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Generative AI and its Effects on the Art and Business of Filmmaking

Research Question: How is Generative AI transforming the art and business of filmmaking, particularly in terms of creative authorship, workforce dynamics, and legal frameworks that govern content ownership and production practices?

Purpose: The purpose of this literature review is to analyze current research on Generative AI in filmmaking to provide a thorough understanding of both the creative opportunities and challenges faced by the film industry as it navigates this major technological shift. This review examines how filmmakers are integrating AI tools into their creative processes while addressing concerns about artistic authenticity, employment security, and intellectual property rights.

Introduction

Filmmakers around the world are beginning to use Generative AI tools that are fundamentally reshaping how movies are made. These technological innovations offer exciting new creative opportunities but also raise serious questions about ownership, authenticity, and the future of film industry employment. A notable example of successful AI integration can be seen in recent productions where filmmakers have used text-to-video generation to create preliminary scene concepts, significantly reducing pre-visualization costs while maintaining creative control over the final output. Recent studies by Totlani (2023) and Zhang et al. (2025) demonstrate how filmmaking workflows are evolving with AI integration. Directors today can use text-to-video tools to produce initial scene concepts, neural networks to construct complex 3D environments,

and avatar generators to design unique characters. As these tools become more sophisticated and accessible, researchers like Khattak et al. (2025) raise fundamental questions about creative agency: who truly "holds the camera" when AI assists in making creative decisions, how creators should be properly credited, and what happens to traditional roles within film production crews.

This literature review explores findings across four themes: creative authorship and human agency, workforce transformation and employment impacts, ethical concerns including cultural appropriation and bias, and evolving legal frameworks governing intellectual property rights. Together, these themes showcase both the transformative potential and significant challenges that Generative AI brings to modern filmmaking.

Creative Authorship and Human Agency

A central concern in current research is how Generative AI affects creative authorship and the essential role of human artists in filmmaking. Khattak, Cohen, and Taylor (2025) pose the critical question of who truly holds creative control, emphasizing that authentic human experiences, emotions, and cultural knowledge remain fundamental to meaningful filmmaking. They argue that while AI can generate technical content, it lacks the capacity to replicate the depth of lived experience, emotion, and cultural understanding that human creators bring to film.

Similarly, Oberting (2024) advocates for treating Generative AI as an advanced tool set rather than a replacement for human creativity. She emphasizes that studios must preserve authorship and ownership rights for filmmakers while developing copyright frameworks that require human creative input while still allowing creators to maintain ownership of AI-assisted work.

Totlani (2023) presents a more optimistic perspective, explaining that AI can enhance creativity by supporting what he terms a symbiosis between AI-facilitated efficiency and human ingenuity. Generative Adversarial Networks (GANs), deep learning systems where two neural networks compete to create increasingly realistic outputs, enable artists to explore innovative visual concepts that might be difficult to conceptualize through traditional methods. Zhang et al. (2025) expand on this potential, noting that Generative AI enables novel artistic expressions including dreamlike morphing sequences and abstract imagery that would be technically challenging or cost-prohibitive to create manually. In this collaborative framework, AI functions as a creative partner, offering unique visual tools while requiring human guidance to maintain narrative coherence and stylistic consistency. Despite rapid technological advancement, researchers consistently position filmmakers as the ultimate authors of their work, with AI serving as an instrument rather than a creative replacement.

Workforce Transformation and Employment Impacts

The automation capabilities of AI tools present significant implications for employment within the film industry. Several researchers document how AI can now handle routine or time-intensive production tasks that previously required human expertise. Serena (2025) directly examines this concept of workforce substitution, warning that writers, animators, digital effects artists, and other creative professionals face potential job displacement due to increasingly capable Generative AI systems. Zhang et al. (2025) detail how technologies like diffusion models and 3D synthesis algorithms accelerate various production processes. AI-powered animation software and deepfake technologies can rapidly generate artificial actors or complex digital backgrounds, potentially replacing certain technical roles. Specific creative positions at

risk include rotoscoping artists, background painters, junior animators, and digital compositing specialists. These roles involve repetitive technical tasks suitable for AI automation.

Industry workers increasingly recognize a fundamental trade-off between efficiency and employment security. Reports indicate that studios' adoption of AI tools could lead to what Halperin and Rosner (2025) describe as a wage squeeze as fewer human workers are required for traditionally labor-intensive processes. Bender (2024) explains that Generative AI has sparked widespread fears about the disappearance of human creative labor in media industries, with concerns that many established creative roles may diminish or transform substantially as AI capabilities expand.

However, historical precedent suggests that technological disruption often creates new opportunities alongside displacement. The CGI revolution of the 1990s displaced traditional model makers and matte painters while creating entirely new career paths in digital effects, 3D modeling, and virtual production. Researchers suggest that AI integration may similarly generate novel positions such as AI prompt engineers, algorithm trainers, hybrid artist-technicians, and AI ethics consultants (Halperin & Rosner, 2025). These emerging roles would require workers to develop new skill sets that combine traditional creative expertise with technical AI literacy.

Ethical Concerns

Current research identifies numerous ethical challenges associated with Generative AI implementation in filmmaking. Primary concerns center on the unauthorized use of copyrighted material and the perpetuation of algorithmic bias in creative media. Khattak et al. (2025) examine how Generative AI systems often rely on vast datasets compiled from existing art and media, typically without explicit consent from original creators. This practice raises significant

equity and cultural authenticity concerns, particularly for artists from marginalized communities whose distinctive styles or cultural narratives may be appropriated without permission or compensation. To address these issues, researchers advocate for cultural authenticity audits and comprehensive fair-use reforms to ensure AI tools respect source communities and provide appropriate attribution. Oberting (2024) acknowledges the legal complexity surrounding AI-generated content while arguing that these systems should operate under licensing frameworks that properly compensate original creators whose work contributes to AI training datasets.

Representation and bias present additional ethical challenges. Totlani (2023) highlights how AI algorithms can perpetuate stereotypes embedded in their training data, potentially reinforcing harmful cultural representations. Halperin and Rosner (2025) document creator concerns about AI-generated casting decisions or character designs that may feel inauthentic or culturally insensitive. Filmmakers worry that AI systems trained on historically biased datasets might reduce diversity in storytelling by defaulting to dominant cultural perspectives rather than amplifying marginalized voices. For example, if AI systems are trained primarily on Hollywood productions from previous decades, which often underrepresented certain communities, the generated content may inadvertently perpetuate these representational gaps. This could result in AI-suggested characters, storylines, or visual elements that lack cultural authenticity or fail to reflect contemporary understanding of diverse identities and experiences.

Serena (2025) raises additional concerns about deepfake technologies and their potential for misuse. The ability to digitally resurrect deceased actors or alter existing performances without explicit consent raises fundamental questions about posthumous rights, performer agency, and the ethical boundaries of digital manipulation in entertainment media.

Legal Frameworks

The integration of Generative AI introduces complex legal questions, particularly regarding copyright law and intellectual property protection. Oberting's analysis (2024) examines how existing legal frameworks apply to AI-generated media content. He argues that filmmakers utilizing AI tools should retain their authorship rights and that copyright law must evolve to balance practical authorship requirements with dynamic licensing regimes. Oberting contends that as long as a human creator can demonstrate sufficient creative input and decision-making authority, the resulting film, even if incorporating AI-generated elements, should qualify for traditional copyright protection. Khattak et al. (2025) reference the 2025 stance by the U.S. Copyright Office, which reaffirmed that only human-authored works qualify for full copyright protection. This legal precedent creates both clarity and complexity. While it protects human creators' rights, it also raises questions about how courts will evaluate the sufficiency of human creative input in AI-assisted productions.

Both Oberting (2024) and Khattak et al. (2025) explore fair-use doctrines and open-licensing alternatives as potential solutions to current legal ambiguities. Fair-use provisions allow limited use of copyrighted material for purposes such as criticism, comment, or transformation, while open-licensing systems like Creative Commons provide structured frameworks for creators to specify how their work may be used by others, including AI training systems.

These researchers agree that excessive legal restrictions could stifle beneficial innovation. Oberting warns that overly strict authorship thresholds might discourage filmmakers from utilizing valuable AI tools that could enhance their creative capabilities. They recommend

policies that facilitate responsible innovation while protecting creator rights, such as streamlined licensing systems for AI training data. These are standardized agreements that would allow content creators to be compensated when their work is used to train AI systems.

Future Research Directions and Conclusion

As filmmakers continue exploring the expanding capabilities of Generative AI, the industry seeks tools that enhance creativity without diminishing human authorship and creative agency. Across current research, there is clear consensus that film industry professionals want to maintain control over the creative process while strategically leveraging the benefits of emerging technologies. This transformative moment presents an opportunity to establish equitable systems of creative credit, implement responsible AI usage practices, and develop legal frameworks that protect artist rights while encouraging innovation. The film industry's response to AI integration will likely serve as a model for other creative industries facing similar technological disruption.

Future research should focus on several critical areas. Scholars need to develop clearer frameworks for defining shared authorship between humans and AI systems, establishing guidelines that protect creator rights while acknowledging AI's contributory role. Research into workforce preparation and retraining programs could help creative professionals develop skills for emerging AI-integrated roles.

By continuing to investigate these interconnected areas, researchers and filmmakers can help ensure that AI tools enhance the art of filmmaking without replacing the human creativity, cultural insight, and emotional authenticity that remain at the heart of meaningful cinematic storytelling. The goal should be to create a future where AI serves as a powerful creative

instrument while preserving the essential human elements that make film a profound form of artistic expression.

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