Exploring the Synergy Between Digital Illustration and AI: An Artist's Insight

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Abstract
Digital art has revolutionized the creative landscape by merging technology and artistic expression. With advancements in technology, the integration of artificial intelligence (AI) in digital art has gained significant attention. This research paper explores the utilization of AI tools, particularly Dall-E (DE) and Midjourney (MJ), in the creative process of digital art. The artworks presented are part of a larger research endeavour focused on the concept of the "sublime void." By embracing AI as a creative tool, artists can push the boundaries of their artistic practice and explore the synergistic relationship between humans and technology. The integration of AI in art has not only enhanced creative expression but also enabled innovative techniques and mediums, fostering a new era of digital art. This paper delves into the impact of AI on the artistic process and highlights the transformative potential of AI-generated art in contemporary art practices. Through this exploration, the author aims to inspire further experimentation and discourse at the intersection of AI and digital art.

Keywords: Digital Art, AI, Creative Process, Dall-E, MidJourney

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Introduction

Artificial intelligence (AI) has emerged as a transformative force across various fields, revolutionizing industries and pushing the boundaries of human capabilities. In the realm of digital art, AI tools have gained increasing attention for their potential to augment and challenge traditional artistic practices. By leveraging the power of machine learning algorithms, AI can generate novel and unexpected artistic outputs, prompting artists to explore new creative frontiers.

This research endeavours to investigate the utilization of AI tools in the creative process of digital art, specifically focusing on the integration of two prominent AI models: DE and MJ. The objective is to delve into the impact of these AI tools on the creation of artworks centred around the concept of the "sublime void," a concept that has historically captivated artists with its elicitation of awe and transcendence. Merging AI's capabilities with the concept of the sublime, we are exploring new artistic expressions of the vast and ineffable.

Previously focusing on traditional mediums like drawing and painting, the author's primary mode of expression is now digital art—a shift driven by a fascination with burgeoning technologies, especially those emerging from computer science. Engaging with AI tools is a natural progression, seeking to discern their potential contribution to artistic endeavours. Initially, there was apprehension about losing artistic control, especially regarding the final composition, due to a limited understanding of these tools—believing the process was as simple as inputting text and receiving an image with no further input. This assumption proved to be a narrow preconception.

After some experimentation with different tools – table 1 shows all the tools that were analysed – the potential of AI to assist in the creative process became apparent.

The research design encompasses the creation of a series of artworks, followed by an analysis of the artistic process and outcomes. This methodology allowed the examination of the potential of AI to inspire, guide, and transform artistic practice, shedding light on the evolving relationship between human creativity and machine intelligence.

1. Digital Art and AI

Digital art has opened up new avenues of creativity and artistic expression with the integration of technology and art. With the advancement of technology, digital art has evolved, and the use of technology to create contemporary art is no longer seen as controversial (Jeon et al., 2019). The use of creative autonomous agents also has cultural and social implications for the way we experience art as creators and audiences (Daniele & Song, 2019). Recently, there has been a lot of discussion around art made with AI and specialized online and offline press have published articles about it over the past few years (Daniele & Song, 2019). The narrative around AI and art is changing rapidly, as evidenced by Christie's auction house selling an art piece allegedly made by AI in October 2018 (Christie’s 2023, 2018).

AI has been utilized in various forms of computer art, resulting in impressive outcomes and gaining attention from galleries globally (Boden, 2009). Artists have begun to use artificial intelligence as a tool for creative expression, allowing them to narrate the hybrid relationship between humans and technology through new virtual experiences and digital art forms

(Giugliano & Laudante, 2020). The value of AI-generated art has also been recognized, with some considering it the result of a synergy between the human artist and the technology. The benefits of AI in digital art extend beyond creative expression and into the market, where it has facilitated the development of new techniques such as 3D printing, animation, and UX design, resulting in a more efficient and cost-effective creative process (Cherniyavskyi et al., 2022). Furthermore, research methods that utilize AI have allowed for new approaches to conceptualizing the relationship between art and technology (Andrade, 2022). The synergy between AI and art has led to the creation of innovative digital art forms that enrich the artistic landscape and provide opportunities for artists to experiment with new techniques and mediums (Ibrus et al., 2022). Additionally, AI technologies have been employed to assist human efforts, providing several techniques that have direct benefits in various fields including the arts. As a result, developing creative synergy between the arts and informatics has become increasingly significant (Hutton et al., 2023).

Table 1- The AI tools tested by the author.

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
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. The Creative Process – Identification of Situations to Interfere With AI Tools

The work presented here is part of a comprehensive investigation into the "sublime void", the author has been researching the alliance between sublime and void since 2012. n examining the interplay between the sublime and the void, the study compares interpretations from Eastern and Western perspectives, noting that Eastern views often align more closely with the sublime. Insights from this analysis will inform the prompt-writing section later in the paper.

Marcos et al. (2009) outlined a creative process for digital art (see Figure 1), which the author adapts for her use. Inside the creative process is a random process in the Artifact Design. For this random process, the artist needed to implement something that would help save some time. The random process it's a way to choose random parts of the Artifact, like colour, shapes, number of colours used, and number of shapes used, all these elements have to be chosen from a list made in a previous phase.

This is a simple task, but it was made by hand, sometimes with little papers inside a bag or with dice, a very archaic process, was easy to do but a little time-consuming. So this was the first thing to change.

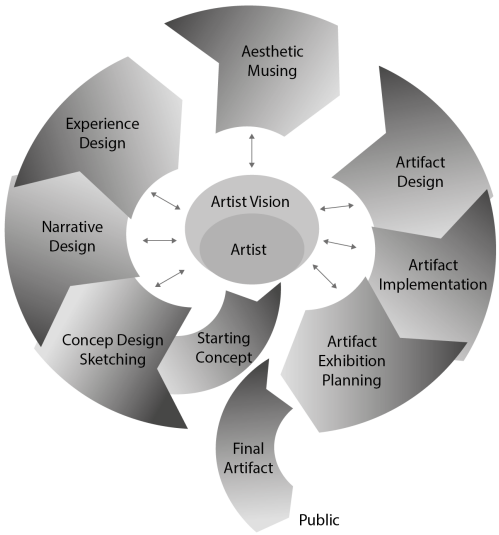

Figure 1- The Creative Process (Marcos et al., 2009)

The other phases the author identified as a possibility to be intervein were the Concept Design and the Artifact Design. In these phases, it could be faster to have a way to preview ideas. When, in search for a faster way, it's not to finish the task faster, it's to not interrupt the ideation process, for example, in the Artifact Design if thinking in a blue square on a yellow background with ten white lines above, the artist needs to make this drawing fast to not lose the chain of ideas; these drawings are, of course, easy and relatively fast, but there are more complex compositions and if the artist spends only one minute, or less, to write a prompt and preview the idea, it's flowing. When the artist is drawing, she spends more than one minute for sure.

After analysing all the phases, a decision was made to not interfere in any other phase because it was very important to not lose the control of final composition.

2.1 The Random Process

In exploring the capacity for AI to make random artistic selections, a trial with ChatGPT 3.5 revealed a tendency to choose the first option presented without additional context. The AI explained that it defaults to the first choice in the absence of more detailed instructions. Realizing the need for a truly random selection process, without the burden of crafting new prompts each time, the author sought a programming solution.

Below is the simple python program presented as the solution:

```
import random

shapes = ['circle', 'square', 'triangle']
colors = ['red', 'green', 'blue']
gradients = ['solid', 'horizontal', 'vertical']

def choose_shape_and_color():
  chosen_shape = random.choice(shapes)
  chosen_color = random.choice(colors)
  chosen_gradient = random.choice(gradients)
  return (chosen_shape, chosen_color, chosen_gradient)

print(choose_shape_and_color())
```

The resulting Python script effectively automated the random selection process, drawing on pre-defined lists of shapes, colors, and gradients. The simplicity of the program allowed for quick changes and rapid generation of new sets of parameters with just a keystroke. Although suggestions to enhance the visual aspect of the program were offered, the priority was a streamlined and swift solution.

2.2 Previewing Process

The previewing phase aimed to preserve the creative flow while maintaining control over the final composition. The selection of tools—Dall-E (DE) and Midjourney (MJ)—was based on accessibility, ease of use, and popularity to ensure longevity and support.

Second: training. Mastery in prompt writing required training, which involved using the "img2prompt" tool to reverse-engineer prompts from existing images. This helped in understanding the type of prompts that could generate desired outcomes.

After this training the next step was to try in booth DE and MJ, Trials with both DE and MJ were conducted to ascertain the best fit for enhancing the artwork without compromising artistic integrity.

3. Testing

The testing occurred on three different days, one for each group at the same time of the day, to mirror the author's normal schedule, avoiding any potential bias from deviations. This is the reason the author decided not to do it all in one day because she typically creates one to two series a day, with each series comprising three to five pieces.

3.1 The Control Group

The control group was made as usual, using the automated process because it kind of became normal, and it’s not too intrusive or mandatory, was not expecting to see big differences with it, and can’t quantify them. Normally only use the program at the beginning of a series or if the series is not working, the artist would come back for another set of parameters. These parameters are not restrictive, for example, got circle, lines, yellow and no gradient (the code has been changed), as one can see in Figure 4 CGS1#1 a square was also used, and for the

other works of the series the artist is free to add or remove elements and disrespected the no gradient “rule”. For this group, two series have been made with a total of eight works (Figures 2 and 3).

Figure 2- Control group S1#1-5

Figure 3- Control group S2#1-3

3.2 Preparations for Dall-E and MidJourney

Prior to using DE and MJ, prompts were fine-tuned using "img2prompt" to align with the artist's style. After analysing the descriptions, there are always, for each description the colour, the shape and the styles/adjectives. Table 2 shows this generated prompt and they’re marked with bold for the colours, italics for the shapes and underlined for the styles/adjectives. This was important to understand what the prompts would require. But immediately thought if this would make the search lookalike. Considering this, the prompts must be written carefully, with differences to avoid getting identical results, and no artist's names were used in the prompts. The concepts used in the prompts were sublime, void, bliss, Bindu, transcendent, etc.

Even though, in the work process, the artist never worries about producing a certain number of series/works in one day, it pursued the two series objective, but the number of elements for each series was not defined. So it started with the same set of elements for each series: S1: circle, lines, yellow and no gradient; S2: circle, dots, red, no gradient. Figures 4 and 5 present examples of images generated in DE and MJ.

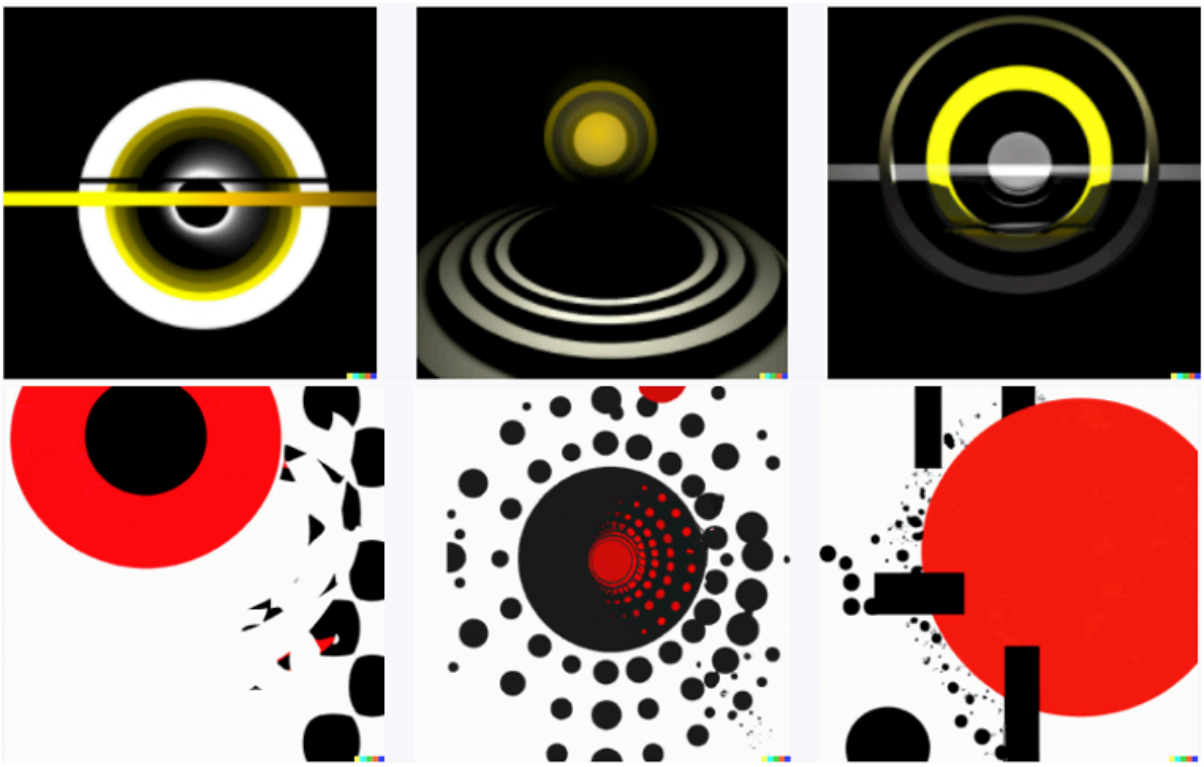

Figure 4- Images generated with Dall-E

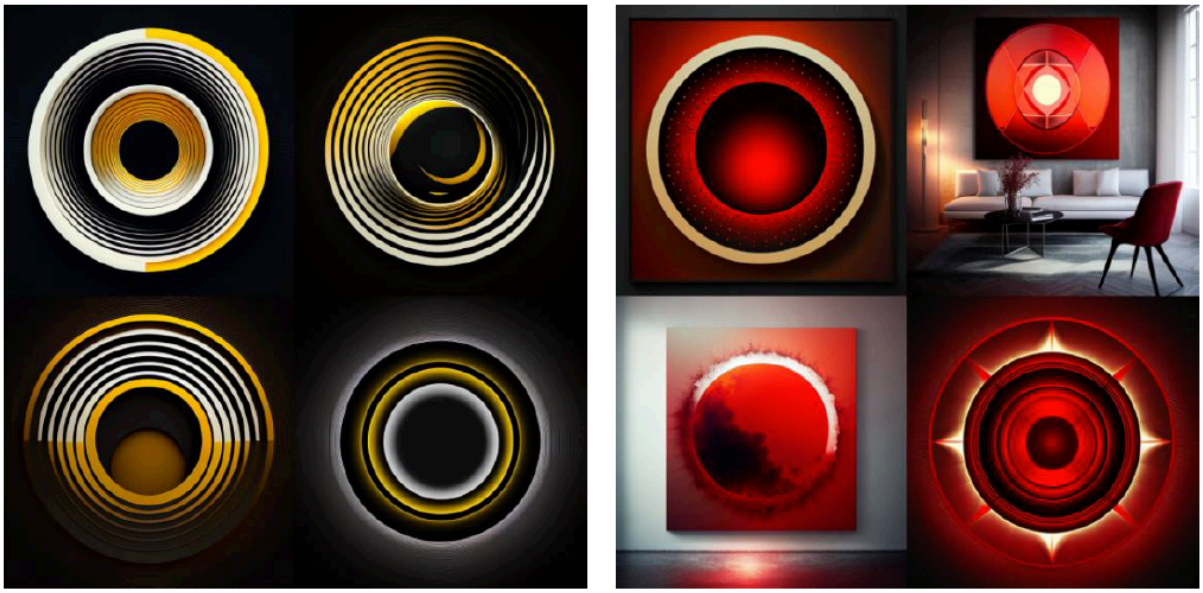

Figure 5- Images generated with MidJourney

Table 2- The descriptions generated from the control group illustrations.

Works	Prompt generated
S1#1	a black and white photo of a **white** *ball*, a raytraced image by Ryoji Ikeda, polycount, precisionism, volumetric lighting, ray tracing, global illumination;
S1#2	a black and white photo with a **yellow** *circle*, an ultrafine detailed painting by Sarah Morris, behance, bauhaus, quantum wavetracing, constructivism, chromatic;
S1#3	a **yellow** and **black** background with *circles* and *lines*, an ultrafine detailed painting by Sarah Morris, behance, geometric abstract art, behance hd, quantum wavetracing, dynamic composition;
S1#4	a **black** and **white** *triangle* on a yellow background, a digital rendering by Sarah Morris, behance, geometric abstract art, behance hd, quantum wavetracing, constructivism;
S1#5	a **yellow** and **black** abstract background with *circles*, a digital rendering by Sarah Morris, behance, generative art, behance hd, dynamic composition, quantum wavetracing;
S2#1	a **red** *circle* with **black** *dots* on a **white** background, a screenprint by Sarah Morris, behance, international typographic style, ultrafine detail, behance hd, constructivism;
S2#2	a **red** *stop* sign with **white** *dots* on a black background, a wireframe diagram by Karl Gerstner, behance, international typographic style, logo, behance hd, ultrafine detail;
S2#3	a **red** *apple* with a **black** *pencil* in it, a minimalist painting by Ryoji Ikeda, behance, bauhaus, ultrafine detail, angular, dynamic composition;

In striving for consistency in the experimental conditions, the artist replicated the use of a specific set of elements across all three days—a practice not typically followed. This is something that never happens, the author, can obtain similar sets, but never used, intentionally, the same set three times in a row.

This unusual repetition was intentional to discern any variations in the final artworks attributable to the AI tools.

The artworks resulting from the aid of Dall-E and Midjourney are showcased in Figures 6 to 9.

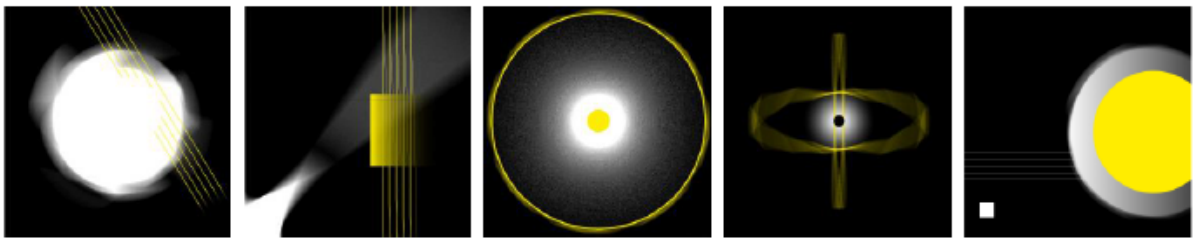

Figure 6- DE_S1#1-5

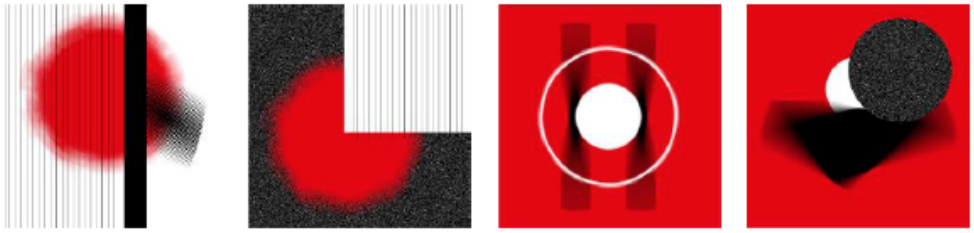

Figure 7- DE_S1#1-4

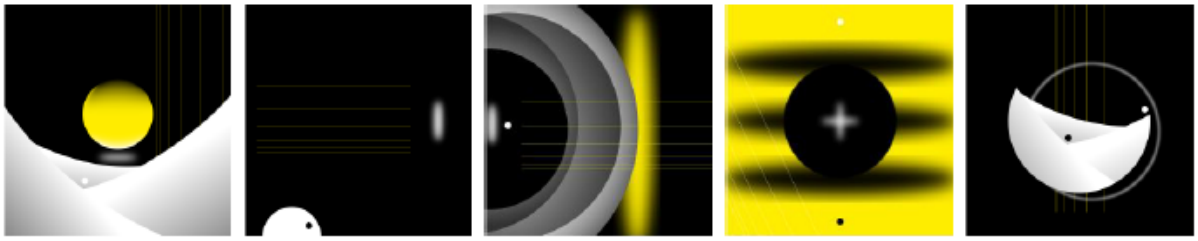

Figure 8- MJ_S1#1-5

Figure 9- MJ_S2#1-4

4. Conclusion

Both DE and MJ are free with some restrictions, DE gives fifteen credits by month, so you can generate only fifteen images by month and since April 2023 DE has stopped providing that for new accounts. MJ limit the number of images to 25 but when it's at almost full capacity it simply doesn't generate images, it warns us and asks for a return at another time and favours the subscribers. So, to not interrupt the process I bought credits to DE and subscribed to a month of MJ.

About the process, DE was better because won't be constantly interrupted by others' work, this is the biggest problem of MJ, understand it is good for collaboration, but should give the possibility of a private room to create alone without having to pay more.

The same happens with the organisation/dashboard in DE the works created are visible when creating new ones, that's very important to understand the evolution and to write better prompts.

In MJ the works are created in an App – Discord – and if you want to see previews works must go to the account on the MJ site.

As for the quality of images and prompt writing difficulties, they're equivalent, but the MJ images are closer to the author's visual preferences.

The big questions are: did this help the author make her work? And how? Is she going to keep using it? There isn't a yes or no answer, the author feels that sometimes, in concept research, she could preview some ideas and in a creative block (during Artifact Design) she could reach for these tools to help, but she will not include this as a regular step. About timesaving, yes, it truly saves time, but the author realised that she needs that time to think, she already was expecting that this wasn't going to be a real improvement, but the author is not exempt, she's used to working without DE/MJ, and might need to try more times this way, to get used to.

As for the quality of the final compositions, the author doesn't feel any differences maybe because they're made the same way as the others and no images or parts of images generated by DE and MJ were used. But without the help of these tools, the author can attest that she couldn't keep working in the same set of elements for three successive days, she would have been blocked.

The three groups – control, DE and MJ – encompassing two series each, appeared divided, as six series, but it's only two. The first one is one big series with fifteen works, and the second series – circle, dots, red, no gradient – has eleven works, the artist has never done series so numerous (Table 3 shows the number of works produced).

The author concludes that both DE and MJ aided series, were made faster, bigger and without creative blocks. No compromises were made in the final compositions, all the works are originals and made by the author.

Table 3- number of works produced

Set of elements	"circle, lines, yellow and no gradient"	"circle, dots, red, no gradient"
Control Group	5	3
Dall-E Group	5	4
MidJourney Group	5	4
Total	15	11

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