United States); and electrical engineer Yipeng Zhang (n=9) from the University of California (United States). In terms of production by country, China stands out in terms of number of articles (n=193), followed by the United States (n=185) and South Korea (n=53). On the other hand, the most relevant research centers include Shanghai Jiao Tong University (n=24), Tsinghua University (n=21), Zhejiang University (n=21), and the University of Florida (n=18).

4.2. Trends in Research on the Use of Artificial Intelligence in Audiovisual Productions

The 3,564 author keywords were analyzed. Search terms were excluded to identify the basic conceptual structure (*AI, artificial intelligence*, *LLM,* chat gpt, Chat GPT, DALLE, DALL-E, Adobe Firefly, Bing Image Creator, *Audiovisual Communication, Cinema, Video Game, Videogame, Television,* TV, *Entertainment Industry, podcast, Streaming Platform, Broadcast, TV show, Movie, Motion Picture)*. The words *deep learning* (n=47), *machine learning* (n=41), and *learning* (n=31) stand out in terms of number of occurrences. The first two words emphasize

artificial intelligence learning and self-learning systems and how they are trained (*deep learning, machine learning)*, while the third (*learning)* refers to learning in a more general way, not only focused on the field of machines, but also connecting with other words related to teaching (*education, games)*.

Figure 2. *Author's keywords*



Source: own elaboration.

The analysis of the co-occurrence of author keywords identified six clusters with an degree of association greater than 0.75 (see Figure 2).

The first cluster groups the keywords *deep learning* (n=47), *machine learning* (n=41), and *recommender systems* (n=29). This set focuses on the development of artificial intelligence models applied to image processing, visual data analysis, and improving interaction with audiovisual content. The research included in this group employs deep neural networks, classification algorithms, and hybrid machine learning approaches to address tasks such as image generation and manipulation, visual pattern prediction, and emotional understanding of content.

Within this field, research dedicated to emotional recognition in film images stands out, using models that combine affective signals with visual pattern analysis, which allows the emotional impact of the content on the viewer to be encoded (Huang, 2024). Also included are studies addressing the automated detection of alterations in videos, in the context of digital production or content security, where *deep learning* is used to identify visual manipulations (Shahzad *et al*., 2022).

Another set of studies focused on the application of neural networks such as LSTM (long short-term memory) in the prediction of data flows, with indirect applications to the sequential analysis of moving images and their possible adaptation to the processing of audiovisual content flows in digital environments (Latif & Ali Najah Ahmed, 2023). There are also proposals focused on attack detection through the fusion of visual features, reflecting an interest in securing transmission and display environments using models trained in computer vision (Zhang *et al.*, 2024).

Finally, there are works that explore the use of explainable artificial intelligence models applied to image-based diagnosis which, although originating in the biomedical field, have important implications for the audiovisual sector in terms of the transparency of the algorithmic processes involved in the creation, editing, or curation of content (Deshpande *et al*., 2022).

The second cluster (blue) includes the keywords *learning* (n=31), *machine* (n=12), and *games* (n=11), grouping together research concerned with the application of AI to the field of education, especially in the development of immersive environments and personalized learning experiences. This set of studies lies at the intersection of pedagogy, technology, and video game design, reflecting a growing trend toward integrating intelligent systems into both academic and professional training contexts.

One notable line of research addresses the design of learning environments based on serious games or serious video games, which incorporate intelligent pedagogical agents capable of interacting with students through natural language, adapting educational content to their specific needs (Ferro *et al*., 2021). This type of approach seeks to optimize motivation and learning effectiveness, especially in STEM (Science, Technology, Engineering, Mathematics) areas and at pre-university levels.

Another important aspect of this cluster dedicated to the development of simulators and autonomous agents for training cognitive skills using techniques such as Monte Carlo search (Fu, 2019) or reinforcement learning, with a particular interest in their application in complex strategic and training contexts.

Likewise, AI models aimed at recognizing motor patterns in sports activities are being explored, with direct implications for personalized teaching and the gamification of physical and emotional learning in virtual environments (Zhang *et al*., 2024).

Finally, some studies, such as those by Barbosa *et al.* (2024), integrate user behavior analysis and sentiment analysis using machine learning for

educational and commercial purposes, developing recommendation and personalization tools that leverage content generated by students or participants themselves on digital platforms.

The third cluster (green) relates to the use of artificial intelligence applied to communication and broadcasting systems through different audiovisual channels. The keywords are *satellite broadcasting* (n=26), *broadcasting* (n=21), and *artificial intelligence* (AI) (n=17). This set of studies analyzes how AI systems are transforming the way content is generated, distributed, and consumed in traditional media and digital platforms, including television, streaming, and social media.

One of the most relevant thematic lines addresses the use of AI algorithms to classify audiences, optimize content, and personalize experiences in digital broadcasting services. These technologies make it possible to automate content management on video platforms, establish recommendation patterns, and improve audience segmentation (Saruthirathanaworakun *et al*., 2024). At the same time, it examines how AI-based tools can influence consumer behavior, enhancing interaction and engagement through techniques such as sentiment analysis or contextual data mining (Yuan *et al.*, 2025).

Studies are also identified, included those conducted by Kim *et al.* (n.d.), which reflect on the symbolic and cultural representation of artificial intelligence in audiovisual media, paying special attention to figures namely virtual presenters or intelligent assistants, and how these are perceived by the audience in terms of realism, trust, and emotional connection.

In addition, a line of research is examined that explores the use of live transmission systems using unmanned aerial vehicles (UAVs), where artificial intelligence improves broadcast performance in highly mobile contexts and variable network conditions through adaptive multipath transmission mechanisms (Song *et al*., 2023).

Other works analyze how the media has constructed specific narratives around the role of artificial intelligence through the analysis of media events in which human professional players have faced off against AI systems, mentioning cases such as Kasparov vs. Deep Blue or Lee Sedol vs. AlphaGo (Bory, 2019). Using games particularly chess and Go, they explore how an image of AI associated with positive values is promoted to facilitate its social integration.

In the fourth cluster (purple), the keywords *interference alignment* (n=10) and *degrees of freedom* (n=7) are prominent, which affect aspects of the theoretical-mathematical functioning of AI. A significant portion of the studies included in this cluster focus on the design and improvement of interference

alignment algorithms, a fundamental technique for maximizing spectral efficiency in multiple-input multiple-output (MIMO) communication systems. These works, for instance those contributed by Anand *et al.* (2016) and Zeng *et al.* (2018), address proposals to optimize the alignment of interfering signals, reduce information loss, and improve the quality of the received signal even under conditions of intense interference, which is essential for environments such as multiple broadcasting or heterogeneous networks.

Other articles develop new AI variants adapted to the imperfect availability of channel information, proposing algorithms such as those founded on minimum mean square error (MMSE) that allow high levels of performance to be maintained even when channel data are not completely accurate. These approaches are relevant for achieving robust communications in highly dynamic contexts or those with technical constraints (Jeon *et al.*, 2017; Razavi, 2016).

Aspects such as the scalability of degrees of freedom (DOF) as a function of the number of users or network configuration are also explored, allowing the theoretical capacity for interference-free transmission in systems with multiple transmitters and receivers to be evaluated (Shin & Lee, 2015).

The fifth cluster (orange) is mainly represented by the keywords *security* (n=16*), Internet of Things* (n=16), and *data models* (n=10), along with research focused on information protection and data model management in connected environments, especially within the Internet of Things ecosystem. These studies deal with the challenges that arise when multiple smart devices exchange information on open and heterogeneous networks, which requires scalable, secure, and efficient solutions.

A predominant line of research focuses on the development of trusted architectures that enable the validation of interactions among connected devices, proposing mechanisms that integrate blockchain and consensus functions as a guarantee of authenticity, traceability, and resistance to attacks (F. Zhang *et al.*, 2023). These systems, generally distributed between the cloud, edge computing, and terminal devices, allow security policies to be implemented without the need for a central authority.

Another relevant research direction explores encryption and access control techniques to ensure data privacy in shared storage models, especially in industrial and urban contexts where the volume and sensitivity of data require robust protection measures (Chinnasamy *et al.*, 2021). Solutions have also been developed to manage node mobility in content-centric networks, with protocols capable of dynamically adapting to changes in context and location (Fayyaz *et al.*, 2023).

On the other hand, studies dedicated to lightweight user authentication in smart cities are included, with proposals that use formal logic and distributed validation to prevent common attacks without sacrificing energy efficiency or response times (Gupta *et al*., 2023). Furthermore, some works extend this issue to more demanding environments, such as satellite communications, where the space Internet of Things poses additional challenges in terms of connectivity and security (Kagai *et al*., 2024).

Finally, the sixth cluster includes the keywords *generative AI* (n=9) and *media* (n=11), with articles focusing on the relationship between generative artificial intelligence and the processes of content production, consumption, and analysis in the contemporary media ecosystem. This cluster covers works that examine how generative models, especially large language and image models such as ChatGPT, Gemini, and LLaMA, are affecting the news sector, audiovisual entertainment, and educational and social environments.

Caswell (2024) also points out the emergence of these systems in editorial routines and newsrooms, especially in large corporations such as the BBC, which are already experimenting with generative models to automate content personalization processes, format adaptation, and digital authoring infrastructure improvements.

From a critical perspective, questions are also raised about how these technologies reproduce social biases and prejudices, contributing to the reinforcement of inequalities through the media megaphone (Gillespie, 2024). This raises new challenges for transparency and governance in media representation processes.

Another aspect of the cluster addresses how new forms of production mediated by generative AI are inserted into the cultural dynamics of entertainment, particularly in relation to the perception of the symbolic and hedonic value of products such as films, series, or video games. From the field of entertainment science, it has been suggested that these values —associated with enjoyment, emotion, and the cultural resonance of content— are fundamental dimensions for understanding the consumer experience (Behrens *et al.*, 2024).

Likewise, the frameworks of veracity and authenticity are examined with respect to the use of smart cameras and the manipulation of images generated by neural networks, which directly influences the viewer's trust in digital images, affected by the use of digital processing such as deepfakes (Punnappurath *et al*., 2024).

Finally, works such as those by McBride *et al.* (2024) are included that integrate the educational and social dimensions of the phenomenon,

addressing how AI-generated narratives shape learning experiences, the representation of groups, and the construction of meaning from institutional or academic contexts.

5. Discussion and Conclusions

The analysis of annual scientific output (1977-2024) reveals a temporal evolution whose upward trajectory is divided into six major periods, a segmentation that responds both to the volume of publications and to the thematic and technological changes that mark each phase.

During the first period (1977-1993), the number of publications was very small, reflecting the nascent nature of the field and its links to disciplines outside the audiovisual environment, among agriculture, chemical engineering, and early robotics. During this period, artificial intelligence appeared tangentially in articles related to the modeling of biological systems, process automation, and physical simulations, with little impact in terms of media coverage or cultural creation.

The second period (1994-1999) followed a similar pattern, although interest began to grow in expert systems and the first computer applications associated with visual tasks, such as shape recognition, motion detection, and graphic simulation. Although production remained scarce, this stage anticipated a future convergence between AI and visual environments through applied studies involving cameras, sensors, and signal processing (Azarbayejani *et al.*, 1997).

From 2000 onwards (third period), the literature began to incorporate more specific references to the notion of artificial intelligence in computational environments linked to visual data analysis, albeit still in an incipient form. even though concepts as computer vision or MIMO architectures do not appear to be consolidated at this stage, lines of research oriented towards visual signal processing are detected, anticipating a transition aimed at more sophisticated techniques of audiovisual representation and transmission that will be consolidated in the following decade (You *et al.*, 2005). During this phase, the methodological foundations were laid for many of the tools that would later be integrated into editing, streaming, and automated post-production platforms.

The period 2013-2019 marks a turning point: the volume of publications doubles compared to the previous stage, and the field becomes academically established with the rise of specific journals such as IEEE Access, which consolidates its position as one of the main channels for scientific publication. This phase coincides with the rise of deep learning, the improvement of

computational architectures (such as CNNs and RNNs), and the development of predictive models focused on the film, video game, and animation industries (Liu *et al.*, 2016).

Reaching the last time period (2023-2024), a concentration of more than 33% of all historical scientific production is observed, a figure that clearly illustrates the impact that the democratization of generative artificial intelligence has had. This phenomenon cannot be explained solely by technological advances, but also by the interdisciplinary interest that AI arouses by situating itself at the intersection of engineering, social sciences, and digital humanities.

In this sense, it is significant that the first articles from the 2020-2022 period, including those applying convolutional neural networks to video analysis or classification techniques in streaming environments, already anticipated a change in the audiovisual paradigm, in line with the progressive optimization of production, editing, and transmission systems (Chang & Chang, 2020). Subsequently, with the advent of the extensive use of conversational interfaces, for instance OpenAI's ChatGPT, the focus of research shifted further towards issues of personalization, interactivity, and quality of experience (Reddy *et al.*, 2023).

This reflects the result of a convergence between different scientific agendas: on the one hand, studies concern technical efficiency and computational performance; and on the other, interest in the social, symbolic, and ethical effect of AI on the media ecosystem. This dual focus is evident in the analysis of thematic clusters. For example, cluster 1 addresses the algorithmic development of deep learning models; while cluster 3, emphasizes the transformation of broadcast channels and audience behavior.

A cross-sectional reading of the results also draws attention to the influence of geographical and institutional factors. The preeminence of China and the United States as leading countries can be linked to their ability to integrate academic research, technological development, and private investment within highly interconnected scientific and technological ecosystems.

Similarly, the concentration of authors at top-tier universities such as Shanghai University and the prominent role of journals notably IEEE Access show that the field of study lies in a hybrid space between computer engineering, communication sciences, and digital design.

The incorporation of topics like security, ethics, image authenticity, and the perception of the symbolic value of cultural products suggests that the field of study is expanding toward more critical and interdisciplinary horizons. This points to the need to integrate approaches from the philosophy of technology, aesthetics, and media sociology into future research.

The respective study has identified the main trends and conceptual structures that articulate the field of research on artificial intelligence and audiovisual productions. Through the analysis of co-occurrences and thematic clusters, the existence of consolidated lines of research has been confirmed around technical aspects as deep learning, visual pattern detection, and image processing, along with other more emergent lines that focus on media creation environments, symbolic representation, or the ethical and cultural implications of these technologies.

Bibliometric analysis confirms that the most influential publications and the largest number of contributions are concentrated in institutions and countries with strong technological and academic capacity, reinforcing the idea of a structural asymmetry in the production of knowledge about artificial intelligence. Despite this, the content of the articlepoints to a broadening of the field towards more critical and interdisciplinary approaches, where the symbolic, political, and social dimensions of AI are increasingly occupying a prominent role.

Beyond the quantitative results, this research provides a solid basis for understanding how artificial intelligence is integrated into audiovisual production processes and how this relationship affects both the formats and discourses that circulate in the contemporary media ecosystem.

However, there is a stark contrast between the scarcity of articles that deal in detail with the use of AI in conventional, multimedia, and transmedia storytelling, and aspects namely its ability to intervene in processes including lore construction, character development, world building, and, in general, scriptwriting. These creative uses have prevailed until now as a fiefdom of the human condition and its consequent intellectual capacity, genuine and seemingly irreplaceable. This comforting assumption that the imagination that characterizes human beings can never be replaced is being significantly challenged by the rapid advances in artificial intelligence and its creative potential. The question of how close we are to the dystopian image of a more efficient and creative AI when it comes to narrative projects requires a greater volume of responses from the scientific community. This bibliometric analysis, therefore, provides a foundation for a future line of research aimed at exploring the deeper relationships between machine learning, creative writing processes, and the hallmarks of human audiovisual production, investigating, chiefly, the figure of the author and the need to redefine the very concept of art.

These results fulfill the main objective of the study, which is to understand the evolution of research on artificial intelligence in the audiovisual field and to identify the main conceptual structures that articulate the sphere.

The temporal segmentation obtained and the six thematic clusters detected offer an integrated view of the development of this domain, in which the technical, the creative, and the symbolic converge.

As a limitation, this work is based exclusively on the Web of Science database, which restricts the scope of the analyzed production to a specific set of sources. In future research, cross-validation with Scopus or other databases would allow for the comparison of results, expand documentary coverage, and strengthen the replicability of the analysis.

From an interpretive perspective, the discussion of the findings highlights the growing influence of algorithms on audiovisual production and consumption practices, as well as the challenges posed by their impact in terms of algorithmic bias, transparency, and creative authorship. This critical reading allows us to connect the technical dimension with the sociocultural implications of AI, underscoring the need to incorporate theoretical frameworks from the digital humanities and technological ethics.

The conclusions, therefore, not only synthesize the six evolutionary phases of the field, but also open up a research agenda aimed at examining the relationship between artificial intelligence, audiovisual narrative, and automated creation, as well as the role these technologies play in redefining authorship and contemporary cultural production.

Ethics and Transparency

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Conflict of Interest

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Conceptualization	X			
Data curation	X	X		
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Funding acquisition	NA	NA		
Investigation	X	X		
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Resources	X	X		
Software	X	X		
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Validation	X	X		
Visualization		X		
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The research database is available in open access via the following link: **https://doi.org/10.5281/zenodo.15017961**

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