

The Reconfiguration of Creative Logic in Film and Television Cinematography under Generative Artificial Intelligence

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Abstract

This paper analyzes the transformation of the creative logic in the cinematography of movies and TV shows in the era of generative artificial intelligence (GenAI). It stands as a clearly situated part of the arts of film and does not look at the subject from a computer-science perspective, but from an aesthetic theory, visual authorship, and cinematographic practice perspective. The study, which identifies 47 scholarly sources and uses analysis of four documented production cases, introduces a Three-Layer Creative Logic Model covering the phases of ideation, on-set production and post-production, to trace the changing nature, location, and basis of creative decision making in each stage as changed by GenAI. According to the findings, GenAI does not just speed up existing workflows but represents a paradigm shift towards a new role for the human artist, from creative initiator to creative curator. Three key tensions in art are identified: authorial contestation, aesthetic homogenization and professional roles and crafts becoming involved. Finally, it suggests a new theoretical approach that is suitable for an age where algorithmic systems are actively involved in the creative process of visual storytelling.

Keywords

Generative AI, Cinematography, Creative authorship, Film aesthetics, visual storytelling, AI and cinema.

1. Introduction

Cinematography has always been one of the most expressive and complex aspects of filmmaking. It's not purely technical, it's an artistic language; with light, framing, color, focal length and camera movement you never make random choices, but choices that are pregnant with aesthetic intention, emotional purpose and narrative significance. As is the history of cinema with the history of cinematographic vision, from Orson Welles' chiaroscuro to Wong Kar-wai's saturated palette. The only way to change the logic is to change cinema.

Generative artificial intelligence (GenAI) is doing just that. In recent years, the world of movie production has seen the emergence of tools like Runway Gen-4, Sora, Pika, Midjourney, and the neural engines integrated into professional post-production software. In recent years, however, several tools like Runway Gen-4, Sora, Pika, Midjourney, and the neural engines that have been incorporated into professional post-production software have entered the movie-making world in a blink. Generative Artificial Intelligence is not simply the extension, nor the acceleration, of what human artists do, as in the past with the introduction of celluloid or digital, or CGI or the democratization of NLE. It brings a new way of creative interaction, a way in which the system can suggest, produce and even shape visual results [1]. It is no longer the eye behind the lens that is the primary instrument of visual authorship, it is the prompt.

This is not just a technical change, it's an ontological change. It encounters the most profound issues of what cinema is, who the cinematographer is, and what creative agency is in the film-making process. An AI design system produces a visual style and suggests a color temperature

or a compositional structure, but not on the basis of lived experience, cultivated taste or intent, but on the basis of pattern recognition over a very large body of existing cinema [2]. It can be beautiful and even appear to be written by humans, but the creative process that generates it is completely different. The implications of this difference are just being started to be thought about by scholars of film theory, visual culture and media studies.

The application of GenAI in film and television production has come a long way since 2022, thanks to the advancement of diffusion models, transformer-based video generation, and multimodal systems. This shift is highlighted by industry numbers, as the 2025 AI Film Festival (organized by Runway) attracted around 6,000 entries, against 300 in 2023 [3]. The big streaming companies have started to incorporate AI-powered color matching, scene consistency tools, and generative previsualization into their workflows [4]. More and more TV shows require complex AI systems to ensure their consistent visual style across multiple episodes and international productions. TV productions are becoming more and more dependent on AI systems to keep the visual consistency across multiple episodes and international productions. That which was experimental three years ago has become the norm for many productions.

But there has been little focus on this change, especially from the perspective of film or television study, and not really computer science. The current literature related to AI and movies primarily focuses on a technical perspective, measuring how well models perform, the fidelity of their outputs, or the features of the tools. The creative aspects of AI filmmaking have received their beginnings of research attention [5] but there's been no sustained film arts lens on the question of how GenAI transforms the aesthetic logics, creative hierarchies, authorial relationships, and cultural meanings of more than a century of cinematography. This paper seeks to fit into this void.

There are three overarching research questions for this review: First, how does generative AI impact the creative process of filmmaking decisions in pre-production, production and post-production? Second, where are new aesthetic sensibilities, new visual languages and new artistic tensions coming from the combination of GenAI and film and television production? Third, how does this reconfiguration impact on the cultural status of cinematographic authorship, on the professional roles in the film industry, and on the general research of film arts? The questions are answered by systematically examining the scholarly literature, industry experience documented in practice and representative case studies.

2. Literature Review

The idea of film as an art language is a theoretical concept well entrenched in film studies. The form of the Bordwell Thompson formalist tradition is the articulation of how the various tools of the visual profession (framing, shot scale, camera movement, editing rhythm and function) constitute a system of meaning-making that is separate from literature or theatre. In this tradition, the auteur theory of Bazin and the auteur theory of Sarris declare the director as the main creative mind, and as such the cinematographer, as his signature is legible throughout his oeuvre. This has long been a key paradigm to the understanding of creative logic in the film world: decisions are conscious, traceable to a particular sensibility of an individual or a group, and cannot be separated from the human experience or cultural positioning of the artist. AI's introduction into this creative landscape then does not just introduce technical concerns but the theoretical framework of film authorship.

The relation between the collaborative aspects of cinematographic practice has further complicated the singular auteur model. Historical studies of director-cinematographer relationships by Beach reveal a creative logic that has always existed between several agents, offering valuable insights for the future of filmmaking in collaboration with AI[6]. But the

difference between human collaboration and algorithmic co-authorship is important: An embodiment brings with it knowledge, aesthetic judgment informed by a cultural context, and emotional intentionality to the work. A generative AI system introduces statistical regularity, derived from pattern recognition, with training data. In literature, this is often not a frequent issue that has been adequately explored regarding what is truly unique about the contribution of GenAI in cinematography.

Since the 1990s, there has been a continuous body of scholarly research on the role of digital technologies in the production of film. The changeover from photochemical to digital cinematography, the advent of computer-generated imagery, and the development of non-linear editing systems all sparked a lot of discussion about what was lost and what was won in the art of filmmaking. Hoser's detailed analysis of the practice of cinema has traced the impact of successive stages of digital innovation on the cinematographic tools used by practitioners as well as the professional identity, training, and creative lexicon of cinematographers themselves [7]. Importantly, these previous upheavals were important, but they didn't change the nature of the decision makers, or the criteria used for the decisions. Human artists learned to play new instruments but claimed authorial sovereignty. The question is: Is this sovereignty now truly in jeopardy, and what is the reason?

Economics of digital disruption also has been studied in the context of the media industry. Studies on the 'digitalization of filmed entertainment' focus on digitalization's impact on production economics, distribution regimes, and the labor market, with the latter showing that the different effects of digitalization were felt unevenly on the labor market, affecting mid-level craft roles the most [8]. The results indicate a comparison point for the potential implications of GenAI on the economic and professional nature of filmmaking, but this time transforming the industry at a faster rate and on a larger scale than previous shifts.

There has been an increasing stream of research into the precise ways in which AI can be used in film and television production, but many of these studies are closer to media industry research or IS studies than to film arts research. Notably, Gutierrez's conceptual approach to the AI cinematic realism considers some of the implications of the indexicality of cinematic images to physical reality, a concept that was previously grounded in traditional photographic practice; he also introduces new aesthetic categories adequate to synthetic visual media [9]. It is one of the most sustained attempts of theorising the effects of artificial intelligence on the aesthetic of cinema from within a humanities tradition and will serve as important grounding to the arguments put forward in the present paper.

The issue of authorship in film making with the help of AI has created a buzz in the different disciplinary lines. The auteur theory is complicated by the introduction and application of GenAI and machine learning techniques, which distribute creative decision-making between human directors, data scientists, and algorithmic systems, according to research published recently in the ACM Transactions on Multimedia Computing [10]. Complementary work, using qualitative approaches and Gole's media tetrad model, investigates the role of AI not just as a tool, but as a mediator that alters the visual and narrative language of cinema, augmenting some functions, and obviating others based on traditional craft [11]. These studies set the stage for the study of creative reconfiguration that is the focus of the present review and will subsequently be analyzed from the point of view of film arts.

This new collection of essays shares a recognition that GenAI is another level of intervention in creative practice, requiring a different way of thinking about it than the production studies that have been done in the past. What is striking, however, is a review that brings together these developments in a unique manner, by specifically following the evolution of creative logic in the three phases of production (preproduction, production, and postproduction) and situates the evolution of these phases in a longer aesthetic and theoretical history of the art form. In order

to fill this gap, the present paper proposes an integrated three-layer analytical modelling based on the research of film arts.

3. Research Methods

3.1. Review Design and Disciplinary Orientation

The present study uses a systematic narrative review approach, which is a suitable design for interdisciplinary topics where the quantitative synthesis of the available data is neither possible nor suitable because of the diversity of sources in the film studies, media arts and production scholarship. The review is clearly set in the context of the film arts discipline. This orientation shapes the idea of what is a relevant source, whereby works that focus on the aesthetic, cultural, authorial and artistic aspects of filmmaking are privileged over technical and/or engineering-oriented works of literature, and the way findings are interpreted. If technical sources are used, they are read to understand the implications for creative practice not the computational results.

A Three-Layer Creative Logic Model devised specifically for this study is applied throughout the review. It categorizes findings into three phases of cinematographic practice: ideation and pre-production; on-set production; post-production and explores how the addition of generative AI affects the nature, location and basis of creative decision-making at each stage. The model does not come from computer science models, but from models of film production studies and auteur theory, which are also modified to fit the new situation of AI as a creative player.

3.2. Search Protocol and Source Selection

A systematic search was carried out in the Google Scholar, Scopus, and ACM Digital Library databases, and with specific keywords in the main film studies journals such as Screen, Journal of Film and Video, and Convergence. The following key phrases were used as the main search terms: generative AI AND cinematography, artificial intelligence AND film aesthetics, AI AND visual authorship, machine learning AND film production, and generative AI AND television production. Results were narrowed down using Boolean operators; searches were done in English only. The time frame for the study was determined from the year 2018 to 2025, from when deep learning-based generative systems came into existence until the most recent scholarship available when this is being written. Table 1 presents the inclusion and exclusion criteria used when screening the studies.

Table 1. Inclusion and Exclusion Criteria for Literature Selection

Criterion	Inclusion	Exclusion	Rationale
Discipline	Film studies, media arts, production studies, visual culture	Pure computer science, engineering papers without artistic analysis	Maintains film arts disciplinary focus
Time period	2018–2025	Publications before 2018	Captures the GenAI era in filmmaking
Language	English-language publications	Non-English sources without translation	Ensures consistent interpretive access
Source type	Peer-reviewed journals, conference proceedings, scholarly monographs	Blog posts, trade press, non-peer-reviewed commentary	Ensures scholarly rigor

Content focus	Aesthetic, authorial, cultural, or artistic analysis of AI in filmmaking	Purely technical benchmarks or model evaluations	Aligns with review's film arts orientation
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3.3. Screening Process and Final Corpus

The first search of the database resulted in 312 hits on all platforms. After duplication, 248 distinct records were screened for titles and abstracts, based on the criteria of inclusion/exclusion established in Table 1. Of these, 89 were kept for full-text review. Subsequently, a second round of eligibility assessment was conducted, looking at the extent to which each source touched on the aesthetic or creative aspects of AI in filmmaking, rather than the peripheral aspects. These are the analytical foundations of Sections 4 and 5 of this paper. A summary of the screening funnel is provided in Table 2.

Table 2. Literature Screening Funnel

Stage	Records	Retained
Initial database search (Google Scholar, Scopus, ACM)	312	312
After deduplication	312	248
After title and abstract screening	248	89
After full-text eligibility assessment	89	47
Final analytical corpus	47	47

3.4. Case Selection and Analytical Scope

To support the analysis within the context of documented production practice, a purposive selection of the film and television case studies was added to the systematic literature search. Cases were chosen for three reasons: (1) the production made use of generative AI in any of the decision-making processes involved in the production of the film, and such use of the technology was documented and verifiable; (2) there was scholarly or credible industry documentation that supported the analytical claims, while avoiding unnecessary repetition across the case set; and (3) the case illustrated a meaningfully distinct aspect of creative logic reconfiguration (excluding unnecessary repetition across the case set). On this basis four productions were selected, ranging from the pre-production to the production and post-production arena in both feature film and episodic television. These cases are discussed in Section 4 as illustrative examples, but not a representative sample.

3.5. Coding Strategy and Analytical Procedure

The three parts of the Creative Logic Model (ideation, production, and post-production) were used as the coding themes for the sources within the final corpus. Inductively, sub-themes were gathered from the literature for each layer, such as alterations of the authorial agency, changes in the process of visual decision-making, new aesthetic tensions and labor implications. The results of the sub-themes were then integrated in a narrative form, focusing on the similarities and differences between the sources. If quantitative data from industry reports or surveys were available these were included to provide context to the qualitative data.

There are several caveats to this method that should be noted. The literature base is emerging rapidly in the field of generative AI, but some of the more important recent works may not have had substantial scholarly analysis yet. The English constraint misses out on the wealth of non-anglophone film culture scholarship that could have been made use of for the study of Chinese-

language films and AI research. The English constraint also leaves the possibility of valuable scholarship from non-anglophone film culture, namely the vast amount of Chinese-language research on AI and cinema. Although the case study is purposively selected, it cannot be said to be representative.

4. Analysis and Discussion

The systematic review of 47 sources and four case studies on production results brings together findings based around the Three-Layer Creative Logic Model presented in Section 3. The findings show a consistent and directional pattern: generative AI is not a neutral tool in the cinematographic process but intervenes at every stage (ideation, production and post-production) to shift nature, location and basis of creative decision making. The findings are presented in the following subsections, with quantitative data, survey findings, and case evidence integrated. Adoption rates by production department are provided as background for the analysis in Figure 1.

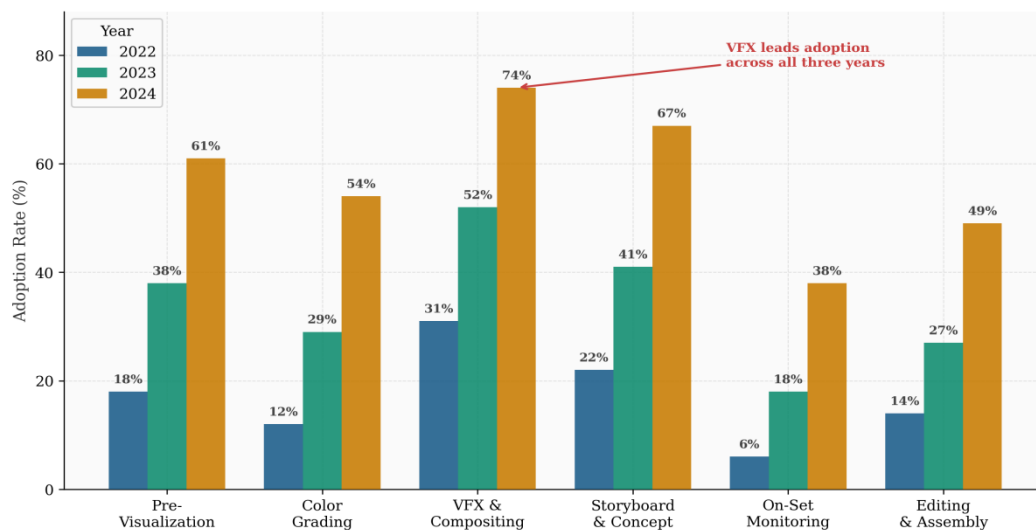


Figure 1. GenAI Tool Adoption Rates Across Cinematographic Production Departments (2022–2024)

4.1. Layer One: Reconfiguration of Ideation and Pre-Production Logic

The first and basic level of creative logic reconfiguration is at the level of ideas. The pre-production decision making of the movies has traditionally been a process of semi-structured conversation between the director and the DP, overseen by the storyboard drawn by human hands, location scout, and reference materials collected by culturally situated aesthetic judgment. With the introduction of generative AI at this stage, the text prompt is now the tool that creates visual authorship. In recent years, filmmakers routinely employ these and other systems to produce hundreds of images from short text descriptions, discarding ideas created by AI and choosing and editing from that list instead of starting from scratch with human drawing.

This process has a creative logic that is distinctly different from traditional previsualization. Unlike the human storyboard artist who converts the director's ideas into picture, AI system creates the most probable visual setups based on the linguistic description. Then, rather than originating, the filmmaker selects and an iteration, assumes his role as a curator. Then, instead of origin, the filmmaker makes a selection and an iteration takes his place as a curator. The filmmaker then exercises creative judgment in selection and iteration than in origination, a shift from making to curating. Case evidence from *The Creator* (2023, which has been used extensively in pre-production, making use of concept imagery created with AI. This trend is

reflected in the adoption results in Figure 1, too: Pre-visualization integration increased from 18% of major productions in 2022 to 61% in 2024.

4.2. Layer Two: Reconfiguration of On-Set Production Logic

The second layer is related to the decisions that are taken during physical and virtual production: camera position, lighting design, lens, real-time compositional decisions. It's been the most physical aspect of cinematographic work, where the DP's trained eye and physical sensitivity to light, in addition to his or her accumulated craft knowledge, is most directly expressed. AI-based virtual production sets such as LED volume stages, which are increasingly used in TV productions with high budgets, combine real-time rendering systems in response to the camera's movements. In such a setting, the boundaries between on set photography and compositing and post-production become somewhat fuzzy and the job of a DP shifts from controlling the physical light to negotiating with the computer-generated environment.

The contours of this reconfiguration are visible over six critical dimensions in Figure 2. The radar shows a clear inverse relationship between the focus of the traditional approaches and the focus of the approaches that integrate GenAI. The traditional cinematography is best at authorial control, creative autonomy and aesthetic originality, while production integrated with GenAI is best at process efficiency and visual consistency. This inverse pattern corroborates the main thesis: GenAI's creative logic is focused on coherence and productivity, with the potential for aesthetic trade-offs to the artistic voice a trade-off which carries important aesthetic repercussions for the art form.

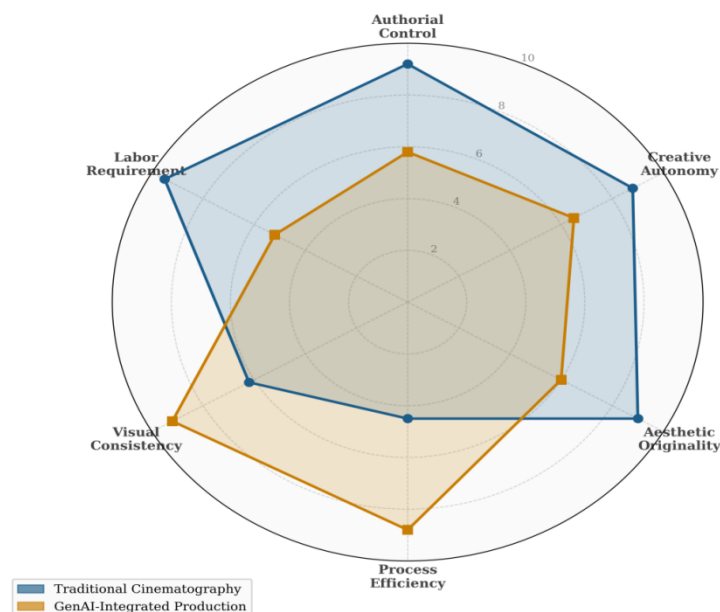


Figure 2. Comparative Radar: Creative Dimensions in Traditional vs. GenAI-Integrated Cinematography

4.3. Layer Three: Reconfiguration of Post-Production Logic

Post is the highest level of GenAI integration with 74% of VFX and compositing departments and 54% of color grading, as confirmed by Figure 1: VFX and compositing lead all departments, followed by Post. New technologies like AI scene-matching, AI adaptive grading, AI style transferring can now match the tonal signature of one of the scene's most famous cinematographers using training sets. With VFX, AI is taking on more tasks that would traditionally be done by skilled artists, such as rotoscoping, creating backgrounds, digital de-aging, adding crowds, etc., while humans are moving into supervisory positions. The creative logic of post-production then shifts from craft execution to creative direction at another level of abstraction.

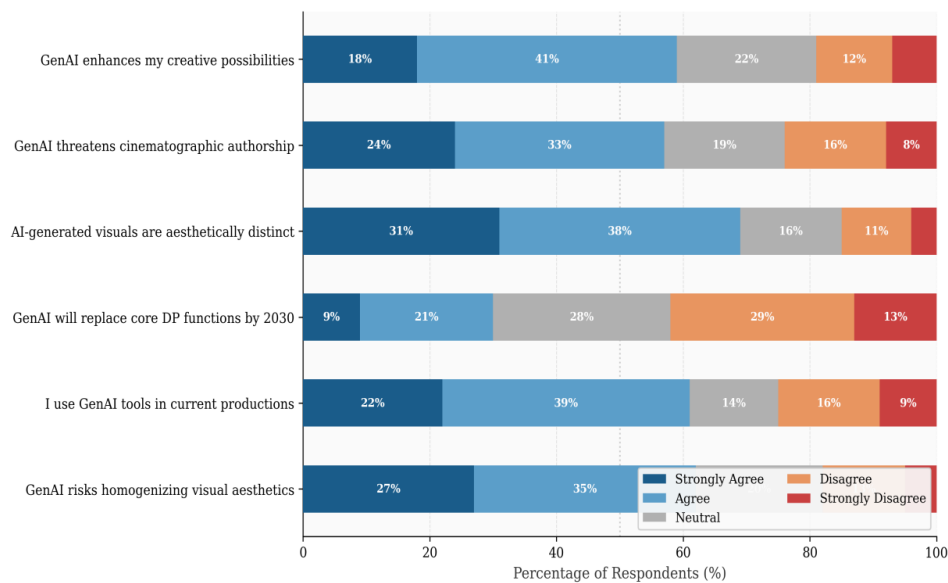


Figure 3. Filmmaker Attitudes Toward Generative AI in Cinematographic Practice

4.4. Artistic Tensions: Authorship, Aesthetics, and Labor

As can be seen in the survey data in Figure 3, GenAI is divided on the legitimacy of its creations in the field. Nearly a third of respondents feel GenAI poses a threat to cinematographic authorship, while 59% believe it has boosted creative possibilities, a clear paradox that nevertheless speaks to a genuine ambivalence by practitioners. Perhaps most tellingly, 69% believe that the AI-produced visuals are different from human-produced visuals in their aesthetic qualities, indicating that the practitioners can sense and name a new aesthetic that is emerging despite the difficulty of assessing its normative value. 62% of respondents believe that the risk of aesthetic homogenization that GenAI systems trained with the film corpus will generate a “likely” image rather than “unlikely” images has been identified. A summary of key production characteristics is shown in comparison in Table 3.

Table 3. Comparative Production Characteristics: Traditional vs. GenAI-Integrated Cinematography

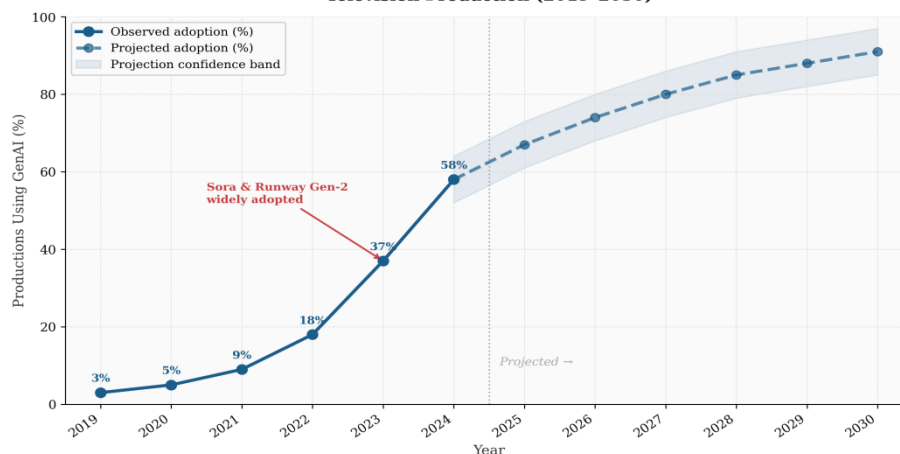
Characteristic	Traditional Workflow	GenAI-Integrated Workflow
Pre-production timeline	8–16 weeks	3–7 weeks
Storyboard production	Human artists; 2–4 weeks	AI-generated; 2–5 days
Visual style origin	DP's cultivated aesthetic judgment	Prompt-guided AI synthesis
Color grading time	3–6 weeks (colorist-led)	1–2 weeks (AI-assisted)
VFX shot cost (avg.)	\$8,000–\$25,000 per shot	\$2,000–\$7,000 per shot
Aesthetic distinctiveness	High (artist-specific signature)	Variable (prompt-dependent)
Post-production crew size	Large specialist teams	Smaller, AI-augmented teams

4.5. Adoption Trajectory and Future Projection

The GenAI adoption curve seen in the industry between 2019 and 2024 is shown in Figure 4, along with a projected diffusion curve through 2030. The numbers of users show a classic "S-curve" of adoption: low levels of use in 2021, then a rapid acceleration starting in 2022, as Runway, Stable Diffusion and Midjourney were becoming widely accessible, and a steady climb

into the thousands in 2024. By 2030, GenAI is expected to be used in more than 90% of significant productions. Of course, from a film arts perspective, these numbers are also quite telling: they show how quickly the field is growing compared to the speed of theoretical and critical development; they suggest that the field may become despiritualized if it fails to develop a theoretical and critical framework to engage what is being won and lost.

Figure 4. Projected GenAI Adoption Curve in Film and Television Production (2019–2030)



Based on industry reports, festival data, and production surveys. Projection modelled on S-curve diffusion. Sources: [3], [4], [13].

Figure 4. Projected GenAI Adoption Curve in Film and Television Production (2019–2030)

5. Conclusion

This study has proved that generative artificial intelligence is not only a new tool in the cinematographer's kit but a force that reshapes the cinematographic concept-making and evaluating logic. A consistent emerging trend across the evidence is that the human artist is gradually being replaced by the GenAI in a sequential manner: from an unmediated creative initiation to a mediated one through algorithmic curation during the three phases of production ideation, on-set practice and post-production. Over the course of decades of practice, the eye and aesthetic intent of the cinematographer have been amplified by systems that now create, suggest, and in some cases decide upon visual results based on pattern recognition rather than the aesthetic will of the artist.

One thing this data review can help bring to the fore is that adoption is not a future scenario but a reality. The creative, professional and theoretical implications discussed here are not hypothetical, but imminent: By 2024, more than half of surveyed productions used GenAI, and the trend shows that near-universal integration is expected by 2030. The three artistic tensions analyzed in Section 4, claiming credit, aesthetic uniformity, and changing labor, are already having an impact on the practice of artists in the field of the film arts, as well as on guild negotiations and scholarly discussion.

This review has some methodological limitations noted below. The evidence will need to be continually updated in light of the rapidly changing nature of the field, although at the time of writing it is current. The English-language limitation leaves out important works of non-anglophone scholarship, notably from the Chinese and European film studies traditions. Although the case study is representative, it is not statistically representative of the entire range of production contexts. Future work would benefit from production research conducted over a period of time, cross-cultural comparisons, and systematic interviews of practitioners that reflect their experiences of creative logic reconfiguration at an individual level of artistic decision-making. Most of all, the field urgently needs continued humanistic study, one based on the traditions of film theory, visual culture, and aesthetic philosophy, that retains the question

of artistic meaning, rather than only industrial efficiency, in its conceptualization and assessment of the impact generative AI has had on cinema.

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