

AI Art and the Sociotechnical Interactions with Artists

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Throughout the last several decades, we've seen many forms of technology rise and fall, with revolutionary inventions such as the camera and film reel transforming the way consumers and artists alike interact with technology to embrace all sorts of media. However, none could be said to be as powerful and controversial as AI art- a form of art which replicates the works of artists and procedurally generates its own images without any form of human intervention. As an artist and a programmer, this topic is gravely important to me since it encompasses two fields in which I hold a great deal of respect towards, which makes it all the more pressing to take apart the various arguments and disputes held by both parties to see if an ethical dilemma and framework can be orchestrated to factor in the opinions and consequences both parties hold against each other. Artificial Intelligence entails using data to create highly advanced algorithms for the benefit of society, though the implications in the world of art regarding how said data is acquired has been put into speculation by legal practitioners and artists alike. The sociotechnical problem this research addresses is the nebulous interaction between independent artists and AI algorithms using artwork from those artists. I will be analyzing this paradigm through Actor-Network Theory. By looking at the perspectives of the human actors- Artists and Programmers, and perhaps legal practitioners- and non-human actors- AI programs and the art manufactured by both AI and humans- I will be analyzing the reciprocal effects of technological advancements in AI with its respective cultural consequences on the artistic field. The framework I will use to dissect and study this issue encompasses the independent artist, the AI as a separate entity, and the interactions both or either of them have in the creative domain. Consequently, I will be analyzing claims made by artists to address controversies introduced by the programming world, comparing the potential consequences for the implementation of AI with the long-term effects on the future of current and prospective artists. My main claim is that AI art does more benefit artists than harm in the long run, provided that such technology is used responsibly.

The first sub-argument for the use of AI art is that although the possibility of utilizing such technology infringes fair-use copyright for artists and could subsequently result in creative depression, the benefits of implementing such technology are likely more beneficial than harmful to artists in the long run. Before we begin with the argument itself, I will first establish the sources of evidence I will use to justify my argument. The Harvard Gazette, MIT News Office and The Guardian are all public-source, article-based websites with differing perspectives on AI art and their prospective uses. While all three sources are functionally of the same origin, they all provide different insights into the potential hinderances, limitations, and benefits to emerge from the field, many of which contrast and align with each other in a way that provide a solid framework for my arguments for and against both AI art and the artists criticizing it. In addition, MIT News Office and Harvard Gazette assume their credibility from their position as accredited academic institutions, where their academic status is pre-established through their associated reputations and professional status. In contrast, The Guardian is a public, open-source news resource which lets us draw analytical conclusions that supplement our argument by with direct, personal evidence from various sources and artists mentioned in their respective articles, where more attention is given to the artists themselves instead of the general argument. It is worth noting that while MIT and Harvard have sponsored these websites, they are also biased towards these institutions and may provide perspectives skewed to favor the needs of big tech companies. However, we should not discredit this in our analysis, since they nonetheless provide unique perspectives in favor of AI art that ought to be considered, even if the data may prove to be outdated or erroneous in the coming years. It is also worth noting that all three of these sources are public web-browser based news sites, which, while it may seem as though this undermines their credibility, actually gives us a

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perspective that is meant to be accessible to the general public instead of academics alone, giving us a more broad lens to view our argument instead of a strictly analytical perspective.

Though AI art is a promising field in many other disciplines, such as mathematics, health, literature, and even programming, what makes it such a controversial field of expertise in the art world is that computers lack creativity, something which human beings possess that cannot be replicated with machinery. Machines are focused with the intention to maximize efficiency and perform a task as well as it is designed to do so; they are not designed to be expressive thinkers, nor can a machine come close to replicating the special kind of imagination that humans uniquely possess. For example, recent internet criticism has been drawn towards the procedural text-to-image generation software Dall-E- a software made to generate images from a text prompt. For example, if one inputs the text prompt “dog”, Dall-E is able to recreate a mostly faithful imitation of a painting as if it were hand drawn. However, the image would also contain many abnormal inclusions, where the dog would be missing its hindlegs, have its head wedged in its abdomen, or phase into the background (*The Guardian*, 2023). The criticism stems both from the shocking degree of accuracy and detail, inciting fear and anger from artists who claim that such degree of detail is “too high” and that such technology would put them at risk for replacement at their jobs. Artists assert that machines have one singular purpose- to automate tasks that are too laborious for humans. From this argument, they argue that a machine should not be built to create things on its own, and that any attempt to be “creative” by a machine is reliant too much on the plagiarism of other artists, so much so that they might as well be considered thieves altogether. However, because AI is also designed to be computationally superior to humans, possessing analytical talent far more capable than that of most groups of people working collectively, there are places where such computational power can be used to help artists rather than harm them. This is important because while a machine may not be able to paint something with intrinsic feeling or soulful intent, such algorithms may recommend artists with art styles or art supplies that can expand their horizons, allowing them to advance as artists while not sacrificing the integrity of their work (Coleman, 2024).

In other articles, the infancy of such technology has been introduced to tech investors, inciting a closer look into the broader societal impacts of such technology . Artists are rather polarized on their opinions of the accuracy of AI replication; while some praise such accuracy as a marvel of technology, others are horrified at such a degree of replication, where companies can exploit and plagiarize off of artists while not giving them their due commission or payment (*The Guardian*, 2022). In addition, by imposing an implied definition of creativity by recreating common art forms with a non-human mechanism, definitions for fair use and the stability of the art market could fall into upheaval or complete renovation due to the addition of a new competitor in the scene, which could disrupt the natural flow of the process of marketing and gaining publicity for artists. However, because AI is so undeveloped in its current stage, various factors, such as training and resource management costs, have yet to make themselves known in full scope (Winn, 2024). In addition, because art is so intertwined with human expression, AI models should train off blank slates so that we as programmers and members of society can more closely monitor the ways AI is used and learned.

I agree with many of the points asserted from these sources; the field is indeed very young compared to analog forms of art- be it painting, drawing, or photography. Therefore, casting definitive claims on the nature of AI would be immature and rash, as we do not yet know the uses

and implications such power could mean for us, especially since the costs of maintenance haven't been fully disclosed yet. In addition, Similar advocations for regulation were brought upon the invention of photography (*The Guardian*, 2022); by being able to capture everyday life in seconds, painters, landscapers, and potentially all artists would go extinct. And yet such innovation brought forth a new era filled with photographers and polaroid specialists, so who are we to say for certain whether this new wave of art could be of great harm when there also exists great potential?

Such technology ought to be observed in isolation, and I agree since we need to gain a deep understanding of the algorithms first before we move on; it is crucial to see if any infringements of fair use networks could make the process morally corrupt in the long run. Furthermore, if AI truly is unable to generate art creatively, then we would dismiss the technology to be that of mockery, a crude imitation reliant on the hard work of other without thanking them (Winn, n.d.). But there could be uses for such complex analytical automatization; artists can use such tools to automate the more tedious parts of animation of sketching, reserving their creative capacities for things that are worth focusing on. For example, a software can generate a quick render of a background while the artist focuses on drawing their favorite character (Coleman, 2024). In conclusion, we should not be so quick as to cast judgments on such a promising field. Though, it is not to say we ought to let it grow unsupervised, but rather, that we be patient and observe astutely as to make the best use of this field.

The second argument is that while AI is while the threat of replacing artists may at seem like a justifiable reason to suspend its incorporation in the art world, AI can also be used to assist artists alongside their craft. To preface this section, we can assert the validity of these sources by examining the origins of their authors. Admittedly, Veena McCooles is not known to have explicit credentials in the industry. However, her extensive inclusion of images and direct citations from various alumni and staff of international art colleagues and organizations provide an extensive look at different perspectives of art. In contrast, Ploennigs is a certified academic publisher who produced the journal in an accredited academic paper, providing solid evidence of his methods with proper citations and references.

AI is still a juvenile field, meaning that the definitions mainstream media has assigned to the discipline are oversimplified and under-observed under a technical lens, as is the case with many new technologies. In the case of its relationship with art, not too much research has been studied on the conclusive effects of technological advancements on a non-STEM field. Instead, it is often under scrutiny under copyright violation law, where artists' work may be unfairly and unwillingly used in the promotion of unethical manufacturing of creative media. The most common criticism of this field is that AI evokes a "sense of trepidation" (McCooles, 2023) in the art world, where such unregulated power and potential for exploitation could incite many controversies, forcing many artists out of employment due to a seemingly inevitable takeover of machinery. Furthermore, many experts in both the tech and art industries argue that because the capabilities of AI are still in rapid development, there is no clear definition or verdict regarding its role in media, extending the argument against it to not only a sociotechnical matter, but one of efficiency and competency. Put it simply, AI is not yet consistent enough to be charged with such a non-deterministic task (McCooles, 2023).

However, to put such arguments in a confined space would be to severely undervalue the potential value the advent of a field can bring to all participants in the field. As it stands, there exist

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no specialized algorithms designed to monetize the potential plagiarism of other artists, nor are there perfect replicas of the creative process of a human brain. However, that is not to say that the principles behind the field ought to be immediately discarded from the view of machine learning specialists, especially when analyzing the remarkable advancements in other fields. For instance, Language-Learning-Models (LLMs) and Convolutional Neural Networks (CNNs) both illuminate possibilities for text-to-speech declarations for art requests, where prototypes such as DALL-E create images based on spoken requests from the user (McCoole, 2023). For example, Sougwen Chung is both a practicing artist and a programmer who developed a series of robots named Doug-Drawing Operations Unit Generation- which recreates her original style in front of a live audience after being trained with her data. In an interview, she contemplated the question of what it would be like to have “a drawing collaborator that was a nonhuman machine entity” (Boucher, 2023). A demonstration of 3D rendering software is found in a recent academic paper which demonstrates the generative process of a text prompt being assimilated into categorized input for a CNN, eventually resulting in an image-generation process that returns a rough approximation of the user request (Ploennigs et al., 2023).

Some may argue that the technological incapacities of AI are strictly limited by the limitations of computers. Indeed, this has been demonstrated as well in the paper, where certain prompts such as generating a four-bedroom layout as an architectural design would return irregular shapes and perimeter sketches (Ploennigs et al., 2023). There have also been arguments concerning the incapacity of a computer to feel genuine emotion, and by extension cannot creatively think in the same mindset as that of a proper artist (McCoole, 2023). Consequently, this can rule out the definition of AI art as “art”, rather being a synthesized product. However, to refute both of these arguments, AI art has proven to possess uses in the art industry that expand beyond the easel or canvas; procedural generation of architectural models gives architects a good look at the process of formation for buildings, and the auto-correction techniques for blots or missing pixels in pre-finalized sketches may prove to assist artists outside of the field with their private work (Ploennigs et al., 2023).

The final argument for this claim is that the copyright laws for AI art are enforced such that any generation of art from certain models are unable to be claimed as original pieces of work. This is significant because it addresses perhaps the most important argument against the use of AI art: copyright violation by stealing the works of artists. Yavuz’s article, *What the latest us court ruling means for AI-Generated Art’s copyright status*, discusses the case in greater detail, where the official court verdict had decided the relationship between human action and its respective claim to copyright protection.

Three articles will be used to argue for this assertion. For one, an official court hearing is used to determine the legitimacy of the claim that legal protection is needed to determine if something is deemed plagiarism. An academic paper from an academic repository will cover the implications in further detail, along with an article from a content creation company, providing a perspective from both academia and the industry. More specifically, I argue that the benefit to artists and the creative process provides a case to adopt AI into the fabrication process, while the multilayered uses of AI expand the scope beyond the perspective of an individual artist. The court ruling provides a case against a long-standing claim that AI art unapologetically infringes on copyright with unassailable protection from corporations. All three of these sources are reliable sources, as the court hearing is used as an official primary source for the central argument, while

the academic paper and the internet article are from established institutions which have their own right to stand as legitimate sources.

A group of artists recently sued a group of companies and their respective generative-AI software for plagiarizing the works of other artists for the use of their own personal gain. However, the verdict assigned asserts that products generated without direct interference cannot be subject to copyright protection. The argument claimed that the nebulous definition of human interaction made it difficult to assert the machine as having done anything independently, and that the result was made without agency or conscience (Yavuz, 2023). Much controversy was stirred because of this, where the discussion led to a question as to whether or not anything could be claimed as “human interaction” following this ruling, since all AI needs human cooperation to input data to train and develop neural networks. On the contrary, because AI art lacks a human operator to guide itself through the learning process, one could also argue that no such copyright protection exists, as an AI could be roughly reduced to code, and not as a free-thinking being (Yavuz, 2023). That is, however, not to reduce the significance of the ruling, as it brings out the ethical paradigms of plagiarism being normalized in the future should AI become sufficiently advanced enough to gain the sponsorship of professional organization, and that we ought to be careful not to abuse this power (Rubio, 2023).

I would like to argue, nonetheless, that while the threat of plagiarism is still looming in a time where AI is still finding its place in the art world, there is much greater potential for AI art to be utilized in the community rather than be exploited. For instance, photography was under scrutiny for its time for potentially replacing analog art, such as painting and drawing. However, both arts have flourished into their own separate media (Ghosh et al. 2022). AI art is in a similar predicament; perhaps the analytical tools harnessed in the intricate design of its architecture could prove useful to artists. And while the copyright discussion does point out how profits can be generated at the expense of artistic integrity, perhaps said companies are better off using AI for their own needs while leaving the creative sphere untouched, for one cannot say to have artistic expression without creativity, which is something unique to humans (Ghosh et al. 2022).

In conclusion, These three sub arguments tackle different facets of the sociotechnical framework in a way that covers many points of view: The benefit to artists and the creative process provides a case to adopt AI into the fabrication process, the multilayered uses of AI expand the scope beyond the perspective of an individual artist, and the court ruling provides a case against a long-standing claim that AI art unapologetically infringes on copyright with unassailable protection from corporations. Regarding Actor-Network Theory, we can see that the relationships of programmers and artists are constantly intertwined with each other, where they are seen to cooperate with each other quite gracefully amongst each other. In turn, their arguments and advancements in their respective fields help to strengthen one another through various means, and their roles are in no way isolated in society. The implications of this argument open discussions of other factors at play, such as the judicial system, corporate interests, and patrons and shareholders of artistic institutions, all of which will be interwoven in the larger scope of society. The interactions between artists and programmers are justifiably tense with the induction of such a controversial means of creating the same product, yet given enough time, there will also be new opportunities for both parties to flourish alongside each other, like many other technologies of past times.

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