AI as a Creative Partner: Enhancing Artistic Creation and Acceptance

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Abstract
AI tools have gained popularity in the art world, offering numerous advantages for artists in terms of creativity and innovation. However, concerns and limitations surrounding AI-generated art have also emerged, such as the potential lack of emotional depth and human touch compared to traditional art forms. This paper explores the use of AI tools in artistic creation and acceptance, focusing on two prominent tools: DALL-E and MidJourney. These tools provide artists with opportunities to experiment with novel ideas, break free from established conventions, and explore different styles and techniques. The acceptance of AI art among the public and the art community is a complex issue that requires careful consideration by artists. The advantages of AI tools include time efficiency, idea generation, personalization, and collaboration, empowering artists to enhance their creative processes and connect more deeply with their audience. However, criticisms and limitations such as lack of creativity and originality, technical skill requirements, potential homogenization, and ethical concerns also need to be addressed. The paper emphasizes the importance of understanding these limitations and drawbacks to make informed decisions about incorporating AI tools into the artistic process. Ultimately, AI can serve as a valuable tool for artists, either as a creative partner in the production of art or as an aid in the ideation phase, offering new possibilities and expanding the boundaries of artistic expression.

Keywords: AI Art, Creative Process, Visual Arts, Acceptance, Authorship

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Introduction

In recent years, the art world has witnessed the rising popularity of AI tools. These tools, which are developed in the field of computer science known as artificial intelligence (AI), aim to simulate human intelligence and perform complex functions, such as pattern recognition, experiential learning, and decision-making.

In the art world, AI tools have been used in a variety of ways, from analysing existing art, generating new and innovative art (Cetinic & She, 2022) and assisting artists in the creative process. One of the most well-known examples of AI-generated art is the work of the French art collective Obvious,[1] who used a machine learning algorithm to create a portrait that sold for over $400,000 at a Christie's auction in 2018 (Christie's 2023, 2018).

AI tools like DALL-E and MidJourney have also gained 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 can create images based on text descriptions, while MidJourney allows users to experiment with different styles and techniques in their artwork.

While some artists have embraced AI tools as a means of pushing the boundaries of creativity and innovation, others have expressed concerns that AI-generated art may lack the emotional depth and human touch that is 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.

Despite these reservations, the use of AI tools in the art business is expected to expand and change over the next few years. AI technologies may play a bigger part in the creative process as they progress and become more widely available, enabling artists to explore new avenues and push the limits of conventional art forms in novel and exciting ways. Manovich also claims that in the future AI "…will play a larger part in professional cultural production…" (Manovich, 2018). However, it will be important for artists and industry professionals to remain mindful of the potential risks and limitations of AI-generated art, and to ensure that human creativity and expression remain at the forefront of the art world.

This work pretends to explore if artists can use AI as a tool to make art, without losing control of the final composition and how AI-aided art is accepted by artists and the public.

Overview of AI Tools for Creating Artworks

In the art world, the integration of AI tools has ushered in a paradigm shift in the creative process. Revolutionary assistance provided by these tools has enabled artists to experiment with novel ideas and break free from established conventions. Diverse categories of AI tools are available to artists for producing their works. A machine learning technique named Generative AI can generate pioneering designs whose basis is the inputs provided by the user (Jain et al., 2022). DALL-E, an OpenAI machine learning algorithm, exemplifies this idea. By generating images from text descriptions, DALL-E equips artists with imaginative designs, capable of integration into their art; Style transfer techniques encourage artists to play with novel styles and methods as they explore their craft (Gatys et al., 2016). One

[1] https://obvious-art.com/

example of this is MidJourney, a software tool that allows users to apply different styles and filters to their artwork in real time. Artists can use MidJourney to explore different styles and techniques and see how they might look in their work; Image recognition can identify objects, patterns, and other features in images. Artists can use image recognition tools to analyse and interpret their artwork, as well as the work of other artists (Johnson et al., 2008). This can help them gain a deeper understanding of the visual language of art and how it can be used to convey meaning and emotion; Human language can be analysed and understood by natural language processing. For artists seeking inspiration or desiring to explore novel themes and ideas, natural language processing tools can be valuable. With these tools, written descriptions of art can be interpreted and new concepts generated. Therefore, artists can utilize natural language processing to enhance their creative abilities (Eriksson, 2022); Digital artistry has been revolutionized by 3D modeling, with creators now able to fashion three-dimensional digital models of their sculptures, architectural and other 3D works of art. The technology is also useful in creating virtual installations and environments that provide a unique and immersive perspective for viewers (Bebeshko B et al., 2021). Additionally, 3D modeling tools can create reference models for use in painting and drawing. Table 1 summarizes some of the different tools available now[2] for visual arts.

AI tools have opened up new and exciting possibilities for artists, allowing them to explore new styles, techniques, and concepts in their work. Whether it's through generative AI, style transfer, image recognition, natural language processing, or 3D modeling, these tools are already being used by artists.

Table 1. AI tools to create images.

AI tools	Source	Input
Craiyon	https://www.craiyon.com	Text-to-image
Dall-E	https://labs.openai.com	Text-to-image
Deep Dream Generator	https://deepdreamgenerator.com	Text-to-image, image-to-image, choose style
DeepAI	https://deepai.org	Text-to-image, choose style
Fotor	https://www.fotor.com/features/ai-art-generator	Text-to-image, image-to-image.
Hotpot	https://hotpot.ai	Text-to-image, other useful tools[3]
MidJourney	https://www.midjourney.com	Text-to-image, choose style, add edits
NightCafe	https://nightcafe.studio	Text-to-image, choose style and algorithm
RunwayML	https://runwayml.com	Text-to-image, image-to-image, useful tools, video, 3d and more.
Stable Diffusion	https://stablediffusionweb.com	Text-to-image
StarryAI	https://starryai.com	Text-to-image, image-to-image, choose style

[2] February, 2023.

[3] Background removal, restoring damaged photos, colourizing old photos, etc.

Advantages of Using AI Tools for Creating Artworks

AI tools have been a revolution in the world of art, offering numerous benefits that artists can appreciate. For instance, the use of AI can greatly accelerate the creative process and enhance the final product. A key advantage to using these Artificial Intelligence tools is in their time-efficiency; tasks that would otherwise be strenuous and monotonous can now be automated with ease. Among the most significant tasks that can be automated are image creation, data analysis, and data visualization. AI can facilitate artistic processes, leading art professionals to delve further into creative facets. They can experiment with new concepts and mediums, which are of more interest to them (Vogli, 2022). Idea generation, another key benefit of using AI tools is that they can help artists generate ideas for their artwork (Eriksson, 2022; Vogli, 2022). By using AI to analyse data and patterns, artists can gain insights into new styles, techniques, and subject matter that they may not have otherwise considered. This can help them develop more unique and creative ideas for their work, leading to more exciting and engaging artwork. Personalization, AI tools can help artists create more personalized and customized artworks by analysing individual preferences and patterns (Davenport & Mittal, 2022). For example, AI algorithms can analyse an individual's social media activity, search history, and other online behaviour to create personalized art pieces that reflect their interests and tastes. This can help artists connect more deeply with their audience by creating artwork that resonates with them on a personal level. Collaboration, AI tools can also facilitate collaboration between artists, allowing them to work together more effectively and efficiently (Stokes, 2023). AI algorithms can analyse the work of multiple artists and suggest new collaborations based on shared interests and styles. This can help artists expand their networks, build new relationships, and create more impactful and engaging artworks. In this study (Vogli, 2022) was concluded that AI can be a helpful tool for artists, which opens even more possibilities for artistic expression.

The advantages of AI tools for artists are vast and diverse. These tools offer artists novel opportunities to express their creativity, save time, generate fresh ideas, and establish a more intimate connection with their audience. With AI technology developing at breakneck speed, we can expect more and more artists to incorporate these tools into their craft in innovative and fascinating ways.

DALL-E and MidJourney Advantages

In this section are analysed two tools so we can present a direct example of how these can be used by artists. The choice has been made by selecting a free, intuitive tool, popular and with editing possibilities. DALL-E and MidJourney are AI-powered tools offering several advantages for artists looking to create digital artwork.

Here are some of the advantages of using DALL-E and MidJourney (this analysis has been made based on the experience of the author who is also an artist):

Advantages of DALL-E:

- Versatility: can generate a wide range of images, including objects, animals, and scenes, making it a versatile tool for artists looking to explore different themes and concepts.
- Time-saving: can create images quickly and efficiently, saving artists a significant amount of time compared to manually creating images.

- Inspiration: DALL-E's AI-generated images can inspire artists and spark new ideas, leading to more creative and innovative artwork.
- Accessibility: ease of use and accessibility make it an attractive tool for artists of all skill levels, from beginners to professionals.

Advantages of MidJourney:

- Efficiency: can help artists save time and increase their productivity by automating many aspects of the creative process.
- Customization: offers a good range of customization options, allowing artists to create personalized artwork.
- Collaboration: allows multiple users to work on the same project at the same time, facilitating creative collaboration and allowing artists to build on each other's ideas.
- Realism: MidJourney's advanced algorithms can generate highly realistic 3D models and animations, making it an ideal tool for creating lifelike digital artwork.
- Exploration: the wide range of tools and features can inspire experimentation and allow artists to explore new styles and techniques.

Overall, both DALL-E and MidJourney offer significant advantages for artists looking to create digital artwork. From versatility and efficiency to customization and inspiration, these tools can help artists unlock new creative possibilities and create truly innovative and unique artwork.

Criticisms and Limitations of AI Tools for Creating Artworks

While AI tools have many advantages for artists, there are also some criticisms and limitations to consider. Here are some of the main criticisms and limitations of AI tools (this analysis has also been made based on the experience of the author and some extrapolation based on the concerns of other colleagues):

DALL-E and MidJourney Limitations

In this section, both tools are presented together because both have the same limitations:

- Lack of creativity and originality: tools that mimic existing styles can be hindered by a lack of creativity and originality. Although they can create unique combinations of elements, they may not be capable of producing truly ground-breaking or innovative artwork.
- Technical skills required: while designed with user-friendliness in mind, these tools demand a reasonable level of technical expertise to be utilized effectively. As a result, artists who lack familiarity with AI tools or lack access to the required technology may be excluded from their use.
- Potential for homogenization: as AI tools become increasingly popular among artists, this widespread use could result in a lack of diversity and creativity in the output, potentially leading to a reduced variety of art accessible to the public.
- Dependence on data: The output of these is generated by relying on large datasets of images and designs, which makes data a key player. However, the quality and variety of the output is directly proportional to the quality and variety of the input data.
- Ethical concerns: As with all AI tools, there are ethical concerns, particularly regarding ownership and control of the resulting intellectual property. In addition,

there is a possibility that AI-generated artwork could be manipulated or used to deceive individuals.

- Limited control over the output: While DALL-E and MidJourney can generate a wide variety of images and designs, artists may have limited control over the output. For example, they may not be able to control the exact details or composition of the image.
- Limited ability to understand the context: these are designed to generate images based on specific prompts or input. However, they may not be able to fully understand the context or meaning behind the prompt, which could result in unexpected or inappropriate results.
- Lack of emotional depth: AI-generated artwork may lack the emotional depth and complexity of human-generated art. AI algorithms are not able to experience emotions or understand the human experience in the same way that human artists can.

MidJourney[4] presents one different characteristic that was presented in the section 3.1.2 as an advantage but the author feels that it's a limitation when you're working alone: all the experience is mediated by an app – Discord – and you use it along with other persons, so it is like a feed, you're in the creative process that is constantly interrupted by other works, and others can add edits to your work. This is great for a collab process but the author feels it is very intrusive when working in a solo process.

Despite these criticisms and limitations, and the fear that it limits human creativity and expression (Vogli, 2022) AI tools can still be a valuable resource for artists and understanding the potential limitations and drawbacks of these tools, help artists make informed decisions about how to incorporate them into their creative process.

Create or Aid?

As we have seen AI can be used as a tool in the creation of art, figure 1 shows one of the possibilities of the AI-Art creative process. AI is employed in this process as an instrument for the production of art. The artist is mainly responsible for the pre- and post-curatorial activities as well as algorithmic tweaking. Using this process, many outstanding pieces of art have been produced. The generative algorithm consistently creates images that astound both the spectator and the artist overseeing the process (Mazzone & Elgammal, 2019). In this process, some doubts appear about authorship (if the algorithm is created by the artist no doubts will be raised but if it is only modified, that could raise more confusion) and ethics.

Another process is to use tools like Dall-E or MidJourney to speed up the ideation process to preview and generate ideas. In this second process, as it is used only in the Concept Design phase and not in the final composition, it doesn't rise issues with authorship or ethics. Figure 2 shows this process. This is a process that could be used by more artists who use traditional mediums to accelerate the initial phase of sketching.

[4] In April 2023, it ceased to be available for free.

Lastly, we present the process where the artist doesn't create the algorithm, doesn't teach the machine and doesn't have control of the final composition, it's a process where the artist provides a text prompt and presents the public the result, without making edits. This, has become very controversial, and maybe in some years it will be commonly accepted, but the author only supports the first two processes, to avoid authorship and ethics problems.

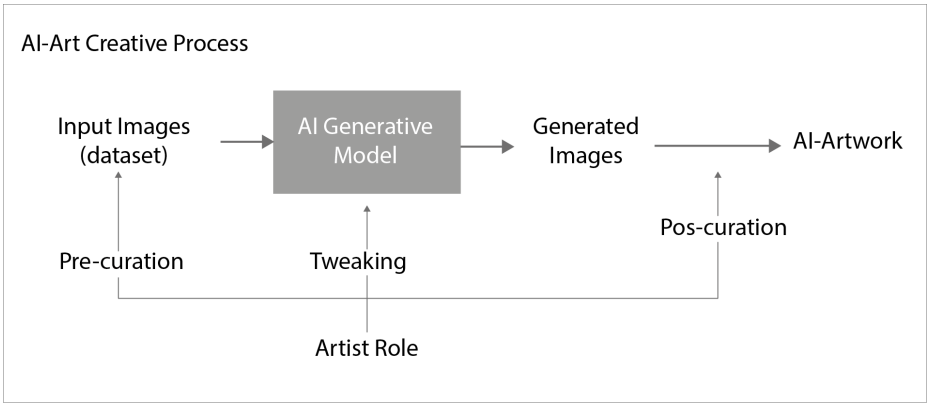

Fig. 1. AI-Art Creative Process diagram (Elgammal, 2018).

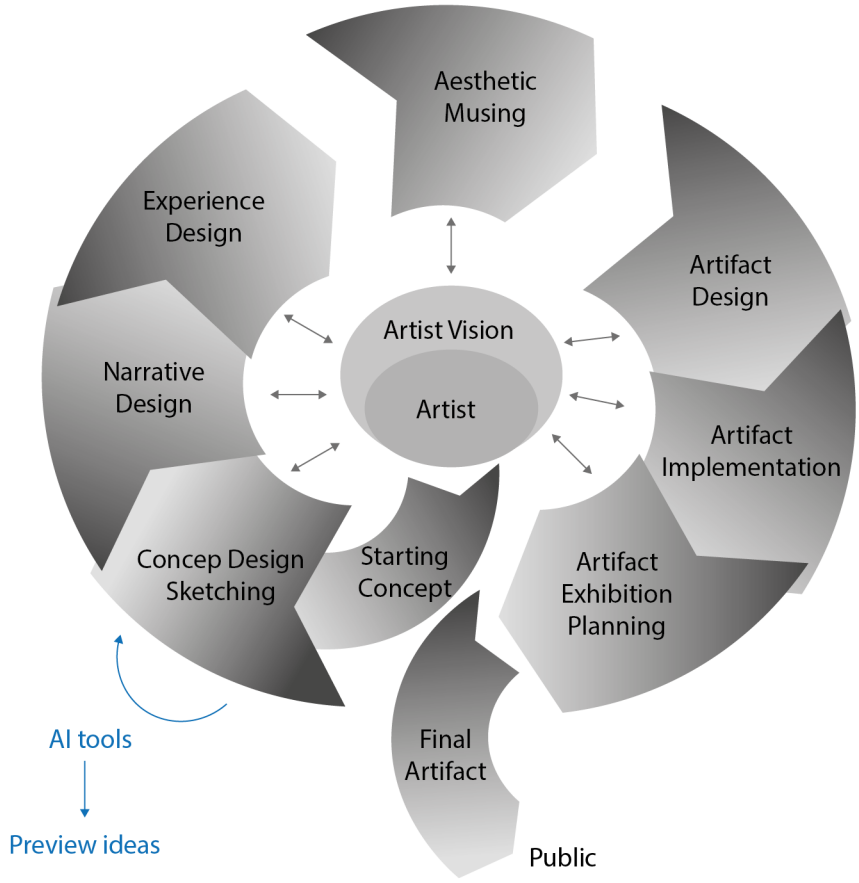

Fig. 2. Creative process diagram for digital art based on the Marcos (Marcos et al., 2009) diagram.

One study (Vogli, 2022) shows that most participants seem to favour the idea of the usage of AI in art however, when it comes to whether AI should be used as a tool or as an artist itself, they seem to rely more on the tool functionality. At the same time, participants find the usage

of AI irrelevant when AI is used as an artist, as a new intelligence that can be programmed to be an artist in order to create paintings in a specific style or expand our development in the field.

Bias and Acceptance of AI Art

The acceptance of AI art among the general public and the art community is a complex issue that has been the subject of various studies and debates. Assessing how the general public feels about recently created artistic works is necessary to determine their significance. One strategy for making the algorithms better is to attempt to comprehend user perceptions. It's also important to comprehend how AI-produced works are received and currently seems to be quite negative (Ragot et al., 2020).

Several studies utilise a modified Turing test (TT) to examine how well humans can tell apart artwork created by humans and artificial intelligence (AI) (e.g., (Boden, 2010; Bruyere, 2021; Daniele et al., 2021)). The TT, though, seems insufficient. In fact, it is impossible to investigate audience impressions with this kind of examination (Ragot et al., 2020). But Colton (Colton, 2008) explains that although the notion of a Turing-style test for computer-generated art is frequently pushed: can viewers distinguish between two paintings that were created by computers and ones that were painted by real artists? This is the incorrect question to ask. Which pieces of art would people buy, then, would be a more pertinent inquiry. In this circumstance, the complete disclosure of the origin of each art would be necessary in order to mimic a real exhibition setting. This would not benefit the computer artist in the current environment, as it is (apparently) unoriginal artistic methods would work against it.

In the studies (Eriksson, 2022; Vogli, 2022) where AI is presented as a tool we can see more acceptance, so if using it as a helper tool is reasonable and "…artists might not want AI to be too prominent in the creative process." (Eriksson, 2022) They see it as a tool that handles the less enjoyable aspects of the creative process so the artist can concentrate on what they find most enjoyable; a helper tool that acts as a teacher by challenging the artists as they work; and finally, a CST[5] used to quickly visualise concepts and variations of a sketch. All of these examples use some degree of AI, but the human artist is always the one who makes the majority of the creative decisions (Vogli, 2022).

One of the main concerns with AI-generated art is the potential for it to replace human creativity and artistic expression. However, many artists and experts in the field argue that AI should be viewed as a tool for collaboration and inspiration, rather than a replacement for human artistry (Hertzmann, 2018).

Art created by AI has sparked numerous debates and concerns, but there are several impressive instances of AI-generated art achieving acclaim in the art industry. For example, the artwork mentioned earlier (chapter 1) highlights a growing interest and admiration for AI art among collectors and art lovers.

The cultural and personal aspects surrounding acceptance of AI art create a multifaceted issue, amidst worries and limitations. Nevertheless, AI holds immense creative potential to break traditional art boundaries and introduce novel artistic infrastructure. With the constant

[5] The purpose of creative support tools (CST) is to aid users across a variety of creative disciplines and sectors in their creative endeavours (Vogli, 2022).

advancement of technology in the art world, it remains crucial to scrutinize and handle all acceptance and influence issues.

Conclusion

With the help of AI tools, the world of art can experience a massive revolution. It is possible to generate new and unique forms of artistic expression, but the lack of creativity and originality, along with ethical concerns that arise, can pose hurdles. Nonetheless, the responsible development and utilization of AI technology can address these obstacles while fulfilling the need for technical skills.

Public acceptance poses a major hurdle in incorporating AI technology into art. There could be a prevailing view that AI poses a danger to conventional artistic methods or worse, eliminating human creativity entirely. For this reason, it's vital that artists and tech professionals unite efforts to educate the masses on AI's possible boons and drawbacks in art, while showcasing the singular and imaginative pieces arising from collaboration with AI. Showing or demonstrating its use as a helper might change public opinion for a more positive one. As with any other tool or technology it needs time to be absorbed and we will examples of good and bad practices; it’s never the tool that is good or bad but its user.

Looking to the future, many potential developments and improvements in AI technology could impact the art industry. These include improvements in image recognition, greater control over outputs, and increased accessibility for artists of all skill levels. It will be important for the art industry to continue embracing and exploring these developments to stay at the forefront of creative innovation.

In further studies, the author pretends to show her experience using AI as a tool and compares results with and without these tools. As the author is an artist and also a teacher, she intends to research the acceptance of using this tool in the classroom and understand if this brings any improvements and motivation for students.

In conclusion, the use of AI in art has the potential to open up new creative possibilities and expand the boundaries of traditional art forms. While there are challenges and limitations to consider, the responsible use and development of AI technology can bring about exciting opportunities in the art world.

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