Impact of AI on Art and Design Industry

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Artificial intelligence (AI) has transformed the art and design industry by redefining creativity, production, and perception in art. This paper considers AI as both a tool and a co-creator and its impact on artistic processes, accessibility, and economic models. Although AI offers democratization of art production and increased creative possibilities, it also raises ethical concerns on authorship, intellectual property, and the depreciation of human creativity. Through the lens of historical development, technological advancements, and professional opinions, this study examines the socio-economic and ethical implications of AI-generated art. It covers issues such as job displacement, biases in training data for AI, and copyright issues, along with possible solutions such as regulatory policies and mixed creative processes. Ultimately, using a literature and a diversity of sources, this study seeks to find a balance between technological advancement and creative integrity, with AI acting as a catalyst for, rather than a substitute for, human creativity. It should be noted that this work is a literature review and does not include any independent research of its own.

Keyword: Artificial Intelligence, AI-art, artistic expressions , machine learning, Generative Adversarial Networks

Introduction

Artificial intelligence has radically changed the perspective of art and design by reshaping the way creative works are created, produced, and perceived. From generating intricate digital paintings to assisting in architectural visualization, AI has moved from merely being a tool to a co-creator in the artistic process. However, this change brings up vital discussions about AIs impact on creativity, authorship, and originality, with consequences for artists, designers, and the entire creative industry.

One hand, most of the peer-reviewed literature on AI in the arts has been related to automating artistic processes, generating new and unique visual compositions, and even emulating human creativity whereas on the other hand, there is a plethora of resources from art historians and artists themselves, discussing the implications of the use of AI in a artistic world influenced by culture, emotions and lived experiences[1–4] Scholars have investigated the use of machine learning algorithms for style transfer, procedural generation, and adaptive design. However, despite the extensive focus on technical developments and their impact on the art market and on artistic professions, there are still some important aspects of the consequences of using AI which provokes consid- erable debate. Among other significant issues, the issues of authenticity, intellectual property, moral responsibility for created works, and the devaluation of human creativity need more profound reflection.

This literature review aims to explore the reported influences of artificial intelligence on creativity, authorship, and artistic authenticity within the art and design industry, as discussed in existing research. It also examines the socio-economic and ethical consequences of integrating AI into artistic production as presented in the literature and reviews perspectives on how AI and human creativity can coexist without compromising artistic integrity. It should be noted that as this study is based solely on a review of existing literature, it does not establish causal relationships but rather identifies key themes, debates, and trends reported by scholars and practitioners in the field.

Expert opinions were collected through structured qualitative analysis of articles, published papers, and commentary from contemporary artists and technologists. These insights were examined thematically to identify major trends, ethical concerns, and recurring patterns in discourse.

This study analyzes the impact of AI on art and design by integrating historical, technological, and ethical perspectives. Section 2 presents an overview of the historical development and key technological milestones in

AI. Particular attention is paid in Section 3 to the democratization of artistic tools and changes in traditional creative processes, as well as to the social, economic, and ethical implications of AI. Issues of authorship, authenticity, and responsibility for AI-generated art are also explored. Section 4 reviews the current solutions available in the literature to address these challenges, especially in artistic spaces where inspiration and emotion remain central to creation. Based on the analysis of literature, case studies, and expert perspectives, the study contributes to the existing body of knowledge by highlighting underexplored human-centered concernssuch as the devaluation of originality, unclear ownership, and emotional detachment. It fills a gap in

the current literature by offering a multidisciplinary view on the harmonious coexistence of AI and human creativity, advocating for technological progress that preserves artistic value and cultural integrity.

Review Methodology

A systematic search of peer-reviewed literature published between 2015 and 2025 was conducted across multiple academic databases, including Google, Google Scholar, and Archive. The search terms used were AI-generated art, artificial intelligence in art, AI and creativity, AI in art education, AI-enabled art ethics, and generative AI. Results were filtered to include only English-language and peer-reviewed academic publications, and miscellaneous articles were also considered.

Studies were selected based on the following inclusion criteria: they had to be published between 2015 and 2025, directly address the relationship between AI and art (e.g. creativity, perception, education, or ethics), be available in full-text format, and include a clear description of the methodology and results. For each selected study, information was extracted on the author(s), year of publication, aims of the study, methodological approach (qualitative, quantitative or mixed methods), key findings and any stated limitations. This information was organized at the end of the paper for easier review

A synthesis of the selected studies was conducted using a narrative review method. Articles and studies were thematically grouped into three main categories: perception and quality of AI-generated artworks, ethical and legal aspects and the impact of AI on art education. However, some articles were used to supplement information and were used independently of the three categories. Finally, studies were assessed for quality based on the clarity of the study design, relevance to the central research questions and transparency of the methodology.

AI and its emergence in the art and design industry

AI in the art industry & design industry

Art is generally defined as a form of creative expression that conveys meaning, emotion, or aesthetic value. It is also viewed as the culmination of human experiences (John Dewey, 1934). While traditional art is often seen as a deeply human activity, AI is considered a creative entity with the argument that its outputs can be judged as art based on their aesthetic and emotional effects, regardless of the lack of human-like intent[5]. While some side with David Hockney, claiming that true art requires human intent and emotion, whereas AI lacks personal experiences and feelings and hence cannot create art, others believe that if art is judged by its impact rather than its creators intent, AI can indeed be considered an artist.

(a) Drawing, computer-generated, with hand colouring, by Harold Cohen, 1977-1982.

(b) Drawing, computer-generated, with hand colouring, by Harold Cohen, 1974.

Images generated by AARON, believed to be the first computer program able to generate images independently.

The journey of AI in art started decades ago, long before the advanced models that we see today. In the 1960s and 1970s, there were early efforts to bring artificial intelligence into the creative process. In 1965, Edward Feigenbaum and Joshua Lederberg developed DENDRAL, the first expert system designed to analyze chemical compounds, setting the stage for AI-driven creativity[6] It is the year that the German artist Frieder Nake independently wrote a computer program to make abstract geometric works, helping to pioneer the work of com- putational art[7]. In 1973, after his move to the United States as a visiting lecturer at the University of California, San Diego, leaving behind his practice as an established painter in London, Harold Cohen created an AI program called AARON, which was capable of making images and was among the first true AI generators of art[8]. The name AARON chosen by Harold, examines how artistic production is frequently exalted as a means of communication with the divine, while also making reference to the historical character who was anointed as a spokesperson for his brother Moses. Cohen saw his work with AARON as a partnership, and he dedicated his life to investigat- ing how artificial intelligence may be used to convert an artists method and understanding into code[9] ((Harold cohen: Aaron feb 3may 19, 2024, https://whitney.org/exhibitions/harold-cohen-aaron. Accessed: 02/23/2025)). Figure 1 shows two of the images produced by AARON in its early days with hand coloring made by Harold Cohen.

In the 1980s and 1990s, AI art made small but important progress. Cohen demonstrated AARONs capabilities, showing that an AI system could create images on its own after being programmed, without direct human input for each piece[8]. In the 1990s, genetic algorithms and fractal-based techniques emerged, allowing artists and researchers to create evolving artworks and showing AIs potential for adaptive creativity[7]. Until the early 2000s, there was finally fast progress in the creative capabilities of AI, which culminated in 2006 when Ian Goodfellow introduced Generative Adversarial Networks (GANs)[10]. This revolutionary AI let machines create images that were hyper-

realistic. In 2014, GANs had already taken over the whole AI art scene with neural networks capable of producing realistic portraits, landscapes, and abstract art[10].

In 2015, DeepDream was a Google AI-powered tool that used neural networks to morph existing images into some quite surreal, dreamlike imagery. A year later, Style Transfer technology, which was made popular by applications such as Prisma, let users turn their photos into paintings in the style of famous artists, like Van Gogh or Picasso[6] AI-generated art, by 2018, became a sensation within the global market for art. Edmond de Belamy, an AI-generated portrait with GANs, sold to the astonishing price of 432, 500 on an auction that was organized by Christies; this marked, in history, a point wherein AI-generated art was recognized to be a well-and-good medium of art in itself[6]. Beginning with 2020, AI has been the stronghold of digital artists, entrepreneurs, and creatives. In 2020, OpenAI developed DALLE, capable of outputting images from text descriptions, making AI creativity much more accessible than ever before. The same year, NFTs, or non-fungible tokens, became huge and allowed AI-generated art to be sold, owned, and authenticated on blockchain networks[10].

By 2021, the OpenAI CLIP model took AI art one step further, where machines could understand and create images more precisely from textual prompts[6]. That was followed in 2022 by Stable Diffusion, capable of creating photorealistic images from text prompts, and MidJourney, a platform that made AI art user-friendly and widely adopted[10].

As AI has continued to evolve, so have discussions of its effect. In 2023 and 2024, the debate about AI- generated art is about issues dealing with copyright, authorship, and originality. Can AI really be regarded as an artist? Should it legally be considered to be treated like other created works? And what of those artists whose career and existence depended on the art being produced conventionally[4]? Whatever the case, AI is a giant tool in innovative art: continuously changing laws and policies, shifting technologies, values, and artistic investigation will undoubtedly continue to redefine the interplay of AI with creativity in newer ways.

Issues related to the use of AI art in the art and design industry

Of course, artificial intelligence (AI) has its drawbacks. For example, people lose their jobs because of AI, as it copes with tasks faster and more efficiently ((Ai will transform the global economy. lets make sure it benefits humanity., https://www.imf.org/en/Blogs/ Articles/2024/01/14/ai-will-transform-the-global-economy-lets-make-sure-it-benefits-humani Accessed: 02/02/2025)) According to the International Monetary Fund (IMF), approximately 40% of jobs worldwide are at risk of being affected by artificial intelligence (AI). The situation is even more pronounced in advanced economies, where up to 60% of jobs could be impacted. However, about half of these roles may benefit from AI integration through increased productivity. In contrast, for the other half, AI applications could take over core tasks currently performed by humans, potentially leading to reduced labor demand, lower wages, and fewer hiring opportunities[11]. In addition, there is a lot of mistrust and bias around AI: according to Gallup, 75% of Americans believe that artificial intelligence will lead to a reduction in jobs over the next 10 years, and 79% do not trust businesses to use AI responsibly[12]. Today, artificial intelligence can create masterpieces at the users request, which in the future may replace artists and designers. Also, with the help of AI, you can edit photos, which reduces the demand for the services of professional retouchers and photoshoppers.

People are biased towards AI primarily because of mistrust. One of the main reasons for this is the fact that machines make decisions based on algorithms that are not always transparent to an ordinary person[13]. If the system makes a mistake or makes an incomprehensible decision, this causes caution. In addition, the formation of mistrust is influenced by films and TV series in which AI is presented as a threat to humanity - be it the capture of the Earth or a complete loss of control over technology[14].

Today, anyone can go to a website where AI will create a picture on request (prompt), and after a short wait (about 1-2 minutes) get the finished result. Then the image can be edited, details added, elements replaced - in general, adjusted as desired. On the Internet, you can already see a huge number of works created by artificial intelligence, which are called art. On the one hand, this opens up new opportunities, but on the other, it can threaten drawing as a way to earn money. In addition, AI art gives rise to serious questions related to copyright[15]. Artificial intelligence is trained on huge amounts of data, including the work of real artists, often without their permission[15] . This causes controversy about who owns the result of the neural network - the developers, the users, or the authors of the original works that served as the basis for training the AI. Many artists are already faced with a situation where their styles are used without their consent, and the images created by AI look as if they were drawn by a real person.

Along with mistrust and job losses, AI also raises concerns about plagiarism. A notable example is the case of Polish digital artist Greg Rutkowski, whose name was reportedly used in over 95,000 prompts in AI image generation (on platforms like Lexica.art)surpassing the mention counts for historical masters like Picasso, Van Gogh, and Rembrandt[16]. He initially thought this would help him reach a new audience, but later noticed that searching for his name brought up works created by neural networks, rather than his original works. He fears that over time, search engine algorithms will show mostly AI art, making it increasingly difficult to find his real work[6]. As you can see, the use of Artificial Intelligence is changing the world of art and design, creating new opportu- nities, but at the same time

raising serious questions about ethics, copyright and the value of human creativity.

Impact of AI in the art and design industry

Socio-economic Impact

Artificial Intelligence has a big impact on the industry of art and design, from both economic and social per- spectives. Such integration of machine learning with generative models transforms the creation, distribution, and monetization of artistic content [17]. While AI opens up new avenues, it also introduces ethical and social chal- lenges to the industry in equal measure.

One major economic impact of AI in the creative industry is the automation of processes. This has become possible because of tools such as DALLE, MidJourney, and Stable Diffusion. They can generate images after a text prompt in very short periods, bypassing elaborate works by designers and illustrators. According to a study by Theoria [18], this has resulted in a greater increase in designer productivity by 30-40% because some routine, mechanical tasks are taken over by algorithms [18]. Beyond automation, AI is also replacing job opportunities for artists. One real-world example is British il- lustrator Sam Shearon, who has worked with bands like Iron Maiden and Rammstein. Shearon once hoped to collaborate with death metal band Deicide and reached out to their frontman. Initially, there was interest, but later he discovered that Deicides album cover had been generated by AI. He expressed frustration, stating, I would guess that theyve actually paid someone to make an AI piece, which almost doubles the icky feeling, the joke of it all. If that was paid for, theyve been robbed. This case highlights how AI-generated art is directly taking opportunities away from human artists [19]. Besides increasing efficiency, AI decreases the cost of content creation. For example, companies that employed automated design solutions managed to decrease their expenses on graphics and advertising materials by 20% on average [20]. This is so promising for small and medium-scale businesses that AI tools will provide them with the ability to create professional visual content without any need to hire expensive specialists.

However, AI is not only affecting painters and illustrators but also photographers. Professional photographer Chazz Gold has expressed concerns about AI-generated images replacing traditional photography. Theres real photography done with a camera, and then theres post-photography, which is also great. As a photographer, Im a little worried that post-photography will take a lot of jobs from photographers, because its easy to create realistic images with AI, especially with tools like Midjourney. This statement underscores the growing fear among creative professionals that AI-generated content will devalue their craft [21].

In addition, AI-based digital art development has, further, encouraged new markets. The non-fungible token, or NFT, sector makes active use of generative algorithms to create singular digital works, sold on platforms like OpenSea and Foundation. Sales of NFT art topped 2.5 billion in 2021, a great portion of these having been created with the use of AI [22].

AI has an enormous social impact on the artistic community, not just economic. It enables broad accessibility: platforms like Runway and Artbreeder allow users without formal artistic training to generate visual content within seconds a form of democratization of creation [20]. However, access to advanced tools like Midjourney is mainly subscriptionbasedwith plans ranging from $10 to $120 per month, depending on the tierwhich is not affordable for some creators. Meanwhile, in low-income countries, only about 27% of the population has internet access, compared to around 93% in high-income nations, and internet subscriptions in poorer regions can cost up to 89% of monthly income for basic broadband [23]. As a result, the narrative of universal democratization of AI art is misleading: the necessary infrastructure, devices, and affordability are predominantly available in wealthier regions, while creators in lowincome or rural areas remain largely excluded.

Beyond accessibility, AI-generated art also raises significant ethical concerns. One of these concerns is copyright. The algorithms used in machine learning include huge amounts of data, which also includes works from real artists, raising several questions about their legality. Many artists feel that their styles are being copied without permission and call for strict regulations to protect intellectual property [18].

The impact of AI on the labor market is another great factor. While some professionals adjust to new tech- nologies and use AI as a helping hand, some of them have a risk to lose their jobs. For example, companies hire automated services instead of traditional designers, which, in the future, may affect job cuts within this sphere. According to one study by Adobe, about 25% of designers already report feeling pressure amid the proliferation of AI tools within their industry [22].

Finally, AI in art opens debates on the issues of creativity and authenticity. On one side, algorithms provide new forms of visual art that combine different styles and techniques. On the other side, the critics argue that generative art lacks soul and emotional depth because it is created based on mathematical computations rather than the personal experience and feelings of the artist.

AI transforms the whole of the Art and Design industries due to many economic benefits coming together with the biggest social challenge. It hastens the speed, decreases content creation costs, unlocks new markets, and democratises the world of art for everyone. In addition, traditional professions are in jeopardy, raise a bunch of copyright concerns, and redefine creativity within societies. The industry has to change with regard to new conditions: it has to elaborate ethical standards and find some kind of balance between innovation and the saving of cultural values.

Impact on artists creativity

Artificial Intelligence (AI) has had a significant influence on the art world, transforming the creative process for professional and amateur artists alike. As an integral part of the creative industry today, it offers tools that have the potential to assist artists in generating ideas, refining technique, and producing more efficiently [18]. Ma- chine learning models and GANs allow artists to experiment with new styles and automate repetitive processes. AI-created art has enabled artists to push new boundaries, combining computational techniques with traditional methods to come up with new works [20]. Certain technologies allow artists to modify their works of art dynamically, providing real-time feedback and suggestions that augment their vision. Moreover, AI-driven analytics provide artists with the ability to interpret trends in the industry, enabling them to tailor their work to the tastes of the audience without compromising originality.

As AI reshapes artistic creation, it also challenges traditional notions of art history. Art historian Vincent Magani argues that how we define art history determines whether we accept AI-generated works as legitimate. If you treat [art history] as a discipline to be controlled, you are inclined to reject DALLE 2 images. If you see art history simply as an expression of the global history of image-making, then logically you must accept DALLE 2 [24].

While AI provides an avenue for artistic development, its increasing ability raises matters of originality and authorship in art [25] reflect that AI can either enhance human creativity or trivialize the artists role through the automation of enormous segments of the artistic process. AI is being embraced by certain artists as a collaborative tool, while others fear that it could replace human-initiated creativity. In addition, AI software can create art that lacks the emotional quotient and cultural relevance of art created by humans. There is also the issue of over-reliance on AI, where artists become too dependent on algorithmic assistance, to the extent of losing their own creative voice. Additionally, there are intellectual property issues, as works created by AI question the conventional understanding of authorship and ownership in the creative industry. The future of AI art is contentious. While AI offers great potential to augment creative potential, it also presents problems that must be addressed, including ethical questions and the preservation of artistic integrity. AI-generated art commodifies creativity, making it a question of efficiency and mass production rather than personal expression, in the view of some critics. Nevertheless, proponents believe that AI is a useful tool that democratises art, making advanced creative software accessible to people who might not have traditional art backgrounds. As AI evolves, maintaining a balance between technological assistance and human creativity would be essential to safeguarding the uniqueness of creative expression.

AI has undoubtedly revolutionized the landscape of artistic innovation, serving as both a source of innovation and a source of ethical and professional challenges. Its prospects in the creative sector will depend on how artists, policymakers, and society navigate the trade-off between automation and human creativity. Maintaining AI as a complement, rather than a replacement, for human creativity will be central to shaping the future of art in the digital age. The evaluation of AI-generated art involves both traditional and emerging metrics. Classic criteria like aesthetic value and technical skill remain relevant, but new factors such as novelty and prompt coherence have become important.

(a) AI-generated artwork (Midjourney V6.1) **(b)** Human-created artwork.

The telltale sign is the integrity of the boats. Notice how the boats on the second artwork have curved edges? Its trying to simulate brush strokes without really paying mind to what makes a boat, a boat. Another subtle difference is that the reflection on the river of the trio on the left side dont really correspond to what they actually look like [26].

In a study by Zhou et al. (2024) [27], participants were shown a mix of human-made and AI-generated artworks and asked to rate them based on creativity, emotional impact, and originality, without being told which pieces were AI-made. Results showed that AI-generated art was viewed as equally creative, but less emotionally resonant, indicating a perceived lack of emotional depth [27].

Similarly, Mitchell et al. (2023) conducted a controlled experiment where participants evaluated images in two roundsfirst unlabeled, then labeled as either human- or AI-generated. When not labeled, 43% of participants rated AI art as more technically complex than human works. However, once the AI origin was revealed, participants evaluations became more critical, highlighting how labeling bias affects perception [26] These studies highlight the need for hybrid evaluation frameworks that incorporate both objective criteria and subjective perception, accounting for psychological and contextual influences on how AI art is judged.

Ethical Implications

Researchers working with AI in the arts must carefully consider ethical concerns such as bias, authorship, and po- tential misuse of AI-generated art. AI-generated reconstructions of lost or damaged artworks, for example, may in- troduce historical inaccuracies by relying on assumptions rather than factual evidence. Furthermore, scholars warn that AI technologies could be used for surveillance and content control. As Lizarraga emphasizes, AI-generated content depends on systems that prioritize existing power structures, and this must be actively addressed[21] From an ethical perspective, the use of artificial intelligence (AI) in art has raised monumental issues that affect professional artists and the broader society. As AI art becomes more popular, authorship, intellectual property rights, cultural impact, and economic impact become increasingly worrisome. Authorship is one of the most debated ethical issues for AI in art. Traditional art methods center around the creative work of human artists, but AI art dissolves originality and ownership boundarie[28] Recent legal cases highlight the complexity of AI and copyright. In Zarya of the Dawn (2023), the U.S. Copyright Office denied protection for images created by MidJourney, stating that only human-made works are eligible. Another case, Getty Images v. Stability AI, accuses an AI company of using millions of copyrighted photos without permission. These cases show how different jurisdictions are still debating whether AI-generated content qualifies for copyright or falls under fair use. The majority of AI models are trained using large collections of copyrighted works of art, and the question is whether these models are simply copying or reworking material. However, not all training data pose the same legal and ethical challenges. There is a significant difference between scraping publicly available images from platforms like Instagram which in some jurisdictions may fall under fair use or text-and-data-mining exceptions and using copyrighted, paywalled portfolios without permission, which constitutes a clear violation. Legal authorities such as the U.S. Copyright Office emphasize that commercial AI uses of copyrighted works often exceed fair use, especially when they compete with the original market[29]. In the opinion of some researchers, AI-generated works must be considered derivative works, whereas others argue that they fall into a legal gray area[25]. Additionally, AI-generated art reflects the biases present in its training data, often favoring certain artistic styles and perspectives over others. Jose Lizarraga, a senior advisor on innovation and creativity, points out that AI art continues to center the gaze of white heterosexual menbecause of who is represented in tech design and content moderation. Additionally, AI has been shown to generate offensive and racially biased images due to unfiltered data used in its training. This demonstrates the necessity for more diverse datasets and ethical AI development practices[24]

The spread of AI application in the arts is endangering the traditional artist with shrinking economic prospects. AI-created images, music, and designs are possible at a fraction of the cost and time, which challenges human creators to compete[22]. This has generated a rising debate concerning the ethical accountability of businesses that create and deploy AI tools. While others utilize AI as a collaborative tool, others fear that the worth of their labor will be commodified and the aesthetic worth reduced[18]. AI models are trained in the majority of cases using datasets that reflect available cultural bias, hence breeding the fear of stereotype perpetuation and underrepresentation by diverse groups within AI-generated art[20,30]. For example, AI can favor certain styles of art over others, reinforcing prevailing art forms and marginalizing non- Western or minority art forms. Ethically creating AI should involve inclusive data sets and counteract prejudice to ensure fair representation in artworks. Another key ethical implication is that AI-generated content can be used for deceptive purposes. Deepfake technology and AI-generated images could be employed for influencing the minds of the masses, creating fake art, or altering history[28]. The ethical challenge is to develop rules to prevent the abuse of AI-generated art but encourage innovation and creative work. In the future, to address such ethical challenges, policymakers and researchers will have to adopt clear guide- lines on AI-created art. Disclosure of data sources, fair models of remuneration for artists, and mechanisms for evaluating AI-created art are all preconditions to the ethical use of AI[25]. In addition, a shifting scenario requires an interdisciplinarity of methods involving lawyers, artists, and technologists. Artificial intelligence is reshaping art education by integrating new tools, workflows, and pedagogical models that prioritize student creativity, prompt-engineering, and critical thinking. Liu and Zhu (2025) introduced the Creative Intelligence Cloud (CIC), a system combining generative adversarial networks (GANs) and convolutional neural networks (CNNs), tested across multiple university-level art studios. Through controlled experiments, CIC demonstrated high scores in clarity (0.89), detail (0.85), style coherence (0.87), and user satisfaction, outperforming traditional models in both technical and user-experience metrics[31]

Complementing this, Pavlik and Pavlik (2024) applied constructivist learning theory in K-12 settings, conducting qualitative case studies in art classrooms where students actively engaged in creating and reflecting on AI-generated content. Their findings show that prompt-based generative AI can enhance student engagement, ideation, and meta-cognitive awareness, while strengthening their ability to critique AI outputs critically[32]

These studies illustrate how art programs are adapting: curricula now include modules on prompt design, iterative generation, and ethical considerations, as seen in classroom use of tools like DALLE[33]. While these innovations foster creative skills, challenges persistsuch as unequal access to tools, educator preparedness, and potential overreliance on AI output[34]

Results

Artificial intelligence (AI) is having a significant impact on the arts and design industries, transforming both the economics of content production and the very nature of creativity. By automating routine processes, AI significantly increases the productivity of designers and reduces the costs of creating visual content. The emergence of platforms like DALL-E and MidJourney has made it possible to receive high-quality images in a matter of seconds based on a text request, making artistic tools accessible to a wider audience, including people without special artistic education and small businesses.

However, the rapid adoption of AI is also leading to job losses among professional artists, illustrators, and photographers. Companies are increasingly opting for generative tools, which increases the economic pressure on creative professionals. For example, artist Sam Shearon reported that he lost a commission for an album cover due to the clients use of a neural network. Such cases are becoming more common, raising concerns about the future of artistic professions.

AI is becoming a useful tool for artists themselves, helping to generate ideas, analyze trends, and combine traditional techniques with digital approaches. It also provides real-time feedback and helps to expand the boundaries of experimentation in art. However, serious challenges arise: excessive reliance on algorithms can lead to a loss of originality and the replacement of the creative process with mechanical reproduction. Questions of authorship also remain open: who is the real creator - a person or an algorithm? Many critics note the lack of emotional depth in works created by AI and fear that art may lose its humanistic essence, turning into a means of mass production.

Along with this, the use of AI in art raises a number of ethical issues. Among the most pressing are copyright infringement, since generative models are trained on images created by other artists, often without their consent. There are problems of historical inaccuracy when reconstructing lost works, as well as the risk of reproducing social and cultural biases contained in the training data. In addition, AI technologies can be used to create deepfakes and visual forgeries, which pose a threat of disinformation. Of particular concern is the underrepresentation of cultural and ethnic minorities in AI art, which may contribute to increasing inequality in access to cultural expression.

These challenges are deeply interconnected. Copyright loopholes allow companies to use large datasets without proper permission, often scraping content from public platforms without consent. Because much of this content comes from Western sources, the resulting models reinforce cultural bias, favoring Eurocentric styles and underrepresenting minority aesthetics. This bias not only shapes what AI generates but also affects who is seen, valued, and rewarded in the digital art economy. As a result, marginalized artists are excluded from exposure, opportunity, and income in an industry increasingly dominated by algorithmically generated works. Addressing these issues requires a comprehensive approach, including the introduction of transparent development standards, the creation of inclusive training sets, the formation of a fair system of remuneration for authors, and collaboration between artists, engineers, lawyers, and ethicists. Thus, the development of AI must go hand in hand with a responsible and conscious attitude to the cultural, social, and humanitarian consequences of its use in art.

Available/ Current Solutions to the challenges posed by AI art

The rapid evolution of AI art has given rise to both opportunities and challenges for the creative sectors. While AI has brought the world of artistic tools to the masses, concerns of ethics, ownership, and economic impact remain very much in effect. Various solutions have been proposed to mitigate these challenges, ranging from those based on ethical reasoning, legal designs, and technology solutions. One of the primary concerns regarding AI art is its ethicality, particularly in media and artistic authenticity[28]. Policies for regulation are being created to ensure transparency in AI-generated works. Some solutions involve watermarking AI-generated images and the use of AI disclosure statements to distinguish between human-generated and machine-generated content[25]. For example, OpenAI is testing a watermarking feature in its DALLE system to verify the authenticity of AI-generated images and prevent potential misuse, including the spread of disinformation[35]. Watermarking is seen as an important step toward transparency in AI usage; however, the limitations of this measure are also highlighted. Specifically, it is noted that watermarks can be removed during image editing, challenges remain in ensuring their visibility while maintaining visual quality, and the lack of unified standards across different platforms reduces the universality of this approach. Furthermore, the identification of watermarks by users often requires technical knowledge or the availability of specialized tools, which limits the widespread adoption of this technology for verifying AI-generated content. These measures help maintain artistic integrity and prevent misinformation in media and art. Legal concerns surrounding AI-generated art have been at the center of intellectual property debates. AI art complicates the use of conventional copyright law since it is not always simple to ascertain whether the model creator, the user who inputs prompts, or the AI owns it[18]. To offset this, some jurisdictions have introduced a proposal for acknowledgment of AI-generated art in collective copyright provisions to pay both creators of AI and original artists. Distinct from this are new digital rights management (DRM) protections designed to protect original artists from illegal AI impersonators.

New AI technologies have also raised concerns regarding replacement of the replacement of human artists. In offset-

ting this, policymakers and institutions are promoting programs that utilize AI as an assistive tool rather than a replacement[22]. Modern-day training programs place emphasis on hybrid creativity, educating artists how to collaborate with AI to enhance their work rather than rival it. Grants for funding and creative residencies empowered by AI have also been established to assist human creators in adapting to the new environment[20]. Recent analysis highlights that AI-focused creative residencies not only provide financial support but also structured opportunities for artists to explore AI tools in their practice under mentorship and technical guidance, fostering hybrid creativity and experimentation[36]. These residencies allow artists to negotiate their creative agency while engaging with machine learning systems, facilitating a deeper understanding of the collaborative potential between human creators and AI. However, there are some limitations, including the competitive nature of residency applications, limited spots available for artists, and the need for participants to develop technical proficiency with AI tools, which can create barriers to broader accessibility and long-term impact across diverse creative communities[36].

Technological approaches are being tested to address AI-induced artistic difficulties. Ethical design principles of AI call for the integration of human-centric mechanisms in AI-art platforms[25]. These involve applying user- driven AI limits, including style constraints that will not allow overly imitative approaches to individual artists. AI models are also increasingly developed to place more emphasis on diverse datasets to minimize biases in AI- generated works of art, fostering a more diverse artistic universe[18]

Conclusions, Recommendations and Limitations

The dramatic rise of AI-generated art poses both opportunities and threats to creative industries. Whereas AI has simplified the availability of artistic tools, questions of ethics, ownership, and economic disruption linger. Issues surrounding authorship and originality become more challenging in the age of AI-created art, even if some models of resolution exist. Its moral and legal standing is still open to debate. The greatest challenge lies in making it possible for AI to coexist with human imagination in a mutually beneficial manner to both artists and the industry in general.

For the purpose of ensuring the integration of AI in the art sector responsibly, some fundamental aspects need to be put in place. Governments need to revise copyright legislation to clarify the ownership rights of AI-produced works and make provision for proper compensation for human artists. Developers have to integrate protection such as AI-generated content disclosure, watermarking, and ethical design. Art institutions have to introduce AI- specialized training courses to train artists on how to effectively integrate AI into their practice. Funding initiatives and grants have to be set up to support artists in adapting to industry changes brought about by AI. AI models need to be trained over copyrighted and respectfully artistic datasets to prevent unlicensed use of works.

It is also important to note that it may not be AI itself that is causing job losses in the creative industries, but rather technological determinism[37] Economic structures and political decisions shape how AI is implemented, influencing whether it complements or replaces human artists. Furthermore, despite the challenges, some artists such as Claire Silver and Refik Anadol have successfully used AI to expand their practices and reach new audiences, demonstrating that AI can be a tool for creative growth when integrated thoughtfully. In terms of concerns about bias, it should also be acknowledged that human artists, shaped by systems with social and cultural biases, may also perpetuate the same problems seen in AI-generated art.

Despite recommended solutions, there are certain restrictions. AI-generated art is a new phenomenon, and it is difficult to assess the long-term impact on creative industries and artistic professions. Different countries use different legal approaches, so it is difficult to adopt general principles. There is also a risk that artists will depend too much on AI software, which can result in the degradation of traditional artistic abilities.

Future research can examine the long-term effects of AI on artistic employment, creativity, and reception. Interdisciplinary research between policymakers, AI developers, and artists is a must to create an ecosystem where AI supports and does not substitute human imagination. Creativity industries can enjoy the merits of AI while maintaining artistic merit and encouraging human-centric artistic creation by directly addressing these challenges.

This literature review was my first experience conducting academic research, allowing me to better understand the research process while exploring the rapidly evolving role of artificial intelligence in art and design. As AI advances daily, this work helps to capture a broad picture of the current landscape, summarizing authors opinions, statistical trends, ethical dilemmas, and the strategies proposed to address arising challenges.

I believe the main limitation of this research is that it does not include any independent data collection or original analysis, relying entirely on secondary sources. As a result, while the review highlights important debates and trends, it cannot contribute new empirical findings to the field. Additionally, due to the wide scope of the topic, some subtopics could only be covered briefly, leaving less room for in-depth analysis of specific case studies or regional contexts.

Nonetheless, I see value in this work as it synthesizes diverse perspectives, making the complex field of AI in art more accessible to students, educators, and policymakers. It helped me realize how important it is to maintain a critical and reflective approach to technological development while considering the human and cultural aspects of creativity. In future studies, I hope to build upon this foundation by conducting empirical research,

such as artist interviews or comparative case studies, to provide original insights into the coexistence of AI and human creativity.

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