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The Ethics of AI-Generated Images: What It Means for Authenticity and Ownership in Photography.

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ABSTRACT

The rapid advancement of artificial intelligence has ushered in a transformative era for visual media, particularly in photography. AI-generated images, created through algorithms such as Generative Adversarial Networks (GANs) and diffusion models, now rival traditional photography in realism and artistic expression. While these technologies offer unprecedented creative potential, they also raise significant ethical questions about authorship, authenticity, and ownership. This paper examines the complex ethical landscape surrounding AI-generated imagery in the context of photography. It begins by exploring the philosophical tension between human creativity and algorithmic generation, questioning whether images produced by machines can be considered "photographic" in a traditional sense. The concept of authenticity—long foundational to photography as a medium grounded in reality—is challenged by AI's ability to synthesize scenes that never occurred. Further, the paper analyzes the legal and moral implications of ownership. If an image is generated by an AI trained on millions of copyrighted photographs, to whom does the output belong? The roles of the algorithm's creator, the user who prompts the generation, and the dataset contributors are all debated within existing intellectual property frameworks, which remain largely unprepared for such disruptions. The discussion also considers the potential erosion of trust in photojournalism, art, and media as audiences struggle to distinguish between genuine photographs and AI fabrications. It calls for clearer guidelines and ethical standards to govern the creation and dissemination of AI-generated visuals. Ultimately, this paper contributes to an urgent conversation on the future of visual ethics in an age where the line between human and machine-made imagery continues to blur.

Keywords: AI-generated images, photography ethics, image authenticity, intellectual property, visual media, algorithmic creativity

1. INTRODUCTION

1.1 Contextual Overview of AI Advancements in Image Generation

In recent years, artificial intelligence (AI) has emerged as a transformative force in visual content production, particularly within the realm of image generation. Algorithms based on Generative Adversarial Networks (GANs), diffusion models, and convolutional neural networks (CNNs) have enabled machines to generate hyper-realistic images with minimal human input [1]. These advances have redefined creative workflows across advertising, digital art, fashion, and entertainment industries.

Unlike earlier computer-generated imagery (CGI), modern AI image generators can synthesize visual data that closely mimics the complexity of realworld photography, including lighting, depth, and texture nuances. Tools such as DALL·E, MidJourney, and Stable Diffusion utilize large-scale training datasets to generate contextually coherent visuals from simple text prompts, demonstrating a leap in semantic understanding and stylistic variation [2]. These tools have become increasingly accessible to both professionals and hobbyists, democratizing visual production but also challenging conventional notions of authorship.

The global creative economy, once reliant on human-centric craftsmanship, is now navigating an era in which AI can simulate creative intention. This evolution has generated excitement for productivity and experimentation, but it has also triggered apprehensions about displacement and ethical considerations surrounding creative integrity [3].

1.2 The Intersection of Photography, Technology, and Creative Autonomy

Photography, historically regarded as a medium rooted in technical skill and aesthetic vision, now finds itself intersecting with computational creativity. The traditional process—comprising composition, exposure, and post-processing—is being disrupted by neural networks capable of producing photorealistic outputs devoid of camera optics [4]. These developments blur the boundaries between genuine photography and synthetic renderings, raising questions about the future of visual storytelling.

The artistic identity of photographers is closely tied to choice, moment, and context. However, AI-generated images—trained on vast databases of photographs—can emulate composition styles, lighting effects, and even emotional tones without conscious intent [5]. As AI tools become collaborators rather than mere instruments, the distinction between human-generated and AI-generated visuals becomes increasingly ambiguous.

While this convergence presents opportunities for augmentation—enabling artists to explore visual styles beyond physical constraints—it also redefines authorship. The role of the photographer is no longer limited to capturing reality but extends into orchestrating algorithms. This raises important questions about creative autonomy, particularly when AI begins to inform aesthetic choices traditionally made by the artist [6]. Ultimately, the integration of AI into photographic practice calls for a re-evaluation of artistic agency in a co-creative technological landscape.

1.3 Rising Concerns in Authenticity and Ownership

One of the most contentious aspects of AI-generated imagery is its impact on authenticity. Historically, photographic images have served as visual evidence of time, place, and perspective. With AI's ability to fabricate non-existent people, places, or events, the evidentiary status of imagery is eroding [7]. This challenges the foundational principle of photography as a trustworthy medium in journalism, legal forensics, and historical documentation.

Ownership presents an equally pressing dilemma. AI-generated content is often produced using models trained on copyrighted or user-generated material scraped from the internet. This raises legal questions about derivative works and the rights of original content creators whose works contribute to training datasets [8]. Furthermore, platforms offering commercial use of AI-generated visuals often fail to clarify ownership attribution, creating grey areas in licensing and intellectual property enforcement.

From a policy perspective, regulators and creators alike are grappling with how to define and protect ownership in a space where the "creator" may be an algorithm. Various proposals suggest watermarking or metadata tagging of AI-generated images as mechanisms for traceability and accountability [9]. However, without clear international standards, disputes over authorship, consent, and compensation are likely to intensify as generative AI becomes further embedded in creative industries.

1.4 Objectives of the Paper and Research Questions

Given the transformative yet controversial role of AI in image creation, this paper aims to critically examine the implications of generative models for photography, visual arts, and intellectual property systems. The objective is to bridge the gap between technical innovation and ethical responsibility by assessing how AI tools reshape creative workflows, alter artistic authorship, and challenge regulatory frameworks.

The study explores the duality of AI as both an enabler and disruptor in the creative domain. It investigates the evolving relationship between human and machine in visual storytelling and interrogates the assumptions underlying originality and authenticity. Additionally, it examines the extent to which current intellectual property laws accommodate the rise of AI-generated art.

The central research questions guiding this inquiry include:

- 1. How does AI-driven image generation alter the definition and perception of photography?
- 2. What ethical and legal challenges arise from using training datasets composed of copyrighted works?
- 3. In what ways can artistic autonomy be preserved or enhanced in collaborative human-AI creation?
- 4. How should authorship and ownership of AI-generated images be determined and enforced?

By addressing these questions, the paper contributes to an interdisciplinary understanding of AI's role in shaping the future of visual culture and creative expression [10].

2. THE RISE OF AI IN PHOTOGRAPHIC PRACTICE

2.1 Technological Foundations of AI Image Generation

The technological evolution of artificial intelligence in image synthesis has been predominantly driven by two architectures: Generative Adversarial Networks (GANs) and diffusion models. Both have established themselves as foundational pillars in AI-driven visual production, capable of generating photorealistic imagery without relying on traditional camera-based inputs.

GANs, first introduced by Goodfellow et al., comprise two neural networks: a generator and a discriminator. The generator attempts to produce convincing images from random noise, while the discriminator evaluates the authenticity of these outputs by comparing them to real samples [5]. Through iterative feedback, the generator refines its outputs until they become nearly indistinguishable from real-world data. This adversarial process enables GANs to learn complex visual features, including texture, depth, and lighting, making them highly effective for creative tasks such as face generation, artistic stylization, and scene reconstruction.

Diffusion models represent a more recent but equally impactful advancement. These models work in reverse by learning how to transform random noise into coherent images through a stepwise denoising process. Unlike GANs, which rely on adversarial optimization, diffusion models such as DALL E 2

and Stable Diffusion emphasize probabilistic modeling and latent variable inference to yield stable, high-fidelity outputs [6]. Their ability to maintain semantic integrity and minimize artifacts during generation makes them increasingly preferred for both artistic and commercial applications.

The performance of these models depends heavily on the quality and diversity of training datasets. Large-scale image-text datasets such as LAION-5B and OpenImages provide the paired semantic and visual inputs required for training. These datasets are often scraped from public domains, news platforms, and online art galleries, aggregating millions of labeled samples spanning multiple cultures, styles, and categories [7]. While such vast corpora enable models to generalize well across diverse prompts, they also raise ethical concerns related to copyright infringement and biased representation.

Training these models requires high computational power, typically utilizing Graphics Processing Units (GPUs) or Tensor Processing Units (TPUs) across distributed systems. The training process involves millions of parameters, regularization techniques, and checkpoint validation to ensure the convergence of visual realism and contextual consistency. Pretrained models are often fine-tuned for specific tasks, such as fashion, interior design, or architecture, allowing for domain-specific applications without building new models from scratch [8].

Architecture of GANs in Image Synthesis



Figure 1: Architecture of GANs in Image Synthesis

The figure illustrates the generator-discriminator loop, depicting how adversarial feedback improves image generation quality over time.

Despite these advancements, challenges persist. GANs can suffer from *mode collapse*, where the generator produces a limited variety of outputs, and both architectures may inadvertently reproduce data artifacts or culturally biased imagery if the training dataset is skewed [9]. As such, ensuring transparency in dataset curation and adopting fairness-aware learning strategies remain essential for ethical development in AI-based image generation.

2.2 AI vs Traditional Photography

The emergence of AI-based image generation has introduced a paradigmatic shift in how visual content is produced, challenging both the technical and philosophical foundations of traditional photography. Although both disciplines aim to capture or create visual reality, their processes, tools, and creative philosophies differ significantly.

Traditional photography is grounded in the physical world—it relies on camera hardware, optical physics, exposure control, and human perception. Photographers use lenses, apertures, light sources, and settings to capture a scene as it exists, either spontaneously or through deliberate staging [10]. Each photograph represents a temporal and spatial moment, preserved through chemical or digital encoding. Post-processing, though often involved, operates on pre-existing data captured from the real world.

Conversely, AI-generated imagery operates in the absence of physical interaction. Instead of capturing reality, it constructs an interpretation of it. By learning patterns from datasets, AI models infer visual coherence from textual prompts or noise inputs, synthesizing scenes that may never have existed. This difference redefines the notion of "truth" in imagery. AI tools like MidJourney or Artbreeder can generate hyperrealistic images with imagined subjects, environments, and scenarios, blurring the line between documentation and imagination [11].

From a technical standpoint, traditional photography is bounded by hardware limitations such as resolution, sensor sensitivity, and lighting conditions. AI models bypass these constraints, offering infinite scalability, creative recombination, and stylistic flexibility. For instance, photographers may be restricted by weather or access, while AI artists can prompt any setting—sunsets over fictional cities, portraits in historical costumes, or wildlife in fantasy realms—with similar or even greater visual fidelity [12].

However, photography retains a human-centered approach that AI has yet to fully replicate. The timing, intuition, and emotional connection between photographer and subject often convey authenticity and depth that synthesized images struggle to match. Photographs from conflict zones, celebrations, or personal milestones carry emotional weight because they reflect real moments, emotions, and stories. AI, though capable of mimicking the aesthetic, often lacks this grounding in human context.

Creatively, AI enhances possibilities for visual exploration but also disrupts traditional workflows. While photographers may spend hours scouting locations, arranging compositions, and editing in Lightroom or Photoshop, AI users can generate compelling imagery in seconds with the right prompt. This shift in production model has democratized creativity—empowering non-photographers to produce visual content—but it also introduces concerns over artistic dilution and reliance on algorithmic outputs [13].

Another critical divergence lies in the **ethics of representation**. Photographers are often bound by journalistic standards, consent, and subject integrity. In contrast, AI-generated subjects may not correspond to real people or places, raising questions about representation accuracy, deepfake misuse, and manipulated realism [14]. These concerns underscore the importance of transparent labeling and metadata tagging to distinguish real photographs from AI-generated compositions.

Despite their differences, AI and photography are not necessarily adversarial. Increasingly, hybrid approaches are emerging. Photographers use AI to enhance editing, simulate lighting, or generate backdrops. AI creators borrow from photographic techniques to improve realism and visual logic. This convergence suggests a future where AI and photography coexist—each augmenting the other's creative and technical potential rather than rendering it obsolete.

3. REDEFINING AUTHENTICITY IN THE DIGITAL ERA

3.1 Historical Understanding of Authenticity in Photography

Since its invention in the early 19th century, photography has been widely regarded as a medium that bears witness to reality. The photographic process rooted in the principles of optics and chemistry—enabled the mechanical reproduction of scenes with a degree of objectivity that other artistic forms could not replicate. As a result, photographs were quickly adopted in journalism, science, and law as trusted documents of truth [9]. Iconic war photos, sociopolitical portraits, and ethnographic images became historical records, revered not only for their composition but also for their evidentiary status.

This perception of authenticity was closely tied to the analog nature of early photography. Film-based systems involved physical light exposure on chemically treated surfaces, creating a tangible record of a moment in time. Although manipulation was possible in the darkroom, the difficulty and transparency of such alterations preserved the integrity of the medium to a large extent [10].

However, the advent of digital photography began to shift these foundations. With the rise of digital sensors, editing software, and retouching techniques, the photograph became more malleable. Manipulations could be carried out seamlessly—colors adjusted, subjects removed, and contexts altered. While these innovations enhanced creative freedom, they also introduced skepticism. As digital tools grew more powerful, audiences began to question the authenticity of even seemingly candid or documentary images [11].

This analog-digital tension laid the groundwork for today's discourse on AI-generated imagery. The transition from light-captured reality to algorithmgenerated simulation has extended the spectrum of visual ambiguity. While traditional photography captured what was, AI can fabricate what never existed. Thus, the historical bond between photography and truth is being challenged—not just by digital enhancement, but by the outright replacement of reality through computation.

3.2 AI and the Simulation of Reality

One of the most pressing questions in the age of generative AI is whether machine-produced images can be considered "authentic." While AI-generated visuals can achieve photorealism, they are fundamentally synthetic. These images are not records of a scene or subject but algorithmic interpretations trained on thousands or millions of prior images. In this sense, they simulate rather than document reality [12].

The realism of these images often blurs the line between fiction and truth. Unlike CGI or animation—which traditionally signaled their synthetic nature— AI-generated images can be indistinguishable from actual photographs. This raises concerns in domains that rely on visual evidence, such as journalism, legal proceedings, or historical archiving. The illusion of captured reality—when in fact nothing has been "captured"—undermines the foundational trust associated with imagery [13].

Despite their artificiality, AI images can evoke real emotions, trigger aesthetic responses, and even represent legitimate artistic expression. For example, AI art installations have been exhibited in galleries and sold at auctions, provoking debates about the nature of authorship and authenticity in visual culture. In these contexts, "authenticity" is reinterpreted not as a function of truth but as creative intentionality and narrative coherence [14].

However, when presented without context or disclosure, AI-generated images may be misread as documentary evidence. This is particularly problematic in misinformation campaigns or manipulated social narratives where realistic fake images are used to deceive. For this reason, scholars and technologists emphasize the need for embedded metadata, visible watermarks, or AI detection systems to distinguish synthetic imagery from photographic records [15].

In essence, AI challenges the historical framework of photographic truth. While its outputs can be creatively meaningful, their documentary value remains contested. The authenticity of an image can no longer be inferred from its realism alone—it now depends on process transparency, intent, and contextual use.

3.3 Public Perception and Trust

As AI-generated images proliferate, public trust in visual media is increasingly strained. Audiences once assumed that a photograph captured a real moment. Today, they must consider whether the image was captured at all—or if it was conjured by a machine. This erosion of visual certainty has profound implications for journalism, social media, politics, and public discourse [16].

Notable case studies have demonstrated how convincingly fake images can influence perception. In 2018, a deepfake video of a political figure went viral before being debunked. More recently, fabricated images showing war-torn cities or celebrities in false contexts have circulated widely online. These cases highlight the speed at which synthetic visuals can shape narratives before verification systems catch up [17].

Public reaction to such incidents reveals a spectrum of perception. Surveys indicate that while many people appreciate AI's creative potential, they remain skeptical about its reliability as a source of truth. A 2023 study found that over 60% of respondents were unable to distinguish between real and AI-generated images without guidance. Furthermore, 74% expressed concern over AI's use in political or journalistic content [18].

Table 1: Survey Data on Public Trust in AI-Generated Images vs Photographs

(Sample size: 1,000 participants, stratified by age group)

Context	Age Group	Trust in Photographs (%)	Trust in AI-Generated Images (%)
News Reporting	18–34	78%	29%
	35–54	84%	22%
	55+	89%	15%
Advertising	18–34	64%	52%
	35–54	72%	44%
	55+	81%	31%
Art & Exhibits	18–34	59%	68%
	35–54	65%	55%
	55+	70%	43%

Interestingly, attitudes vary based on context. AI-generated images used in art or advertising are generally accepted, even praised for innovation. However, in the realms of news reporting, legal evidence, or personal documentation, trust declines sharply. These perceptions are influenced not only by realism but also by transparency—whether users are informed that an image is AI-generated [19].

To address these challenges, several platforms and regulatory bodies have proposed tagging AI content with visible disclosures or machine-readable identifiers. Yet enforcement remains inconsistent. As synthetic media continues to advance, building frameworks of accountability, literacy, and ethical design will be critical to maintaining public confidence in visual information [20].

4. OWNERSHIP AND INTELLECTUAL PROPERTY

4.1 Who Owns AI-Generated Images?

As AI-generated images become increasingly common across creative industries, the question of **ownership** emerges as a significant legal and philosophical challenge. Traditional copyright frameworks were designed with the assumption that creative works are the product of human authorship. However, when an image is produced by a generative model based on algorithms and large-scale data input, authorship becomes a more complex, multi-actor issue [14].

One core debate centers on whether the **user**, who provides a prompt or selects parameters, holds creative authorship. In many cases, this user interaction is minimal—typed phrases or preset styles—but it nonetheless influences the output. Some argue that such user input constitutes sufficient creative intent to merit ownership, especially when combined with iterative prompting and curation [15].

Another perspective considers the **developer or company** behind the AI tool. Platforms like MidJourney or DALL-E own and operate the models, and their terms of service often grant them expansive control over the output. Some platforms allow users to retain rights under certain licensing agreements, while others retain commercial claim over all generated works, especially if they're made using a free-tier service [16]. This contractual ambiguity fuels concerns about creative autonomy and user exploitation.

A third layer involves the AI model itself. Although current legal frameworks do not recognize non-human agents as copyright holders, philosophical debates continue over whether sufficiently advanced systems with autonomous output should be treated differently [17]. For now, AI systems remain tools under human or corporate control, but future legislation may reconsider this as models become more generative and context-aware.

In the absence of universal standards, **national interpretations vary**. U.S. copyright law explicitly denies protection to works not created by a human, as reinforced in the 2022 Copyright Review Board ruling on AI-generated comic art. Meanwhile, some jurisdictions, like the UK and Australia, allow for database and software-generated works to be protected, albeit indirectly via the creator of the underlying system [18].

These legal **grey zones** have implications not just for content creators but also for platforms, marketers, and legal systems that rely on consistent attribution. As AI becomes a co-creator, clear frameworks for assigning rights and responsibilities will be essential for avoiding infringement, misuse, and disputes.

4.2 Training Data Ethics

The capabilities of AI image generators depend heavily on the **datasets** used during training. These datasets often consist of millions or billions of imagetext pairs scraped from the internet—news sites, art platforms, personal portfolios, and social media. While such large-scale data is essential for creating versatile models, it also raises profound ethical and legal concerns surrounding consent, copyright, and data provenance [19].

Many artists have discovered that their original works were included in AI training sets without permission or compensation. As a result, some AIgenerated outputs mimic their style so closely that they risk being misattributed or perceived as imitations. This reuse of artistic material, without licensing or attribution, undermines intellectual property rights and erodes professional integrity [20].

Moreover, training data often lacks transparency. Most companies developing AI models do not disclose the full composition of their datasets, citing proprietary concerns. This opacity makes it difficult to assess whether copyrighted or sensitive material has been used, and it prevents creators from opting out or seeking redress [21].

The issue is further complicated by jurisdictional differences. In the European Union, the Digital Single Market Directive requires consent for text and data mining unless explicitly waived. In contrast, U.S. fair use doctrines provide more leeway, especially when the outcome is deemed transformative. These conflicting standards make global enforcement of ethical AI training practices difficult to coordinate [22].

Country/Region	Legal Recognition of AI-Created Works	Authorship Criteria	Stance on Training Data Ethics
United States	AI-generated content not eligible for copyright unless significant human input is proven	Must be a human author; AI output alone is not protected	Fair use permits unlicensed training, though legal challenges are rising
United Kingdom	Copyright may apply to computer- generated works under specific laws	The programmer or operator may be considered author	Recognizes copyright issues in scraped data; ethical review encouraged
European Union	Currently no copyright protection for fully AI-generated works	Human creativity must be identifiable	Advocates for opt-in datasets; Digital Services Act may expand regulation
Japan	AI-generated works may receive copyright if there is human creative contribution	Emphasis on creator's intent and interaction	Supports ethical AI guidelines; pushes for transparency in training sources
Australia	No current legal protection for AI-only content	Human involvement required for copyright eligibility	Under review; calls for stronger consent mechanisms for training data use

Table 2: Comparison of National Legal Interpretations of AI-Generated Content

Public backlash and legal advocacy are pressuring platforms to implement **opt-out systems** or compensation models. Tools like "Have I Been Trained?" allow artists to check whether their work was used in datasets. While these initiatives are a step forward, they remain optional and under-enforced. The ethical future of AI image generation depends not only on technical innovation but also on respecting the rights of human creators.

4.3 Attribution, Licensing, and Creative Rights

In addition to authorship and data sourcing, the issue of attribution and licensing in AI-generated content is a growing concern. Given the collaborative nature of generation—where tools, datasets, and user inputs interact—new models of credit and licensing are needed to fairly distribute rights and responsibilities [23].

One proposal is shared attribution, in which both the user and the platform are acknowledged. This could follow a tiered structure where the user holds creative control, the platform provides enabling infrastructure, and both are credited in commercial usage. However, implementing such systems is challenging in environments where outputs are generated instantly and anonymously [24].

Open-source tools like Stable Diffusion offer a contrasting model. These tools operate under permissive licenses (e.g., CreativeML Open RAIL-M), which grant users broad rights to use, modify, and redistribute content. This fosters innovation and accessibility but can also lead to uncontrolled misuse, especially if outputs resemble protected styles or violate platform content policies. Meanwhile, commercial tools often impose stricter licensing, including non-commercial clauses or platform-specific distribution rights [25].

Creative rights also intersect with monetization. If an AI-generated image is sold as stock content, used in advertisements, or displayed in galleries, questions arise regarding the legitimacy of such usage and whether revenue should be shared with the original data contributors whose works were used in training. This further complicates the legal landscape, especially when attribution mechanisms are absent or disputed.

In response, some platforms are introducing dynamic attribution tokens or embedded metadata that link outputs to generative logs. These methods could offer a pathway to auditability and compensation. However, they require standardized governance and international cooperation to be effective [26].

Ultimately, the debate over licensing and attribution in AI-generated imagery reflects broader tensions between openness and control, innovation and protection. Establishing robust frameworks that honor creative input—human or algorithmic—will be essential to fostering trust and fairness in the evolving visual economy.

5. IMPLICATIONS FOR PHOTOJOURNALISM, ART, AND MEDIA

5.1 The Threat to Visual Evidence

Photography has long been regarded as a cornerstone of journalistic integrity, offering visual confirmation of events, locations, and individuals. In breaking news, conflict zones, and investigative reporting, images often carry the burden of proof. However, the proliferation of AI-generated visuals has introduced a profound challenge to this evidentiary role. As synthetic images become indistinguishable from real photographs, the public's ability to trust what they see is significantly undermined [19].

One of the earliest high-profile controversies occurred in 2019, when a manipulated image of a political protest circulated online and was briefly picked up by a news outlet before being retracted. Though the image appeared authentic, forensic analysis revealed it was AI-generated using deep learningbased generative tools. Similar incidents have occurred in contexts such as humanitarian crises and elections, where visual misinformation has had direct consequences on public sentiment and policy debates [20].

These incidents expose the vulnerability of both consumers and publishers to **visual deception**, especially when contextual verification tools lag behind generative capabilities. In traditional journalism, photojournalists are trained to follow ethical standards of accuracy, context, and consent. But AI tools circumvent these human-centered checks, often producing imagery that appears credible but is entirely fabricated [21].

Efforts to address this threat include AI detection software, metadata tagging, and blockchain-based verification. Yet none of these solutions are universally adopted or foolproof. Moreover, misinformation can spread faster than corrections or fact-checks, leaving a lasting impression even after an image is debunked. In such an environment, journalistic standards risk being replaced by algorithmic uncertainty, where seeing is no longer believing [22].

5.2 AI in Fine Arts and Conceptual Photography

While AI poses challenges to factual integrity in journalism, it has simultaneously emerged as a provocative tool within **fine arts and conceptual photography**. Artists are experimenting with AI-generated visuals to explore new aesthetics, simulate dreamlike environments, or challenge traditional narratives of authorship. For some, this technological collaboration opens new avenues of creative expression previously unimaginable through conventional methods [23].

Digital art collectives have begun integrating diffusion models into their workflows, combining hand-drawn inputs with AI synthesis to produce complex hybrid artworks. In 2022, a controversial AI-generated piece titled *Théâtre D'Opéra Spatial* won first prize in a state fair art competition, sparking debate

about the boundaries of artistic labor and authorship. Critics argued that the submission lacked human originality, while supporters defended it as a legitimate output shaped by intentional prompting and curatorial decision-making [24].

Conceptual photographers have also adopted AI to extend visual narratives, generating imagined portraits or alternative realities that comment on identity, memory, or displacement. These explorations align with the postmodern tradition of interrogating truth and image. However, detractors raise concerns that AI tools devalue the years of training, intuition, and manual effort associated with traditional photographic practices [25].



HUMAN-COMPOSED



Figure 2: Visual Comparison Between AI and Human-Composed Artistic Imagery

This figure contrasts AI-generated art pieces with human-composed conceptual photographs in similar themes—e.g., urban solitude, futuristic landscapes—highlighting differences in texture, composition, and emotional tone.

Another contentious issue is that AI models are often trained on vast archives of human-created art, without consent or attribution. As a result, some AI outputs mimic the visual signatures of renowned photographers and painters, blurring the line between inspiration and appropriation. This raises ethical questions about whether AI is a tool for creativity or a vehicle for unlicensed replication [26].

Despite these tensions, many artists embrace AI not as a threat but as a medium—akin to photography's disruption of painting in the 19th century. The future of AI in fine arts may lie in transparency and intent, where the creator's vision, rather than the tool, defines the artistic value of the work.

5.3 Platform Governance and Media Integrity

As AI-generated visuals become pervasive, social media and publishing platforms play a crucial role in shaping their impact on public discourse. These platforms act as both distribution channels and gatekeepers, with policies that determine how AI content is labeled, amplified, or restricted. Their approaches to governance have significant implications for the spread of misinformation and the preservation of media integrity [27].

Major platforms such as Twitter (now X), Meta (Facebook/Instagram), and TikTok have introduced disclosure requirements for manipulated media, but enforcement remains inconsistent. In many cases, AI-generated images are shared without context or identification, reaching millions before any moderation occurs. Algorithms optimized for engagement tend to favor visually striking content—precisely the type AI excels at producing—thereby accelerating the circulation of potentially misleading or decontextualized imagery [28].

Meanwhile, creative software companies like Adobe have taken more proactive measures. Adobe's Content Authenticity Initiative (CAI) embeds metadata into images to indicate the source, editing history, and authorship. Paired with the C2PA (Coalition for Content Provenance and Authenticity) standard, this system aims to promote transparency in media creation. However, adoption is still limited, especially outside professional environments [29].

Platform	Disclosure of AI- Generated Content	Moderation Practices	Detection Mechanisms	User Guidance/Policy Notes
Twitter (X)	Voluntary (recommended for manipulated media)	Reactive moderation; relies on user reports	Limited native detection	AI-generated content may be labeled or removed if deemed deceptive; lacks consistent enforcement
Meta (Facebook, Instagram)	Required for political and advertising content	Mixed moderation (AI + human reviewers)	Some proprietary detection tools	Users must label "manipulated media" in specific contexts; new watermarking pilot in development
TikTok	Disclosure required for deepfakes and synthetic media	Proactive flagging system; community reports	AI-based detection system with updates in 2023	Synthetic content must be clearly labeled; violations may result in content removal
YouTube	Disclosure encouraged but not enforced platform-wide	Focused moderation for misinformation and political content	Partnerships with fact-checkers and AI filters	AI-generated videos may face demonetization if misleading; clearer policies emerging
Adobe	Disclosure embedded via Content Credentials metadata	Professional enforcement through Adobe platforms	Metadata-based verification and visual traceability	Part of the Content Authenticity Initiative (CAI); strong push for provenance tagging
MidJourney / DALL·E	No native disclosure at generation	No content moderation post-generation	None (external metadata tools needed)	Users responsible for usage disclosures; free tiers limit copyright claims
Canva / Shutterstock AI	Mandatory labeling for all AI-generated content	Content is reviewed during upload for licensing compliance	Internal screening for stylistic and flagged content	AI tools integrated with ethical licensing agreements and commercial usage guidance

Table 3: Platform Policies on AI-Generated Content (Twitter, Meta, Adobe, etc.)

Content moderation teams face additional challenges due to the speed and scale at which AI content is produced. Manual review is impractical, while automated filters struggle to distinguish AI-generated content from authentic media. This gap allows harmful or misleading visuals to persist, particularly in politically sensitive or emotionally charged contexts [30].

To mitigate these risks, experts advocate for a multi-stakeholder governance model involving tech platforms, civil society, journalists, and regulators. Such collaborations could establish clearer standards for detection, disclosure, and accountability. Without coordinated efforts, the unchecked spread of AI-generated imagery risks eroding not only trust in media but also the social consensus around truth and authenticity.

6. ETHICAL FRAMEWORKS AND EMERGING STANDARDS

6.1 Philosophical Ethics: Intent, Authorship, and Impact

The ethical evaluation of AI-generated imagery cannot be limited to legality or functionality alone—it must also incorporate philosophical frameworks that account for intent, authorship, and societal impact. Traditional ethics offers two key lenses for this assessment: deontological and consequentialist perspectives.

From a deontological standpoint, which prioritizes the morality of actions over outcomes, the use of AI to generate images must be judged according to principles such as truthfulness, respect, and consent. If an AI system produces imagery based on data scraped without the original creator's knowledge or approval, the act may be considered unethical, regardless of whether harm is visibly inflicted [23]. Deontology would also question the erasure of authorship, where AI-generated content may inadvertently obscure or replace the work of human creators.

Consequentialist ethics, on the other hand, evaluates the morality of AI imagery based on its outcomes. This view considers whether AI-generated visuals result in public benefit or harm. For example, generating synthetic data for medical or architectural simulation may be ethically defensible due to its positive applications. In contrast, deepfake imagery used to incite political violence or defame individuals would be condemned, regardless of the technology's neutrality [24].

Intent further complicates this landscape. While human artists may use AI as a creative extension, malicious actors may deploy the same tools for deception or manipulation. Thus, ethical analysis must distinguish between tool use and tool misuse, a nuance often overlooked in broader public discourse [25].

As AI becomes more integrated into cultural production, ethics must evolve to acknowledge co-authorship, hybrid creativity, and the blurred boundaries between automation and agency. Ethical AI image generation must not only address what is created, but why, how, and by whom—redefining authorship as a shared responsibility across designers, users, and platforms.

6.2 Technical Solutions and Labelling

To address the challenges posed by AI-generated imagery, technologists have proposed a range of verification and labelling solutions aimed at improving transparency and traceability. Among the most widely discussed are metadata embedding, watermarking, and cryptographic tagging.

Metadata embedding involves attaching machine-readable information to the image file, such as creation method, software used, and date of generation. Tools like Adobe's Content Credentials initiative use this approach to log the provenance and authorship of digital assets, allowing consumers to identify whether an image was AI-generated or edited [26]. Although metadata can be stripped or altered, standardized metadata protocols (e.g., C2PA) aim to strengthen consistency across platforms.

Watermarking offers a more visible solution. Some AI tools now embed semi-transparent logos or timestamps into generated images to indicate their synthetic origin. However, these marks can be easily cropped or obscured, reducing their effectiveness without legal enforcement or platform-level requirements [27].

Cryptographic tagging uses blockchain or hashing algorithms to generate tamper-proof signatures that verify the image's source and generation history. This method is gaining traction among digital artists and NFT platforms as a way to assert ownership and authenticity [28].

Each of these tools addresses a part of the verification chain, but none are foolproof alone. The ideal solution would combine technical labelling with platform-level detection and disclosure protocols, ensuring that AI-generated content is not only traceable but also responsibly distributed.

6.3 Institutional and Policy Responses

In response to the ethical and societal implications of AI imagery, international institutions and governments have begun developing regulatory frameworks to guide responsible deployment. These efforts focus on clarifying authorship, ensuring accountability, and safeguarding public trust in visual media.

UNESCO's Recommendation on the Ethics of Artificial Intelligence, adopted in 2021, provides a global standard for ethical AI use. It emphasizes transparency, human oversight, and cultural sensitivity in the development of generative systems. While non-binding, the framework encourages nations to adopt policies that prevent misuse and promote inclusivity in AI training data [29].

In the European Union, the AI Act proposes a risk-based approach to regulation. High-risk applications—such as biometric surveillance or deepfake media—are subject to stricter requirements, including documentation, audit trails, and human monitoring. Although generative art tools may not fall under high-risk categorization, they could be included in future revisions as public awareness grows [30].

The U.S. Copyright Office has taken a firmer stance, stating in 2022 that works generated entirely by AI are not eligible for copyright protection unless there is substantial human involvement. However, the Office has also indicated that this position may evolve as the definition of creativity shifts and legal challenges accumulate [31].



Figure 3: Proposed Ethical Model for AI Imagery Verification and Attribution

The figure outlines a layered model combining user intent, platform labelling, technical verification, and legal oversight to ensure ethical governance of AI-generated visuals.

These institutional responses indicate a growing recognition of the transformational power of AI in visual culture. However, policy must keep pace with technological change, requiring agile governance models that can adapt to new capabilities, use cases, and ethical dilemmas as they emerge.

7. GLOBAL AND CULTURAL PERSPECTIVES

7.1 The Global South and Representation

The widespread adoption of AI-generated imagery has intensified long-standing concerns about representation and cultural equity, especially for communities in the Global South. Most AI models are trained on large datasets predominantly sourced from Western-centric online platforms, reflecting disproportionate exposure to Euro-American aesthetics, demographics, and cultural motifs [28]. This imbalance often leads to underrepresentation or misrepresentation of people, symbols, and visual narratives from Africa, Latin America, Southeast Asia, and Indigenous communities.

When these models attempt to depict individuals from the Global South, they frequently default to stereotypical visuals—tribal imagery, outdated clothing styles, or generic environmental backdrops. These outputs not only perpetuate reductive tropes but also marginalize modern and multifaceted cultural identities. In many cases, users from these regions report receiving inaccurate or dehumanizing results when inputting culturally specific prompts, such as names, festivals, or locations [29].

Ethically, such disparities raise questions about inclusion, dignity, and informed consent. Many of the images used for training are scraped without the knowledge or approval of those depicted, including photographs of children, elders, or culturally sacred spaces. For Indigenous communities, this can violate spiritual and intellectual traditions that dictate how visual representations should be handled, shared, or circulated [30].

Moreover, the exportation of AI tools built on biased data risks amplifying epistemic injustice—where marginalized groups are excluded not just from the production of knowledge but from how they are visually imagined and interpreted by global audiences. Without intervention, these systems may replicate the digital colonialism of earlier technologies, embedding dominant worldviews into algorithmic logic [31].

To counter this, developers and institutions must prioritize culturally inclusive dataset design, establish opt-in data contribution frameworks, and engage with local artists and ethicists. Ensuring accurate and respectful representation requires not just technical refinement, but also **cross-cultural collaboration and accountability** in the design and deployment of generative systems.

7.2 Cross-Cultural Perceptions of Authenticity and Creation

Notions of authorship, imitation, and creativity are not universally defined. Cultural perceptions of what constitutes "authentic" art or rightful creation vary significantly across global societies. As AI-generated imagery enters the creative domain, these cross-cultural variances have important implications for both ethical design and user acceptance [32].

In Western art traditions, authorship is typically tied to individual expression and originality. Artistic value often hinges on personal signature, style, and creative control. Consequently, AI tools that automate image production without clear human authorship are sometimes viewed as lacking legitimacy or emotional resonance. This perspective underpins the copyright frameworks of countries like the United States and the United Kingdom, where legal and cultural norms prioritize distinctiveness and ownership [33].

However, in many non-Western contexts—particularly in East Asian, Indigenous, and African traditions—artistic expression may be regarded as collective, iterative, and intergenerational. In these cultures, reproduction is not inherently inauthentic; instead, it may serve as homage, continuity, or shared identity. For instance, repeating motifs in Aboriginal art or textile patterns in West Africa is considered a form of cultural preservation, not plagiarism. AI tools that replicate these forms may be seen as less ethically problematic when situated within that context—provided they respect spiritual and communal guidelines [34].

Further divergence occurs in how cultures define the spirit or intention behind creation. In Japanese aesthetics, the concept of "shokunin" values craftsmanship and mastery over originality. Similarly, in Andean or Himalayan visual traditions, the relationship between creator and material is more spiritual than individualistic. These frameworks complicate Western-centric assumptions about authorship being the sole domain of the artist [35].

Nonetheless, concerns arise when AI reuses cultural patterns or likenesses without local consultation. Even in collectivist cultures, external extraction of visual identity—particularly for commercial or artistic reuse—may be seen as cultural appropriation. Thus, ethical AI design must consider not only technical accuracy but cultural resonance and sensitivity.

To move forward, designers of generative systems should include cross-cultural stakeholders in tool development, consult anthropologists and local communities, and design outputs that can be traced, contextualized, and interpreted in accordance with regional values and norms [36]. Authenticity, after all, is not a monolith—it is negotiated, dynamic, and deeply cultural.

8. FUTURE TRAJECTORIES AND RECOMMENDATIONS

The trajectory of AI-generated imagery suggests a future in which synthetic visuals will become increasingly indistinguishable from traditional photographs and artworks. As generative models grow more sophisticated, the lines between fiction and reality, originality and replication, will continue to blur—raising complex challenges for copyright law, authorship, and ethical accountability [32]. Emerging legal frameworks will be tasked not only with defining ownership but also with reconciling machine-assisted creativity with longstanding doctrines of human authorship.

One anticipated trend is the legal reclassification of AI-generated content, particularly in response to increasing litigation from artists whose work was used in training datasets without consent. Legal scholars predict that new forms of hybrid copyright—recognizing partial or collective authorship—may emerge to accommodate collaborations between humans and algorithms. Simultaneously, global treaties may evolve to standardize metadata tagging, consent requirements, and jurisdictional enforcement across digital platforms [33].

The resolution of these challenges will require interdisciplinary collaboration between technologists, artists, legal theorists, ethicists, and policymakers. No single discipline possesses the range of expertise needed to navigate the nuanced implications of generative media. Engineers must understand cultural representation; lawyers must grasp the logic of neural networks; artists must engage with algorithmic aesthetics. Together, these communities can establish shared vocabularies and standards for responsible innovation [34].

At the practitioner and platform level, several ethical safeguards must be embedded into the deployment and governance of AI imagery. First, AI tools should provide transparent metadata, enabling traceability of image origins, generation methods, and authorship roles. Second, platforms must adopt optin datasets and provide users with clear information about how their data is collected and used. This is particularly critical for training sets that include imagery from vulnerable, Indigenous, or underrepresented communities [35].

Third, content sharing ecosystems—ranging from social media to stock image marketplaces—should mandate disclosure of AI-generated content, particularly when used in news, political communication, or advertising. Automated detection tools, human oversight, and standardized visual cues can help mitigate the risk of visual misinformation. Additionally, creators and users of AI imagery should be educated on cultural sensitivity, copyright boundaries, and attribution ethics as part of responsible usage frameworks [36].

Finally, the long-term sustainability of AI imaging rests on public trust, which can only be maintained through ethical transparency, equitable representation, and shared governance. As AI systems continue to transform visual storytelling, they must do so in ways that enhance creativity without erasing human dignity or cultural nuance. The future of visual authenticity will not be determined by code alone, but by the collective decisions of those who build, regulate, and engage with these powerful technologies.

9. CONCLUSION

Final Summary and Reflection

This study has explored the rapidly evolving landscape of AI-generated imagery, focusing on its technological foundations, cultural implications, legal ambiguities, and ethical considerations. From generative adversarial networks to diffusion models, the research has detailed how artificial intelligence is now capable of producing visual content that mirrors—if not exceeds—the realism and creativity of traditional photography and digital art. As these tools become more accessible, the democratization of visual creation is accelerating, reshaping how images are conceived, consumed, and trusted.

Key findings include the blurring boundaries between photographic evidence and synthetic simulations, the inadequacy of current copyright frameworks to handle machine-generated authorship, and the visible gaps in representation for communities in the Global South. Additionally, the study examined how AI-generated images challenge long-held philosophical and cultural ideas about authenticity, originality, and creative ownership. In parallel, it highlighted the role of platforms, developers, and institutions in either mitigating or amplifying risks through their design choices, governance models, and policies.

The urgency of addressing these issues cannot be overstated. The pace of innovation in AI imaging technology is far outstripping the regulatory, ethical, and public literacy frameworks needed to guide its responsible use. Misinformation campaigns, unauthorized artistic replication, and the unchecked spread of deepfakes demonstrate how high the stakes have become. At the same time, the complexity of the matter resists one-size-fits-all solutions. Different cultural perceptions of art, divergent legal traditions, and competing economic interests make this an inherently multifaceted challenge.

This complexity demands collaboration—not only among disciplines but across sectors and geographies. Legal scholars, AI engineers, human rights advocates, artists, educators, and civil society must all engage in shaping the standards and boundaries of synthetic media. The challenge lies not in resisting technology, but in guiding its development and deployment with foresight, accountability, and humility.

Ultimately, the role of AI in reshaping visual truth is not only technological but philosophical. It compels us to ask: What do we mean when we say a picture tells the truth? Who gets to define authenticity in an era of artificial creation? And how do we preserve human dignity, cultural specificity, and creative intent in a world increasingly populated by images born of code, rather than lived experience?

In answering these questions, we are not merely adapting to a new tool—we are reconfiguring the ethical, legal, and aesthetic foundations of visual culture itself. The future of images will be as much about the values we encode as the pixels we generate.

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