

Can Artificial Intelligence (AI) Replace Artists? Exploring the Connection between Creativity and Technology.

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Abstract

The advent of artificial intelligence (AI) has sparked debate about its potential to replace human artists. This paper examines AI's capabilities and limitations in generating art, assessing whether it can truly replicate the creative essence of human artists. It investigates AI-generated art, analyzing its aesthetic value, emotional resonance, and originality. It also examines the role of human intuition, imagination, and experience in artistic creation, highlighting the unique strengths and weaknesses of both human and AI-generated art. The paper aims to evaluate AI's artistic capabilities and limitations, investigate human artists' perspectives on AI-generated art, and explore potential collaborations between humans and AI in art. It concludes that AI is unlikely to replace human artists but can instead augment and collaborate with them. By embracing AI as a tool, artists can expand their creative possibilities, explore new styles, and push the boundaries of artistic expression. Crucially, the intersection of human creativity and AI technology has the potential to generate innovative and exciting artistic endeavors. Useful recommendations are provided.

Keywords: Artificial Intelligence, Artists, Capabilities, Limitations

Introduction

The convergence of Artificial Intelligence (AI) and art represents one of the most interesting and important technical developments of contemporary times. The advent of AI-generated art has expanded the boundaries of creative expression while also generating discussions about authorship, originality, and the very nature of art itself. With algorithms capable of producing complex and aesthetically pleasing pieces, AI has emerged as

both a tool and a collaborator in the artistic process (Boden, 2016; Elgammal, 2017). In recent years, the involvement of AI in human activities has increased tremendously. Artificial Intelligence can now accomplish many tasks in place of humans in artistic creation, with only minimal human intervention. It even poses a threat to replace human artists, as many positions are no longer needed in many creative sectors. History is repeating itself, like a dance step that reinvents itself for a new generation. With the curious case of photography, a technology that emerged during the 1820s, hatred and fear of it were widespread and persisted for decades. The fear was sometimes expressed that photography would, in time, entirely supersede the art of painting. Some people seem to think that once the process of taking color photographs has been perfected and made commonplace, the painter will have nothing more to do (Clopath, 1901, as cited in Boehman, 2025).

AI tools such as DALL-E and Midjourney have also attracted attention for their ability to generate unique and imaginative designs based on user input. DALL-E, for example, is a machine learning algorithm developed by OpenAI that generates images from text. In contrast, Midjourney allows users to experiment with different styles and techniques in their artwork. While some artists have embraced AI tools to push the boundaries of creativity and innovation, others have expressed concerns that AI-generated art may lack the emotional depth and human touch characteristic of traditional art forms. Some have also raised questions about the role of AI in the art world and whether it represents a threat to human creativity and expression (Brague, 2023).

In the words of Goodfellow, Pouget-Abadie, Mirza, Warde-Farley, Ozair, Courville & Bengio (2014), AI-generated art relies on several machine learning techniques, including Neural Networks (NNs) and Generative Adversarial Networks (GANs), to create visual artworks that can mimic human creativity. The role of these technologies is also evident in the increasing integration of AI-generated artworks into galleries, auctions, and digital platforms, demonstrating their growing influence in the art world. AI can perform these repetitive tasks several orders of magnitude more efficiently than humans, yet it still cannot match human artists in other aspects of creativity. Notably, many clients or art collectors still prefer their art to be made by humans, as they are more likely to build a

personal connection to it. While AI algorithms can generate new and creative designs and artworks, they lack the human creativity, intuition, and emotion essential to the art-making process. Many are less inclined to accept AI-generated artworks as real art. As a result of these perceptions, AI-generated art is commonly devalued relative to human art and commands a lower price. Although some pieces have been sold at high prices, the overall assessment of these transactions has been negative. Most AI-generated artworks, although proficient in certain techniques, lack the resonance required for human reception to convey underlying meanings. Since AI art reflects human capabilities, it cannot advance unless humans first develop related concepts. It cannot create art that it has not already seen, while many humans consider this their primary purpose in their work (Zhao, 2023). In furtherance, Zhao claims that “art” is a term usually associated with the emotions infused into the work and the emotions it evokes in a viewer. AI, which has no experience and real emotion, at least in the foreseeable future, is unable to convey the same emotion as a human artist can and is therefore incapable of creating real art.

However, AI-generated art continues to raise profound questions about the role of human creativity and the implications of machine-generated works. Critics have argued that while AI can emulate the technical aspects of art, it lacks the subjective experience and emotional depth that characterize human-driven creativity (Bellaiche, Shahi, Turpin, Ragnhildstveit, Sprockett, Barr, et al., 2023). This highlights the fundamental question arising from the use of AI-generated art: what constitutes artistic merit in the era of AI innovations? The intrusion of AI into the arts has sparked significant societal implications. Padgett (2024) also added that the democratization of art creation through AI tools has made artistic expression more accessible to a broader audience, allowing individuals without formal training to produce sophisticated artworks. This accessibility challenges traditional notions of artistic elitism and opens up new avenues for creative exploration. It also raises concerns about the devaluation of human artistry and the potential loss of cultural heritage as machine-generated art becomes more prevalent in the art world.

Human Artist

Human artists, according to Konstantinidis (2024), are known for their creativity, but they are not born artists. What makes a human an artist is a

combination of factors and characteristics that drive creative expression. Here are some elements that contribute to what makes a human an artist:

1. **Imagination and Creativity:** Artists possess a rich imagination and the ability to think outside conventional boundaries. They can envision new concepts, ideas, and forms of expression. Artists across literature and the visual arts have demonstrated remarkable imagination and creativity throughout history.
2. **Passion and Dedication:** Artists are often deeply passionate about their craft and dedicated to honing their skills. They invest time and effort into developing their artistic abilities and pursuing their creative vision.
3. **Observation and Perception:** Artists have a keen sense of observation and perception, allowing them to see the world in unique ways and capture it through their art. They notice details, patterns, and nuances that others may overlook.
4. **Emotional Sensitivity:** Artists are often emotionally sensitive and attuned to their inner feelings and the emotions of others. They use their art as a means of expressing and processing their emotions, as well as evoking emotional responses in their audience.

Human artists bring a level of creativity, imagination, and nuance that machines cannot replicate.

Artificial Intelligence in Art

Art is widely considered a uniquely human phenomenon. It can encapsulate and communicate our emotions, express our individual and communal experiences, and serve as social commentary on those experiences, all of which are commonly thought to be human-specific (Chatterjee, 2014). However, Zhao (2023) argues that art is a difficult term to define, as no single property applies to every piece. The significance of true art is believed to lie in two groups: the creator and the viewer. The transfer of intention from the artist to the piece and then from the piece to the viewer is what creates the art. Art is about creating aesthetically pleasing visuals and expressing emotions, ideas, and concepts unique to the individual artist or designer. AI algorithms are also limited by the data they are trained on. While they can learn patterns and styles from large datasets of existing artworks, they cannot invent completely new styles or ideas without human input and guidance. Furthermore, art is not just

about the final product but also about the process of creating it. Therefore, the process of ideation, experimentation, and iteration is an essential part of the art process, requiring human creativity and intuition.

Art Collectors Give Preference to Human-made Artworks over AI-Generated

A study conducted by the University of Waterloo Research Ethics Board showed participants 60 paintings, half created by AI and half by humans. Participants did not know whether each artwork was created by an AI or a human artist. Participants were given four criteria to rate each piece: Liking, beauty, profundity, and worth. Across 4470 trials, the researchers found an anti-AI bias across all four categories, with participants favoring the work labeled as “human-made” more than the work labeled as “AI-made” (Bellaiche et al., 2023). This experiment verifies that the general public would perceive differences between AI-generated art and human art using these very vague ratings. Distribution of values for artworks associated with AI and humans for each criterion (Liking, Beauty, Profundity, Worth). Error bars represent the standard error of the mean. Following multiple-comparison corrections, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. In a similar study with 254 people from the USA, as mentioned in Zhao (2023), participants were asked whether an abstract painting was considered art. The experiment had two scenarios: one being an accidental creation with the paint having been knocked over, and the second being an intentional painting. For both experiments, participants were more willing to judge the human-made piece as art, and paintings that resulted from intentional action were considered art much more than those that resulted from an accident. The consensus that arose from these two experiments was that people are more likely to consider human-made artworks than AI ones as real art, even in the form of abstract art. However, in both scenarios, there were still people who judged AI art to be legitimate. While AI can be a powerful tool for artists and designers, it cannot replace the unique human qualities essential to the process of art.

Tendency to Devalue AI-Generated Artworks

AI art is persistently devalued and perceived as having less monetary value. “This is true even when the art itself is held constant (i.e., labeling the same piece as “AI-made”) and regardless of participants’ overall feelings towards AI. In the case of purchasing artworks, people prefer

human-made pieces over AI-generated art. Compared to human art. Echoing historical examples of automation in other industries, this devaluation is more pronounced in evaluations of skill and monetary value and less pronounced in artistic dimensions (e.g., complexity or emotional intensity). Moreover, devaluation effects weaken substantively when participants are not directly comparing human and AI-made art” (Bellaiche et al., 2023). Bellaiche et al. further pointed out that collaborative art (humans interacting with AI art-generating software) is perceived to be less valuable than work made only by humans. Perceptions of the human artist’s status as the primary creative agent depend largely on whether the collaboration is compared to human- or AI-made references. That is, an evaluative bias against AI-made artwork persists even when the AI functions as a human aid, but these detrimental effects on value can be moderated by anchoring the evaluator on the efforts of AI art produced without human help. Even if a piece is only assisted by AI and the majority of the work is done by a human, the piece is still devalued. The bias is not about the quality of the piece but about the AI itself. These results were demonstrated in Bellaiche et al. (2023), where experiments were designed and statistical results were collected.

Boehman (2025) remarks that, if history has taught us anything, it’s that art markets are unpredictable. Handmade art has dominated the high-end market, with paintings selling for hundreds of millions of dollars, while photography and digital art have yet to breach such astronomical figures consistently.

Artificial Intelligence (AI) Replicates Human-Made Artworks

Artificial Intelligence software is trained using reinforcement learning on images and art created by human artists, which means its development depends on human progress. Therefore, AI-generated art is also dependent on human creativity. Over time, the images AI software produces begin to become repetitive, as it cannot create anything it has not already seen. It can only repeat what it sees, meaning it cannot surpass human creativity, which can form that which does not currently exist. If AI is to create anything worthwhile, it must be able to have its own insight and senses (Demmer, Corinna, Joerg, & Matthew, 2023, as cited in Zhao 2023). These attributes are not demonstrated in the generative AI systems so far.

Therefore, we consider AI art more of imitations of the human artists it learned from in the recursive ML process.

Demmer et al. (2023), as cited in Zhao (2023), maintain that although AI's efficiency and capabilities may seem to surpass those of humans, its systems remain a reflection of their training data and do not have the same capacity for originality and critical thinking as humans. Human creativity draws not only on past data but also on experimentation and the full range of human experience. AI can only imitate what it can see, meaning it lacks the essential form of creativity. The efficient generation of AI-based artistic renderings, or even the creation of artworks in different styles, is incredible in terms of the speed and volume of the output. But we still argue that we have yet to see AI-generated artworks that truly push the boundary between existing techniques and truly original creativity.

Artificial Intelligence cannot create real artworks, as the core difference between AI and human artists is that humans can incorporate their emotions and past experiences into their work, giving their pieces depth and allowing them to evoke feelings in others as well. Artificial Intelligence, developed to create 'art' after being given a prompt, possesses neither of the two and is therefore unable to incorporate them into its pieces. Through machine learning, AI learns to make inferences from inputs across different languages to the vast majority of existing artworks. But AI cannot understand the true human emotion and apply these feelings in the composition and techniques. A handful of professors from the University of Vienna wrote that "A core aspect of making art seems to be the ability to record and then impart some aspects of a creator's reality, their views, and their feelings to an audience. This latter aspect, often in the form of specific emotions, is suggested to be a main aspect of such connections and a core element-as a human communicative act-of art's definition itself." Tolstoy put it this way, "to evoke in oneself a feeling one has once experienced, and ... then, using movements, lines, colors, sounds, or forms...to transmit that feeling that others may experience the same feeling, this is the activity of art" (Zhao, 2023). It is very difficult to ascribe such intentions to an AI or any computer. Therefore, it is extremely hard to analyze how artificial intelligence can actively transmit emotions to viewers. Even when the emotions are hard to define with regard to AI, the transfer of feeling from the artist into their work, and then from the piece

to the viewer (Tolstoy, 1995), is such a vital part of what true art is and something AI is unable to replicate. AI's inability to incorporate emotion into its art results in a piece that contains nothing.

Artificial Intelligence can copy a human, but it can never become human, at least in the foreseeable future, as it lacks the sensual/philosophical aspects of artistic creation. What AI relies on is merely maximizing a mathematical measure in the maximum-likelihood algorithm and the training dataset it relies on. With different training datasets or separately fine-tuned machine learning algorithms, AI artists might create totally different or even opposing results. AI art also suffers from the instability of the underlying algorithm/computing platform; while the emotional/philosophical values are relatively stable in our human society.

Conclusion

Artificial Intelligence will never be on the same level as human artists, as the transfer of self-consciousness between AI, the artwork, and a human being is almost impossible. It is also hard for AI to achieve a breakthrough in creativity. Although AI makes the rendering of certain forms of art more efficient, many are unwilling to consider it real art.

Although most of the general population prefers human-made art, there have been cases in which AI art has sold for astronomical prices. The most expensive of these was a painting titled 'Portrait of Edmond Belamy', which sold for \$432,500 in 2018. Instead of being sold to a large institution or community, it was bought by an anonymous individual. Because only one person was willing to value the piece that high, it does not reflect the general opinion of AI art and can be marked as an outlier. Unsurprisingly, this incident sparked many controversies, and most reactions were negative. Jerry Saltz, a well-known American art critic, stated, "An artwork made by Artificial Intelligence just sold...I am shocked, confused, appalled" (Demmer, 2023). The creation of art is incredibly important to our society and is a way for people to express themselves and communicate with others. Leaving this task to AI takes away a key component of our society. Overreliance on generative AI would not be a viable strategy. In the long run, this could be detrimental to our value system, creativity, and humanity as a whole. AI is unlikely to replace human artists but can instead augment and collaborate with them.

Recommendations

This paper recommends the following:

1. Artists should utilize AI softwares without bias of replacing human artists.
2. Collaboration of AI and human creation should be encouraged at all level.
3. AI should be used as a tool for achieving a pre-planned result and not as an artist.
4. AI contents should be made available at the basic level to enable early contact and collaboration.

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