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Will Art Generated by Artificial Intelligence Replace the Role of a Graphic Designer?

Keondre Jones

WILL ART GENERATED BY ARTIFICIAL INTELLIGENCE REPLACE THE ROLE OF A

GRAPHIC DESIGNER?

by

Keondre Jones

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Abstract

Artificial intelligence (AI) programs are beginning to generate art and design at levels once executed by trained graphic designers. Prior perceived threats have come from automation and the rise of computer-assisted graphic design, particularly Adobe Photoshop. Concerns associated with AI-based image generation programs and tools, such as DALL-E 2, Midjourney, and Stable Diffusion, present far more complex questions and rapidly changing conditions. By comparing three separate design activities, this thesis provides one perspective on the wider problems facing the graphic design field. Specifically, three creative processes for producing graphic design will be examined: (1) the designer working purely on their own, without AI assistance; (2) the designer working in close collaboration with an AI program; and (3) a non-designer who adheres to the AI as much as possible to create their work. Implications for graphic design production are discussed.

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Chapter 1: Introduction and Background

Recently, the discussion concerning the use of automation to replace workers has become increasingly prevalent. It has been an ongoing factor in the food and automotive industries for years and in many ways can be seen as an unavoidable result of technological advancement. In the age of the internet, it has even entered the field of entertainment by way of algorithms that dictate what we see based on our own past viewing behaviors. The creation of art itself is no longer immune to automation with the rise of artificially intelligent (AI) image generators such as DALL-E 2, Midjourney, and Stable Diffusion, the primary three programs currently defining the frontier of this new technology. With that in mind it would be reasonable to use the first of these programs to gain prominence, OpenAI's DALL-E 2, as a means of understanding the ramifications of AI-generated art. What is the legitimacy of claims that artists are having their work stolen? How has this impacted the job market for artists? More specifically, how has this impacted the field of graphic design? Will art generated by artificial intelligence replace the role of a graphic designer? Going forward, as these technologies continue to develop it will become increasingly important to examine the pros and cons of the technology and the arguments in favor of its use as well as the dissenting and skeptical opinions of others. We must understand how this technology functions, and the ways we can collaborate with it, and be mindful of the ways this sort of technology can get away from us and cause further problems. This subject is massive and is constantly evolving. Not only is the technology itself continuing to develop and be improved upon, but the legal responses to the technology are also still very much in flux. To provide some insight on the status and usage of DALL-E 2 and similar tools, two colleagues and

I explored its usage in the execution of a concept in the most basic aspects of a typical graphic design project: logo, simple brand merchandise, a product, and an advertisement.

Brief Definition and History of Automation

Automation can be defined as the substitution of human labor and thought with computers, algorithms, and mechanical labor (Encyclopedia Britannica). The simplest example of automation can be found in the auto industry, where the rise of using automatic mechanized production led to a decline in human workers. The roots of automation can be linked directly to the mechanization that began with the Industrial Revolution. Mechanization is the replacement of human and animal labor with machinery. This habit or knack we have as humans to build tools and create machines would ultimately lead us down the road of mechanization and eventually automation (Encyclopedia Britannica).

Printing Press

The earliest and most important connection to graphic design and automation is the invention of movable type, which has roots in Chinese history and, later, Gutenberg's printing press. From Gutenberg's 1455 edition of the Bible, printing technology advanced onward. Eventually, these classical presses gave way to the metal press, the rotary press, and the offset press. In modern times, electrically powered printing gave individuals the ability to print in their own homes, and digital technology has replaced print-based artifacts, such as books and newspapers, with computers and smartphone screens.

Computer-Based Graphics and Photoshop

In his article for the Journal of Fine and Studio Art, Godfred Yeboah Annum discusses the rise of digital painting (Annum, 2014). He notes that the roots of the technology date back to the first computer drawing system, 'Sketchpad' which was introduced in 1964 (Annum, 2014).

Sketchpad was created by Doctor Ivan Sutherland and originated as his doctoral thesis (Encyclopedia Britannica). It would go on to influence future digital painting technologies such as Corel Paint, Painter 3D, and most importantly Photoshop. Adobe's premier photo manipulation and digital painting technology, Photoshop was created in 1987 by Thomas and John Knoll. One year later the brothers would sell the distribution license for their technology to Adobe Systems Incorporated. The program would go on to sell well and eventually became a major fixture in industries such as advertising, publishing, and web design, prompting Adobe to purchase the rights to Photoshop from the Knoll brothers in 1995 (Encyclopedia Britannica). With full rights to the Photoshop technology, Adobe would go on to expand the program into the Adobe Creative Suite, which over the years would go on to include Adobe Illustrator, Adobe InDesign, and Adobe XD.

As it advanced over the years, several features within the Adobe Creative Suite, now the Adobe Creative Cloud, could be handled through the use of algorithm-based functionality. These algorithms streamline potentially complex and tedious parts of the artistic and design process, including color correction, spot healing, and other photographic processes.

History of Artificial Intelligence Research

Artificial intelligence can be defined as "the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings." (Encyclopedia Britannica). Intelligence, while typically relegated to a descriptor of human behaviors, is composed of multiple categories in the field of AI: learning, reasoning, problem-solving, perception, and the use of language.

The 2019 article from Michael Maenlein and Andreas Kaplan entitled "A Brief History of Artificial Intelligence: On the Past, Present, and Future of Artificial Intelligence" discusses the

fact that the true origin of AI as a concept is difficult to pin down but can be connected to

Runaround, a short story written by Isaac Asimov in 1942. The story featured the Three Laws of

Robotics which defined the role and relationship between humans and robots. Maenlein and

Kaplan cite Asimov's work as an inspiration to generations of scientists in technological fields

such as computer science, robotics, and of course, AI. Within the same era, an English

mathematician named Alan Turing developed a code breaking machine for the British

government during the Second World War. Turing went on to publish an article titled

"Computing Machinery and Intelligence" in 1950 which describes a means to create and test

intelligence in machines (Maenlein and Kaplan, 2019). The test, which still serves as the

benchmark for identifying artificial intelligence, is known as the Turing Test. Simply put if a

human being that is interacting with both another human and a machine but cannot distinguish

which one is human and which is the machine then the machine can be identified as intelligent

(Maenlein and Kaplan, 2019). Years following Turing's paper, Marvin Minsky and John

McCarthy would coin the term artificial intelligence in 1965 at a Dartmouth College workshop,

the Dartmouth Summer Research Project on Artificial Intelligence (DSRPAI) (Maenlein and

Kaplan, 2019). The objective of the DSRPAI workshop was to create a new area of research

around the idea of building machines capable of simulating human intelligence.

  Two examples of success in the field of AI following DSRPAI include ELIZA, a natural

language processing tool and one of the first programs capable of attempting to pass the Turing

Test, and the General Problem Solver Program, which was able to solve certain simple problems.

These successes were followed by a proverbial drought in the AI field for several years before

IBM's chess playing program Deep Blue defeated the world champion Gary Kasparov. While

that was an achievement for the field, an Expert System, like Deep Blue was still incapable of

feats that could be truly considered intelligent, being unable to perform tasks such as recognizing faces. In 2015, Google developed another chess playing program called AlphaGo, which instead of being an Expert System, utilized a type of artificial neural network referred to as Deep Learning (Maenlein and Kaplan, 2019). We are familiar with this technology in the form of the image recognition algorithms used by social media companies like Facebook.

Since the 1950s, experts in the field have been anticipating artificial general intelligence (AGI) systems that behave in a manner identical to humans, including showing cognitive, emotional, and social intelligence. AGI seems to be the end goal of AI development, AI that truly functions like human beings. Ben Goertzel (2014) wrote in great depth about the concept, study, and approaches surrounding the idea of AGI in his paper "Artificial General Intelligence: Concept, State of the Art, and Future Prospects." For the purposes of this study, it is important to consider AGI as and end point in relation to the current technologies being discussed as well as the perspective of those developing them. OpenAI CEO, Sam Altman wrote a blog post in February 2023 that opens with the following line: "Our mission is to ensure that artificial general intelligence—AI systems that are generally smarter than humans—benefits all of humanity" (Altman, 2023). The post goes on to list potential benefits but also acknowledges massive risks and can be summarized as a desire to accelerate humanity's development with the assistance of AGI. This largely seems to mean helping humans understand and evaluate extremely complex systems or models, pushing science and research in many fields forward. The intent is to develop slowly and cautiously to avoid developing a system that is both smarter than us and malicious. The post, however, lacks clarity as to why Altman and OpenAI believe this is something humanity needs. With the end goal of AGI in mind one of the many tools used to reach that end is DALL-E 2, the AI image-generating program.

Origins AI Image Generation

Steven Zapata in his keynote speech for the Concept Art Association's Artificial Intelligence/Machine Learning Media Advocacy Summit discusses the earliest era of AI image generation in 2015 when DeepDream and AlignDraw were the most advanced versions of this type of technology: "...I think its important to just remind us of this, that this didn't just happen last year and that it did have sort of a state in which it was incubating, and then we wound up where we are now. And I think that that is important because one of the reasons this all snuck up on us is because we were a little resistant to sort of broadcasting into the future in these sci-fi ways about what these systems could become" (Zapata 2023, 00:07:46-00:08:11). These programs would process surreal and dreamlike imagery and nothing that one would consider realistic. Zapata continues his speech by discussing generative adversarial networks (GANs) as the next step of AI image generation, essentially GANs encapsulate the development of the technology up until about 2020. Writer Anjana Samindra Perera in his 2021 article summaries GANs as follows: "Generative models try to generate new data using uniform noise. It takes as input training samples from some distribution and learns a model that represents that distribution" (Perera). The process surrounding the functionality of GANs is more complex than that initial explanation Perera provides but for the purposes of this study focus will be held on the technological successors of GANs.

OpenAI's DALL-E 2 and the images generated with it making their way into public circulation can be deemed the start of a new era of AI-generated images. Through the course of 2022, three AI image generator programs rose to prominence: DALL-E 2, Midjourney, and Stable Diffusion. Zapata (2023) provided a simple explanation for how these tools function: "These generative AI systems, take a natural language prompt given by the user and they

produce an image. You type a sentence; you get a picture. It sounds simple, but it is not actually that simple. But the reason we are here is that in order to condition that capability these systems need to be trained on datasets containing millions of images that are scraped from the web, including people's copyrighted created works. But that is not all that's in there, some of it is troubling, some isn't." (Zapata, 2023, 00:09:19-00:09:48). For the purposes of this study, the discussion will cover shared functionality among AI image generators, offer specific insights regarding DALL-E 2, and explore particular legal actions impacting AI. DALL-E 2 is the frontrunner in this wave of programs, recently made available to everyone with an account; it is the easiest to utilize.

A more technical description of the way DALL-E 2, Midjourney, and Stable Diffusion work. The basis for this AI technology is called Generative Pre-trained Transformer 3 (GPT-3). The computer code for GPT-3 was developed by OpenAI, a non-profit turned for-profit. The alphabetical component of the name GPT-3 will sound familiar to anyone keeping track of the news surrounding ChatGPT, which also fixes GPT-3's original purpose of generating text. OpenAI modified its own version of GPT-3 to develop what we now call DALL-E 2, which produces images using a technique called diffusion modeling (Hartsfield, 2022).

Diffusion models perform two sequential processes. They break images down, then attempt to recreate them. The images fed into the datasets are associated with words to give them meaning: dog, cat, car, sky, etc. This begins the diffusion process, meaning that the images are moved through a series of sequential steps. The breakdown sequence essentially creates random noise in the images in a scattershot manner until the images are reduced to meaningless static. The next step involved running the previous process backward this time starting with the remaining noise, through a series of steps it attempts to restore the meaning that it took away.

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This phase is essentially judged by the chance the less noisy image generated in this step has the same meaning as the original image (Hartfield, 2022). Hartfield makes the following analogy to help understand the hundreds of billions of parameters that go into "training" these models, "Think of little dimmer switch knobs that adjust a light circuit from fully off to fully on — within neural networks in the code to "turn up" steps that improve the probability of meaningfulness of the image, and to "turn down" steps that do not" (Hartfield, 2022). Performing this process over and over on many images, tweaking the model parameters each time, eventually tunes the model to take a meaningless image and evolve it through a series of steps into an image that looks like the original input image.

Words are also moved through this process alongside the training images so that the models are not only trained to produce an image, but specifically images with a descriptive meaning associated with it. As Steven Zapata said in this keynote speech for the AI/ML Summit, these datasets are trained on millions of images from across the internet (Zapata, 2023). The reason DALL-E 2 and the other image generators can get so specific and odd with images created from the prompt phrases is because that mix of content is what exists on the internet.

The details of how the diffusion model works are complicated and involve large amounts of complicated math. In the words of Hartfield (2022), "The mechanisms of the code are understandable, but the system of tweaked parameters that its neural networks pick up in the training process is complete gibberish" (Hartfield, 2022). The final outcome of all this code, math, and data scraping results in a confusing scenario where we cannot predict exactly how and why an AI like this works. "We can only judge whether its outputs look good," as Hartfield (2022) put it. Proponents of generative AI put a lot of stock into the output of these tools but

implementing them at a large scale without understanding how they actually arrive at point B from point A is risky.

As Steven Zapata (2023) stated, DALL-E 2 was the first of the 3 major image-generating platforms to make its way into the public eye in a meaningful way. Following the research launch of DALL-E 2 in April 2022, Sam Altman (2022) posted a blog post summarizing his hopes for DALL-E 2: "Hopefully this summer, we'll do a product launch and people will be able to use it for all sorts of things. We wanted to start with a research launch to figure out how to minimize the downsides in collaboration with a larger group of researchers and artists, and to give people some time to adapt to the change—in general, we are believers in incremental deployment strategies. (Obviously, the world already has Photoshop and we already know that images can be manipulated, for good and bad)" (Altman, 2022). The blog post offers an optimistic perspective on a new technology lacking any hint of the uproar the program would eventually cause.

Originally, access to DALL-E 2 and the other AI-driven services that OpenAI provided was locked behind a waiting list until October 2022. Prior to DALL-E 2 becoming easily accessible to everyone, a derivative service called DALL-E mini (now known as Craiyon) made its way around social media. For the most part, users created silly and creepy imagery for memes to shock their fellow users. In the following months, Midjourney and Stable Diffusion became more widely known, likely due to not having a waiting list as a barrier between users and the tools. In his October 2022 article Anjana Samindra Perera compares the big three image generation tools. Utilizing 5 identical prompts in all three AI tools he compares the results and concludes that each has its own strengths, concluding that DALL-E 2 in particular seems to excel in terms of creating images of natural-looking people (Perera, 2022).

DALL-E and other AI image generators place significant emphasis on their prompt processes. The "skill" of knowing what to say and how to say it to get the desired results can instill the feeling of having created something, almost as if from nothing. The ease with which ideas transfer from text prompts into visuals one can see and even manipulate with further use of the program's features is the precise reason traditionalists are concerned or even outraged at the perceived lack of skill involved in the method of image generation. For instance, in addition to expected prompt subjects like "cars" or "dogs," a user can directly emulate the style of known artists with prompts such as "Illustration by Van Gogh." This capability is the most prominent controversy surrounding image-generating AI by far, but these programs are not without their shortcomings in function in addition to ethics.

While DALL-E 2 limits users from generating images featuring public figures or violent acts as the basis for their output, not all of them do. Stable Diffusion, for example, allowed users to not only generate images with celebrities and political figures as their focus it also allowed you to generate controversial and violent images prior to the release of Stable Diffusion 2.0 near the end of 2022 (Growcoot). However, with the open-source nature of Stable Diffusion technology, there will be users with the skills to circumvent the use of the official filters and to generate images featuring adult content or controversial.

Gaps

The gaps in the field of Artificial Intelligence are numerous and constantly fluctuating. There is a general lack of understanding in many cases about how and why AI programs generate the exact output that they produce. This fact is not limited to image generators but includes other generative technology such as ChatGPT. There is a generalized lack of understanding about the impacts these technologies will have in the long term because the situation is both new and

ongoing. Due to this lack of understanding, there are discrepancies between the goals of the individuals financing this technology, those actively involved with creating this technology, those making use of this technology, those potentially harmed by the use of this technology, the legality of how this technology is used, how the media covers the subject of AI technology, and lastly, how the general public views this technology as a result of all preceding factors.

Purpose of the Study

The purpose of this study is to consolidate and examine the circumstances surrounding AI-based image generator technology. The situation involving this technology has been rapidly evolving since it came to the mainstream in 2022. The first major public glimpse of this technology through DALL-E mini circulating as a meme has evolved into the Concept Art Association holding an Artificial Intelligence/Machine Learning Media Advocacy Summit in March 2023 to discuss the tangible ongoing harms and the potential risks on the horizon. As with all technologies, there are pros and cons to their use and implementation.

Significance of the Study

While the arena of this burgeoning technology is as vast as it is chaotic, there are specific perspectives that can be examined. The field of graphic design is one industry that would certainly feel the impact of this technology if was made the norm. A separate issue exists within the graphic design industry where work is lost to the cheap labor found through services such as Fiverr. It is no small logical leap to imagine the use of AI image generation being applied to remove the input of traditional creatives from the field altogether. This thesis will explore in depth the harms the implementation of generative AI has already had and the further risks it poses. The case study component of this thesis will investigate three routes for the future of graphic design: (1) the designer working purely on their own, as they would today; (2) the

designer working in close collaboration with an AI program to create their work; and (3) a non-designer who adheres to the AI as much as possible to create their work.

Chapter 2: Literature Review

Introduction to the Literature Review

The controversies presented by AI image generation technology are plentiful, particularly in regard to the careers of the many creative fields that it actively obstructs. These fields include digital art, photography, fashion design, and the focus of this study, graphic design. The controversial dilemma swirling around AI includes arguments both for and against it's usefulness.

Beginning of the Controversy

The controversy of AI-generated art came to a fever pitch with the news that an AI-generated piece won an art show during the 2022 Colorado State Fair. The artist who submitted the art is Jason Allen, a video game designer by trade. His AI-generated entry won him a $300 prize for the Colorado State Fair's digital arts contest. He did not disclose that his piece was created using Midjourney until after the fact, via Twitter (Kuta, 2022). The judges for the competition stated that while they did not know that Allen created his entry with AI, he still would have been given first place, even if they had been made aware. His piece did not explicitly violate any existing rules. Despite the fact that Allen did not break any rules, this did not prevent the story from igniting controversy. In response to the debate around his winning submission, Allen said that "To developers and technically minded people, [A.I. is] this cool thing, but to illustrators, it's very upsetting because it feels like you've eliminated the need to hire the illustrator." (qtd. in Kuta, 2022). The fear of being replaced is at the center of the opposition

coming from creatives in regard to AI as it currently exist, but there still both passive acceptance of this technology and staunch defenders of it on the other side of the aisle.

Pro AI Stances

In response to the situation revolving around this state fair art contest Marguerite De Leon of the Filipino news outlet Rappler interviewed several individuals from the creative industry in her September 2022 article. For illustrator and photographer Julian Cirineo, such AI programs make creation easier, but they do not necessarily cancel out the human behind the controls – and may in fact even empower less-skilled people. Photographer Rob Reyes agrees with this notion, seeing AI art as a tool, and not a threat. Finally, art writer Alice Sarmiento feels that "too much currency is placed on classical forms of artistic production," and that she finds the development of the technology "fascinating" (De Leon, 2022).

Harry Tiffany V begins his September 2022 Medium article by assuming most people perceived AI art as the archaic and visually trippy "deep dreams" images that briefly made their way around the internet. He states that when this is the starting point for understanding AI images it is natural to react negatively to it as it wins art shows. The writer goes on to explain that because AI has been trained on millions of preexisting works in a wide variety of creative fields, it is now far more mature than those "deep dreams" origins. Through the use of prompts, he feels that AI is not the artist but a tool to be used by people. "With proper use of these A.I. tools any designer becomes an Art Director with a team of A.I. designers and interns working underneath them, iterating their ideas." (V, 2022). Tiffany strikes the comparison between AI-generated art and Marcel Duchamp's "Fountain" in that it disproved the idea that art needs to be something one spends time working on or produces by hand, ultimately suggesting AI art is a modern equivalent of Dada "ready-made" pieces (V, 2022).

In her October 2022 *Medium* article, Deborah MT paraphrases a statement from the musician Grimes where, after posting her own illustration of Dune fan art, she questioned whether or not it made sense to spend hours of time and effort on illustration when AI such as DALL-E and Midjourney can do the same in seconds. The article references "art" generating AI and robotics in media such as "Brave New World" and the video game "Detroit: Become Human" and how such situations are often more dystopian than optimistic. The inclusion of AI in the discussion of "What art is" only serves to further complicate the issue. The article suggests that much like with other media we will eventually see AI art as "art" and that our adoption of this technology is not a matter of "if" but of "how", implying that we are already at a point of no return in regards to this technology becoming a part of our lives. The article concludes with the following statement: "If the future of work involves technology as a form of liberation (as Marx already proposed in *Grundrisse*), it seems to me to make sense to imagine that AI can and should be used to free artists from strenuous tasks. With this, artists will be able to produce in their own time and in their way without reaching the point of burnout" (MT, 2022). This perspective is optimistic and is one of many examples of proponents of AI claiming the technology will be used to aid creatives in the development of their art.

Further discussion on the subject can be found in Rodolfo Ocampo's article for *The Conversation.* Ocampo makes the comparison between AI-generated images and the rise of the electronic synthesizer as a tool that did not kill music, just as photography did not kill painting. Ocampo submits the idea that the impact of AI will not be a black-and-white issue, not as simple as good or bad (Ocampo, 2022). In the final sentences of his article, he lists several societal woes and admits to the risks of AI. "We live in an attention economy that thrives on extracting screen time from users; in an economy where automation drives corporate profit but not necessarily

higher wages, and where art is commodified as content; in a social context where it is increasingly hard to distinguish real from fake; in sociotechnical structures that too easily encode biases in the AI models we train. In these circumstances, AI can easily do harm" (Ocampo, 2022). AI as it currently exists can certainly do harm, the release of any technology on to the populace when even the creators behind it lack understanding behind its functionality is not only naive but it is negligent.

Counterarguments Against AI

In Marguerite De Leon's September 2022 article, not all of the interviewed creatives viewed AI as a boon for human creatives going forward. For creative director Emil Mercado, it is the efficiency of artificial intelligence that presents the most potential risk, as it could very well exploit an already toxic industry (De Leon). The concept of the "starving artist" is not an unfamiliar one, and Mercado's statements allude to the idea that the situation for artists and creatives could get much worse when humans are forced to compete with AI. Teacher and book designer Adam David doubles down on this idea as well stating, "Trite as it may sound, the actual human artist, no matter how poorly they can render a hand (like me all the time) or how poorly they can string up words (like me sometimes) still imparts character and soul and complexity in the work that no AI, no matter how precise, will ever be able to do, until it gains sentience to correct itself and to make mistakes – not because it learned it from the terabytes of data it processed for rendering, but because it learned to have its own tastes and opinions and biases from all the drawing and writing it's been doing" (qtd. in De Leon, 2022).

Initially, early conversations were similar to those in the above article but eventually, users experimenting with AI image generation started to pick up on the fact that known work can be reproduced through the use of these generators. Significant amounts of discussion exists

surrounding the impact of AI on traditional and digital drawing and painting, and the subject will be explored deeper in this thesis. However, there are other creative industries, affected by AI that do not come to mind initially nor are discussed quite as actively. Artist Karla Ortiz has been very vocal online on the subject of AI images and in November 2022 posted a tweet discussing plagiarism in regard to generations from Midjourney. Her tweet features four generated images that are nearly identical to Steve McCurry's 1984 photographic portrait of Sharbat Gula titled "Afghan Girl" (Ortiz, 2022). The datasets used to train these generators do not begin and end with drawing and painting, photographers are at risk in similar ways.

In August 2022 Alex Baker wrote for DIY Photography about the threat AI could pose to the photography industry. When discussing the potential impact of image generators, Baker said that: "In the past three months alone, the quality of the images being outputted has improved at an alarming rate. The software has sampled countless numbers of photographs and paintings, and it is now beginning to get artists uncomfortable. Conversations on social media are discussing whether AI will eventually take jobs and leave a trail of destruction across the creative industries." (Baker, 2022). For this article, Baker interviewed photographer and 3D visual artist Aurel Manea. Manea believes that photography as a commercial product, areas like stock photography, are more or less doomed as a result of AI. Baker's article features two of the twelve hundred AI-generated landscapes Manea created as an experiment that are functionally indistinguishable from well-executed photographs (Baker, 2022).

Baker's article continues by touching on the fashion design industry. Alex London, a costume and fashion designer was hired to craft concept work, and the company he was working for fed samples of this work into AI. London described his feelings as such: "It looked like something that I would have done, which was surreal. Not to put too fine a point on it, the whole

thing feels like yet another way not to pay creatives a fair wage" (qtd. in Baker, 2022).The rise of DALL-E and the other image generators is not the fashion's first foray into the world of digital automation. In his October 2022 article, Matthew S Smith discusses AI and Fashion with Andrew Wyatt who co-founded a platform called CALA. CALA is built for fashion designers to have a more accessible way to turn their ideas into something tangible. The platform began to use DALL-E's Application Programming Interface (API). Simply put DALL-E would be integrated into the functions of the CALA service (Smith, 2022). Wyatt discussed the value of variations here: "We want to let people take an idea and just follow the rabbit trail, through variation after variation after variation. We think it's going to help people come up with way crazier and different concepts" (Smith, 2022).

The intersection of the photography and fashion industries is fashion photography and modeling, but these are not safe from the reach of AI either. In his March 2023 article, Jaron Schneider discusses the announcement that Levi Strauss & Co. would be partnering with digital fashion studio Lalaland.ai to generate AI avatars to increase diversity. Lalaland.ai is based in Amsterdam and they use AI to enable brands and retailers to create artificial but hyperrealistic-looking models over various body types, sizes, ages, and skin tones. In Levi's own statement on the announcement, they said that "Later this year, we are planning tests of this technology using AI-generated models to supplement human models, increasing the number and diversity of our models for our products in a sustainable way" (Unzipped Staff, 2023). On March 28th, 2023 Levi released an editor's note on the statement in response to the backlash and controversy that it caused. The idea of brands using AI-generated people as a means to facilitate diversity rather than hiring working models to reach that goal was frowned upon. The follow-up statement backpedaled Levi's aims in regard to diversity "We do not see this pilot as a means to advance

diversity or as a substitute for the real action that must be taken to deliver on our diversity, equity, and inclusion goals and it should not have been portrayed as such" (Unzipped Staff, 2023). Considering the direct mention in the original announcement of using generated models for the sake of diversity it is hard to take the retraction seriously. Levi's simply happens to be an early example of companies actively trying to put AI where people of color would otherwise be.

Control of other people's images and identities is a significant concern for the modeling side of the AI debate. Creative and model, See Lo took to Twitter on March 28th, 2023, to discuss how a number of her modeling videos had been stolen and repurposed, editing her face to appear as a Caucasian woman. AI in conjunction with Deepfake and FaceSwap technology allows for the use of a person's likeness that completely removes their identity. As stated previously, the imagery that AI outputs is fueled by preexisting images, even if the outcome is not deliberate theft as with the case with Lo, it all comes from somewhere for it to exist at all (Lo).

Another example of an industry impacted by AI is animation. At the end of February 2023, a popular *Youtube* channel called Corridor released a video called "Anime Rock, Paper, Scissors" and a complimentary video on a secondary channel titled "Did We Just Change Animation Forever?" The animation itself is better described as a filter placed over live-action recordings. Functionally it is rotoscope animation or motion capture animation without the involvement of the animators. The final result, even with the work put into their custom dataset, still features the telltale signs of AI in messy hands and fluctuating numbers of teeth from frame to frame. In the complimentary video, Niko Pueringer of Corridor begins by discussing how traditional 2D animation, despite being the more creatively free, is the "least democratized" because it takes a lot of skilled people to make it work. Niko says that "I think we came up with

a new way to animate. A way to turn reality into a cartoon. [It's] one more step towards true creative freedom where we can easily create anything we want" (Corridor, 2023). He continues by breaking down how AI image generation works and how Corridor went about engineering their AI to achieve their desired results. "Went and took a bunch of frames from "Vampire Hunter D: Bloodlust", which is an anime that came out in 2000. And we tried to grab frames of different people, some face shots, some torso shots, full body shots, hands, hair, and even some abstract things like flowers. Because with all these different objects with each picture effectively being a different object, a different character when we train the model, it is not going to learn a single subject, instead, it is going to learn the style in which all these subjects are drawn" (Corridor, 2023). The statement reads as rather flagrant use of the work of other artists' without the slightest consideration to consent from those artists. *Youtube* personality Geoff Thew discusses Corridor's AI-generated animation in his own video "AI "Anime" - An Insult to Life Itself (re: Corridor & Netflix)" "Computers can only copy and remix existing man-made art and no matter how much we refine existing machine learning tech unless they miraculously machine learn to feel and think organically that will never change" (Thew, 2023). This statement tackles the root of a recurring idea that AI has truly reached a state of intelligence which remains untrue. Despite this fact, AI has continued its proliferation through our society and has become a point of discussion for graphic design in addition to the more traditional artistic industries.

The Relationship Between AI and Graphic Designers

Positive Perspective: Designers living with AI

The graphic design industry is no exception to the concerns that are arising in response to AI image generators but those concerns did not rise immediately. As Steven Zapata pointed out in his keynote, this situation is not brand new and it has risen over time. Zapata was not the only

person with the foresight to consider the role AI would play in the design industry. In 2019, product designer Jasmine Oh wrote an article entitled "Yes, AI Will Replace Designers" for Medium. Oh discussed the failures of early AI image generation to understand nuance, generate original imagery, and filter biases, all are issues that continue to be discussed in the context of more refined modern AI. Oh also addresses the strengths of AI as follows: dynamic personalization, handling of variables, and creation of variations. The first point is a summation of social media algorithms and how they curate what you see based on how you use them. The second point essentially describes the process by which AI is trained, being able to process far more data than a human could. Lastly, Oh cites Nutella Unica an algorithm used to generate simple patterns for Nutella labels. With these factors in mind, Oh introduces the idea that the role of designers will transform from one of creation to one of curation, "When the production side of the design will be more or less automated by AI, it will be our goal to set parameters and goals for algorithms to determine the behavior of systems" (Oh, 2019). To conclude, Oh introduces three ideas designers should consider for adapting to a world where AI is fully integrated into graphic design. First, designers should make sure they understand the AI tools and their capabilities. Second, designers should make an effort to weave ethics into their approach, citing Microsoft and Google's responsible AI standards as examples. Finally, Oh suggests incorporating adaptability as a design principle, the aim of this would be to keep in mind the experience of a design or product in a setting or based on user decision making (Oh, 2019).

Katie Hicks' July 2022 article for Marketing Brew, questions whether the future of graphic design will be fully automated. One of the people Hicks spoke with was Kyle Li, assistant professor of communication design and technology at Parsons School of Design. Li noted that AI could potentially make "communication between designers and clients more fluent

because I don't have to describe to you [what I'm thinking], I can pull something up really quickly and have you see what's in my head" (Hicks, 2022). While the ideas that technological advancement is unavoidable and designers must adapt are prevalent, not all designers accept these stances.

Designers expressing concerns about AI

Graphic designers have been just as vocal about their feelings and concerns on the subject as creatives in other creative fields. Mat Venn wrote an article for Medium titled "Design is for humans" which discussed the toxicity of AI on the design industry at large. Discussing the discourse happening on Twitter throughout 2022 Venn said, "Many tweets evangelized the technology. I had some interesting debates with some designers who figured, as with most technologies, you either get on board or you get left at the station. Adapt or die!" (Venn, 2022). Venn breaks down his list of grievances with AI in design as follows: too many cooks the idea that if AI is fed on the work of too many designers it will lose the specificity and personality to provide a quality outcome. Empathy and bias, computers are not able to express empathy, which is a core aspect of the design field and where there is a lack of empathy there is no way to be sensitive to the biases that also arise in AI technology. To make his point on empathy, Venn looks back a few years to 2016 when Microsoft created a Twitter chatbot called Tay. Tay quickly pivoted from producing innocent and kind responses to spewing hate speech (Venn, 2022). The chatbot is a strong example of how easy it is to fuel an AI with the worst of humanity's qualities. Even if the issues of bias raised by Oh and Venn are seemingly resolved in more recent official iterations of AI programs, there are other issues that arise, such as images of minorities being controlled by the majority with no input or involvement from said minorities. Ultimately, the

point is that the output of AI is dictated by what it is trained with, and the results can be counterproductive to the accessible and welcoming goals of design.

AI-Based Graphic Design Tools

While it is clear AI-based image generators are a problem for graphic designers, the effort to create tools replacing graphic designers is not restricted to them. There are a number of other sorts of tools of varying ages that exist to more specifically take the place of a human designer. Some of these tools and services perform genuinely harmless and helpful tasks such as upscaling photos and digital art, removing the background from photos quickly and easily, or even generating color palettes. Services such as Fronty and Uizard promise to convert images and screenshots directly into HTML/CSS and editable design respectively. The home pages of both sites feature claims such as "No need to be a designer" and generally talk about making the design process extremely easy by removing the involvement of people who work in the spaces of design and code. Another tool, Designs.ai covers an even broader scope than the previous examples. This service offers copywriting, logo design, video, social media, and even voice-over. These three examples are far from the only tools of their kind. Stable Diffusion and AI image generators combined with these technologies, much like DALL-E has been combined with CALA, could result in a difficult situation for all graphic designers. Similarly, AI generators in the vain of DALL-E are also being used to experiment with fonts and typography. A series of tweets by Dr. Jim Fan on March 6th, 2023 explores the technology that can manipulate letter forms to output a new form that reads as the original letter but takes on the semantic meaning desired by the user. For example, the C in the name of a pet shop can be made to resemble a cat while still reading as a C. Dr. Fan posted links to open source access to this technology, Prismer, in another tweet the following day (Fan, 2023). A seemingly endless amount of AI technology is

being built to encroach on creative positions and tasks in different ways, and that is not expected to change anytime soon.

Risk to Artists as a Whole

In October 2022, the Graphic Artists Guild (GAG) released its official statement regarding AI image generators. This statement uses four primary talking points addressing transgressions against creatives before finally discussing potential paths for a positive outcome. The following section will cover their reasoning for each of these sections, in addition to articles and discussions released contemporaneously and in the months following that support their points (Blake, 2022).

Unauthorized Use of Creators' Imagery

This first point made in the GAG statement discusses the way in which AI programs allow users to make use of the work and styles of existing artists as the basis for their image generations. Context needs to be developed for the impacts AI is already having in other industries and fields and how these impacts relate and intertwine with the issues being faced by creatives. If this mimicry was limited to the collections of work that are classified as public domain there would be much more justifiable grounds for such generations to continue. However, this is unfortunately not the case. The works of living and actively working artists in a myriad of discussed fields are also being fed into AI and then presented as the work of the users.

As stated, traditional and digital artists have been a focal point of these discussions and as such serve as the more concrete examples of every issue AI poses. Polish fantasy artist Greg Rutkowski is one of many living artists who has been impacted by the rise of AI image generation technology. Rutkowski discussed his work being used by AI to generate nearly 93,000 images as of October 2022 in a Business Insider article by Beatrice Nolan. It was noted

again during his appearance on the 2023 AI/ML Media Advocacy Summit panel "Intro to the Issues" that Rutkowski's name had appeared 400,000 times for use in AI generations in December 2023 (Ruthkowski, et la., 2022). In neither instance is it stated how these numbers were found but there are known means such as Have I Been Trained? which allow users to search for artists by name and find the images that have been used as a part of generative AI datasets.

Graphic Designer Brandon Moore discussed the issue of AI art in his December 2022 entry on Medium titled "The Case Against AI-Generated Images". His first example is a defunct Kickstarter by Unstable Diffusion, an online community of users that takes the open-source Stable Diffusion tool and generates NSFW content with it. The goal of this Kickstarter was to gather funding to collect millions of images, specifically citing Artstation, Deviantart, and Behance as examples of sites they would be scraping from. Moore continues, presenting evidence of artists' work being used so blatantly that their signatures appear in the generated images (Moore, 2022). The use of artists' preexisting work in this way and at this scale extends far beyond the work of Rutkowski. Any artist with an online presence could be and likely is already scraped to train AI.

Confusion on Copyrights

Unsolicited use of creative works on this scale was left in a vague position in regard to the generators themselves and as an unprecedented legal situation it is still up in the air. For example, in September 2022 a comic book titled "Zarya of the Dawn" featuring artwork generated by Midjourney was registered to the US Copyright Office (USCO) by "prompt engineer" Kris Kashtanova. Ben Wodecki, an assistant editor for AI Business, covers the initial situation surrounding this comic and its copyright where he briefly discusses a history of

confusion around intellectual property in regard to copyright and patents (Wodecki, 2022). The Guild's statement on the confusion surrounding copyright law and AI alludes to the case with this comic as it had recently been recognized by the USCO. The statement continues by pointing out that because AI generates images similar to original work, there are unresolved questions on the matter of fair use (Blake, 2022). There was discussion at the time surrounding the face that the titular character of Kashatanova's comic looks remarkably like the actress Zendaya which raises issue on likeness in addition to the other rights issues involved. The book would eventually lose its copyright protection in February 2023. Blake Brittain reported on "Zarya of the Dawn" losing its copyright in his February article. The USCO wrote a letter discussing the reasoning for the change in their decision, part of the change was because the use of Midjourney was not disclosed in the application Kashtanova submitted. The stance of the USCO on AI art as of this writing is that images such as those in "Zarya of the Dawn" "are not the product of human authorship" and cannot be copyrighted. The reissuing of the comic did, however, allow the copyrighting for the story Kashtanova wrote and the way that the images were laid out (Brittain, 2022).

As stated in the discussion surrounding photography and AI there, is a genuine risk to commercial photography. This sentiment was first shared by Getty in September 2022 when they banned AI-generated images from their site. A Creative Bloq article by Joseph Foley discusses the reasoning behind this ban stating: "Getty's decision might be a blow to some of the many people creating imagery using AI image generators, but it makes sense. After all, customers' confidence in a stock photography site depends on them knowing they'll have no legal issues with the images they license." (Foley, 2022). Around this same time, users of AI image generators started to notice that when they include "stock photo" as part of their prompt

descriptions they can find images that match photos featured on Getty. As time went on, that issue grew more significant and generations started appearing with garbled versions of Getty's watermark. The watermark is featured on stock images that have not been purchased for a license, a clear demonstration of scraping in action. This observation led to Getty suing Stability AI, accusing them of copying millions of Getty's photos without a license. Blake Brittain's February 2023 article discusses how Getty has properly licensed millions of their assets to other companies working on AI-related goals but Stability in particular is infringing on its copyrights (Brittain, 2023).

Ethical Concerns in the Imitation of Artists' Works

The ethics of AI are becoming an increasingly active part of the overall discussion in the field and the GAG addressed the concerns around text prompts used by AI imagery generators being used to mimic the styles distinctive to individual artists (Blake, 2022). As seen with Rutkowski and others, this enables generated images to look as though they were created by the artist, company, or other creative referenced in the prompt. When the technology sector investing in AI image generation has yet to address these ethical concerns, artists who take years refining their craft are cast aside as fodder. An example of such mistreatment can be seen in the lawsuit artists Sarah Andersen, Kelly McKernan, and Karla Ortiz have brought against Stability AI, Midjourney and DeviantArt. The case against the former two corporations make sense considering the role these companies play in stealing the work of artists to train their datasets. DeviantArt, however, as one of the world's largest online art communities may not initially makes sense as a part of this case but they recently launched their own generative AI, DreamUp. The argument being raised against DeviantArt is that their Stable Diffusion powered image generator violates DeviantArt's own terms of service and privacy policy (Vincent, 2023).

During the "Intro to the Issues" panel of the Concept Art Association's AI/ML summit, Jon Lam was asked about the ways that generative AI can lead to further marginalization, Lam replied with the following, "I just feel like a lot of minorities in general are fighting for our place to be seen in the industry and now with generative technology like this we're starting to see, you know, photography, fashion shoots, and portraiture of minorities that aren't even there, that aren't even real… and this is dangerous because now we are viewing minorities through a non-minority lens" (Lam, et la., 2023). It is an extension of the previous discussion regarding the impact of AI imagery on photography, fashion, and modeling, but also furthers discussion on the marginalization that can occur with artists. A reknowned illustrator and cartoonist named Kim Jung Gi unfortunately passed away in October 2022, three days later a Twitter user going by the handle 5you released a Stable Diffusion based tool that was trained on the artist's work. Leo Kim in his December 2022 article discusses this tool in the context historical orientalism, the idea of taking Asian culture and corrupting it through the lens of colonialist attitudes. Kim contends that the act of taking Gi's work and using in this way is a part of that unfortunate tradition (Kim, 2022). Stealing the work of a recently deceased minority artist and furthering the trend of unethical behavior in the realm of generative AI, an unfortunately prevalent issue.

At the Concept Art Association AI/ML Summit, a panel was held specifically on the subject of AI ethics. The panel was moderated by Dean Van De Walle and featured Timnit Gebru, Abhishek Gupta, and Dr. Ben Zhao. Gebru is a former co-lead of an AI ethics team at Google and the founder and executive director of the Distributed Artificial Intelligence Research Institute (DAIR). Gebru, alongside co-lead Margaret Mitchell (under a pseudonym), and professor Emily M Bender and PhD student Angelina McMillan-Major of the University of Washington wrote a paper about the dangers of oversized language models. The paper, "One the

Dangers of Stochastic Parrots: Can Language Models Be Too Big?" discusses the matters of static data and the associated perpetuation of biases. An example used is the representation of social movements in the media and their resultant online presence, "Media coverage can fail to cover protest events and social movements and can distort events that challenge state power. This is exemplified by media outlets that tend to ignore peaceful protest activity and instead focus on dramatic or violent events that make for good television but nearly always result in critical coverage" (Gebru et la., 2022). As a result, the Large Language Models (LLMs) that are built with this sort of data will also misrepresent these movements.

When asked during the AI/ML panel about some of the issues and biases that are not so readily apparent, Gebru answered by explaining how, when large datasets like those associated with DALL-E are created, they are made under the presumption that because the internet is so big it represents everyone (Gebru et la., 2023). In reality it is picking up dominant perspectives alongside harmful views and harassment, at the same time it completely ignores people who do not have an online presence. Her paper goes further in depth about a need for curation, documentation and accountability when developing these datasets, as it cannot be expected for AI systems to reflect only the positives of humanity while we also feed it the negativity and ugliness (Gebru et al., 2022).

On the subject of ethics in the field of computer science, Dr. Zhao of the University of Chicago, made the following statement, "I think it is a failure of computer science as a field that we do not teach ethics at many places, in most places in fact. And I think that ethics needs to be a core part of what we teach students from the undergraduate level. As far as this is computer science and you must have a sense of ethical consideration when you are designing research or tools" (Zhao et al., 2023). If Dr. Zhao's observation on the scale at which computer science is

lacking in education on ethics one could come to understand how the issues in the field of generative AI arose.

Work Displacement

The GAG finds it inarguable that AI image generation will be in competition with visual artists and shrink the market for their work. They recognize that visual artists have the ability to harness the prompting and curation skills necessary to use generative AI, but the problem comes from the fact that these skills can be learned by individuals with no interest in creating without the use of AI (Blake, 2022). It will have a discouraging impact on new, young, and inexperienced creatives and will result in a decline in skilled artists. In March 2023, Senior Contributor at Forbes, Jack Kelly discussed the Goldman Sachs prediction that AI will result in the loss or degradation of three hundred million jobs, in the creative industries and beyond (Kelly, 2023). While Goldman Sachs contends that automation leads to innovation and new jobs, a research paper by Daron Acemoglu and Pascual Restrepo for the National Bureau of Economic Research (NBER) reports that over the past forty years automation technologies have been the primary drivers of income inequality in the United States (Acemoglu and Restrepo, 2021). If generative AI is allowed to continue without restriction this trend will certainly continue as automation takes root in not just one industry but an entire field of work. Kelly had this to say about AI and the companies supporting it: "When management consultants and companies that deploy AI and robotics say we don't need to worry, we need to be concerned. Companies— whether they are McDonald's, introducing self-serve kiosks and firing hourly workers to cut costs or top-tier investment banks that rely on software instead of traders to make million-dollar bets on the stock market—will continue to implement technology and downsize people to enhance profits" (Kelly, 2023). It has been seen in other industries as well, that corporations and

the people that run them will put financial gain before the greater good when left to their own devices.

Positive Paths Forward

The GAG conclude their statement on AI by making suggestions for how to best take into account the ever-present issues of copyright, fair use, and the rights of those who would be harmed by the unregulated use of AI. Their suggestions for this include permitting visual artists to block the use of their work in training AI, preparing ethical standards to recognize the illegitimacy of bypassing the hiring of an artist by using an AI to copy their style, and lastly, providing strong tools for artists to police and remove all of their works from existing databases used to train AI (Blake, 2022). These acts would diffuse some of the egregious controversy seen in the relationship between artists and generative AI.

Artists Pushing Back

Artists and creatives are being vocal about their opposition regarding generative AI both online and in a legal framework. Online movements such Create Don't Scrape is a Twitter hashtag supported by artist Jon Lam, and it is one of many such tags promoting human creatives (Lam, 2022). Protecting Artists from AI Technologies is a GoFundMe established by the CCA to fund a number of means for artists to resist being replaced, including lobbyists and legal action. There are also tools being developed so that artists can find themselves in AI datasets such as HaveIBeenTrained and AI detecting services such as Hive Moderation. In response to DeviantArt breaking the trust of artists, a new website call Cara.app was developed. Cara is a social media and portfolio platform intended to provide a new place for artists that is committed to resisting AI art. The most notable tool provided for artists is Glaze, released on March 15th, 2023, from the University of Chicago. Glaze functions by cloaking artists' work in a digital filter

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of noise, that has little to no visual impact but disrupts the ability for AI to effectively replicate the work. Katie Ortiz announced on Twitter on the same day Glaze was released that her painting, "Musa Victoriosa", is the first painting released to the world that utilized Glaze (Ortiz, 2023).

Responsible AI and the Risk of Rampant AI

"Responsible AI" is the term for a development model that would help mitigate the biases that arise in the use of AI and machine learning. Research and development architect at Persistent Systems, Dattaraj Rao, wrote an article for Venture Beat in September 2022 on the subject of responsible AI addressing bias. Rao worked with DALL-E to uncover potential biases within image generators. The prompt "doctor walks into a bar" resulted in images featuring all male doctors, inside a bar. The second prompt, "Nurse walks into a bar" resulted in exclusively female and more cartoon-like imagery, transforming the bar into something more resembling a child's playroom. These gendered results are something OpenAI has tried to mitigate by adding content to datasets that undercut those biases, for example, male nurses instead of exclusively female nurses. Rao's suggestions for responsible AI include the following factors: checking training data for bias, evaluating algorithms for levels of interpretability, building explanations for ML models, and reviewing deployment strategy for models, and monitoring data and concept drift (Rao, 2022).

Emmanual Goffi, AI ethicist and founder of the Global AI Ethics Institute raises a similar point to Dr. Zhao by stating: "People working in the AI field are mostly engineers. They're not really open to humanities." (qtd. in Heikkilä, 2022). This sentiment extends to large corporations who, to paraphrase Jack Kelly, put profits above all else. In late 2020 and early 2021, Google fired Timnit Gebru, mentioned previously as a guest at the CCA AI/ML Summit, and Margaret

Mitchell respectively. While this was before DALL-E and the other image generators were in the public eye, the issue extends to the broader scope of AI technologies. Zoe Schiffer discussed the controversy in her February 2021 article for the Verge. Gebru, and Mitchell started the ethical AI team at Google together, and at the end of 2020 they were working on a paper addressing the dangers of large language models (LLMs), the building blocks of AI technology, and were let go after pushing back on requests to retract the article. As a result, there was a restructuring of the AI ethics team (Schiffer, 2021). In February 2023, Microsoft also removed part of their AI ethics team. An article by Zoe Schiffer and Casey Newton cites competition with OpenAI and other AI developers as Microsoft's ultimate reason for forsaking a major part of their ethics team. As two major players in the realm of technological innovation Google and Microsoft, diminishing concern for responsible AI and AI ethics does not bode well for a burgeoning and controversial technology (Newton and Schiffer, 2023).

This sort of forsaking of responsibility for AI can already be seen with Tesla and their self-driving vehicles. On Thanksgiving Day 2022, a Tesla vehicle abruptly hit its brake under the San Francisco Bay Bridge resulting in an eight-vehicle pileup that injured nine people. Ken Klippenstein covered the story in January 2023 discussing over one hundred reports of abrupt braking in Tesla vehicles. On the subject of Tesla incidents Dr. Zhao had this to say in the AI Ethics panel, "If something is not reliable it should never be allowed to go into the public, into the market, and at that point is the fault of the manufacturer or whoever has invented that technology, or whoever is deploying it, I should say, for rushing it to market, taking these substantial risks, and that's not the fault of the user. At some point if there is user input that affects the fault patterns then perhaps we can blame the user…in the case of AI there may be no dollar amount that can make these harms go away" (Zhao et la., 2023). If corporations and

developers building AI image generators and all other forms of AI are unwilling to regulate

themselves and risk creating a tangled web of potential issues and harm to real people, then the

task is on politicians and legislation to regulate the use of AI within a reasonable time frame.

The issues of bias and art theft have already been explored in this thesis, and should not

be underestimated but as seen with the Tesla incidents, there are many other AI-related or

adjacent issues that deserve as much consideration and attention as the issues presented

throughout this thesis. While the work of artists is unarguably being scraped to train AI image

generators, the same can be said for the material collected to train ChatGPT and other text-based

generators. Microsoft implemented a generative text tool into its Bing search engine, for the

purpose of gathering the desired information from various sites on the web rather than have users

search through individual sites. In the FAQ section of their website that breaks down how this

new Bing works, they explain how the new Bing generates responses, saying: "Bing searches for

relevant content across the web and then summarizes what if finds to generate a helpful response.

It also cites its sources, so you're able to see links to the web content it references." ChatGPT on

the other hand, as of this writing, does not cite sources in the same way which is a significant

issue considering that it arguably has made a larger impact than image-generating AI has.

Articles and discussion surrounding ChatGPT were nearly unavoidable in 2022. Students were

using the platform to write essays, and Samantha Murphy Kelly's January 2023 article for CNN

would discuss ChatGPT passing exams from law schools (S. Kelly, 2023). Melissa Heikkilä

wrote on the subject for MIT Technology Review in her December 2022 article, discussing how

the presence of AI content has already begun to snowball to the point Google is having trouble

generating output that is not polluted with the output of other AI (Heikkilä, 2022).

Recently, chat service Discord announced that it would be introducing features powered by OpenAI technology. This news came with changes to their privacy policy, including the removal of statements regarding storing content from video and voice calls. Allisa James reported on the story for Tech Radar in March 2023 and discussed the new terms of service policy. Deleting those statements was a massive violation of user privacy, and exposed their user base to having their data scraped by the new AI features they intend to implement (James 2023). Similarly, while Adobe already has algorithms that are part of the base functionality of its applications, it recently introduced Adobe Sensei, which pushes those algorithmic functions further through the use of AI and ML. However, Adobe also has a function called consent analysis which aims to study user content to provide improvements and developments to Adobe's products. It does this with data stored on Adobe servers. "When we analyze your content for product improvement and development purposes, we first aggregate your content with other content and then use the aggregated content to train algorithms and thus improve our products and services."

Fortunately, both Adobe and Discord users can opt out of these functions in their settings. An update to James' article on Discord states that the removed statements had been restored to the privacy policy and a Discord spokesperson said that "We respect the intellectual property of others, and expect everyone who uses Discord to do the same. We have a thorough Copyright and Intellectual Property Policy and take these concerns seriously" (James, 2023). It is beyond the scope of this thesis to further discuss how Discord and Adobe's actions and the generalized scraping of data to fuel generative AI relate to ongoing data privacy concerns, but it is worth noting as those issues are intimately intertwined.

Issues surrounding ChatGPT are not all as abstract as the issues of plagiarism, data, and privacy. The moderation that goes into keeping the datasets they use free of hate, violence, and explicit imagery still requires a human hand. In Billy Perrigo's January 2023 Time article, he discusses how OpenAI used underpaid Kenyan workers to clean up ChatGPT. OpenAI worked with Sama, an American firm that employs workers in Kenya, Uganda, and India to clean data for Silicon Valley companies. Workers took home wages between $1.32 and $2 per hour and were subjected to descriptions of abuse, murder, self-harm, and more. In recent history, tech companies have been forced by courts to pay for therapy for people who have to do this sort of work (Perrigo, 2023). Casey Newton wrote for The Verge in May 2020 describing how Facebook was forced to pay a $52 million settlement paid out to moderators who developed post-traumatic stress disorder (Newton, 2020). There is harm being done to people on both sides of the generative AI process and unfortunately, the issues do not end there.

If they continue without proper regulation a combination of the many forms of generative-AI discussed throughout this thesis could result in a truly detrimental outcome that overrides any perceived benefits. As mentioned prior, creative and model See Lo has had her modeling videos stolen and her face swapped with an image of a Caucasian woman (Lo, 2023). Deepfakes and FaceSwap technology, in conjunction with manipulations of open-source generative-AI such as what Unstability AI is developing, can create images of real people in situations to which they did not consent. The issue of deepfakes became prominent on the Amazon-owned platform Twitch in 2023. Twitch content creators discovered their likenesses used to create explicit images against their will. In response, Twitch announced changes to their policies that will punish those making such content on their platform but explicit content is not the only means deepfakes create confusion and problems. In March 2023 images of Donald

Trump getting arrested went viral online. Matt Novak reported on the trend for Forbes, finding that one image with six hundred thousand views was an AI-generated image by Twitter user "The Infinite Dude." The image had no indication that it was fake but observing the image closely shows the telltale issue of messy hands (Novak, 2023). Eliot Higgins, founder of Bellingcat spoke to the Associated Press about images he generated and posted online saying that "I had assumed that people would realize Donald Trump has two legs, not three, but that appears not to have stopped some people from passing them off as genuine, which highlights the lack of critical skills in our educational system." (qtd. In Novak, 2023). Regardless of their authenticity, these images and images like them circulated on the internet and serve as strong evidence that generative AI can be used for dangerous misinformation.

Questioning AI

It is important to remember that AI as it currently exists is a repurposing of pre-existing content no matter what images or text are generated. It is not a feeling, thinking thing. Technology columnist, Kevin Roose wrote about his experience with Bing's AI in his February 2023 article. Roose briefly describes the search-oriented function mentioned above, but goes into depth about an alternate "persona" referred to as Sydney (A Conversation With Bing's Chatbot Left Me Deeply Unsettled, 2023). The transcript of the exchange between Roose and Bing's AI shows that Roose immediately begins by presuming the AI has an identity "hi, who am i talking to?" Roose asked (Bing's A.I. Chat: 'I Want to Be Alive., 2023). The reporter continued to address the AI as such and the AI matched his expectations. Again, ultimately, ChatGPT and other text-based AI aren't talking to you, they aren't passing any tests, in the same way, DALL-E 2 and other image-generators aren't "creating" anything. They are regurgitating information

plugged into their datasets and returning them to users in ways determined by the logic of

programming and code. There is no intelligence, there is nothing to personify.

Emily M Bender from the University of Washington is viewed by proponents of AI as a

"skeptic". Bender wrote an article in April 2022 which is a direct response to Steven Johnson of

the New York Times and his article "AI Is Mastering Language. Should We Trust What It

Says?" That article discusses the prototype for ChatGPT, GPT-3, and portrays the technology as

a brilliant entity, personifying it similarly to Kevin Roose while also offering praise for OpenAI.

Bender critiques Johnson's article for asserting AI is "mastering" or "saying" anything and

questions why people are so quick to be impressed by the output of AI. Bender refers to AI in

quotes throughout her writing, instead preferring to refer to them almost exclusively as LLMs,

the previously mentioned building blocks of "AI", and questions why journalists looking into

this technology, and the people responsible for creating it, are looking for intelligence at all

(Bender, 2022). Bender says "Whether or not "AI" actually works isn't just an academic debate.

It could have been if the people working on "AI" were simply doing esoteric projects in research

labs without trying to monetize them. But that is not the world we live in: it seems like every day

there is a new news story about someone selling an "AI" system to do something inappropriate,

like fill in grades for students who couldn't take tests, or diagnose mental health disorders,

interview job candidates, or apprehend migrants" (Bender, 2022). The financial goals associated

with AI development have been thoroughly discussed throughout this thesis, as companies push

people of all kinds to the side in favor of the potential financial gain from AI technologies.

Discussing a previous talk regarding language technology, Bender offers a list reminding the

audience not to get too impressed by this technology. "Just because that text seems coherent

doesn't mean the model behind it understood anything or is trustworthy. Just because that answer

was correct doesn't mean the next one will be. When a computer seems to "speak our language", we're actually the ones doing all of the work" (Bender, 2022). Bender's work on the subject serves as a reminder to keep AI, ML, and LLM at arms length and not to be persuaded by the sensationalism and marketing behind this technology.

The situation continues to evolve

AI/ML and the surrounding debate is far from settled. Throughout the course of researching for this thesis, the circumstances around the field have shifted constantly, whether it be the release of Adobe Firefly, Adobe's proper competitor to DALL-E and AI image generators, the open letter from the tech world calling for a pause of AI/ML development, or the launch of Glaze and other tools to help protect artists. It is important to keep in mind that AI is not intelligent in the way humans are. It is also apparent that companies building AI products are replacing workers, intentionally or not, and the rights of those workers should be protected regardless of field or industry.

The intention of this thesis is not to fear-monger or exaggerate the threat that AI poses, but to emphasize that the threats are real and that they can be resolved. While AI imagery can be beautiful, it is based on theft. A series of tweets by animator and Youtube personality Arin Hanson takes a pragmatic approach to the future of AI, "Look, you can just say "it's important to me that a human person made this thing." All this hogwash about how AI art is ugly... you care about people and that people make art. It's important to you. You've just never had to face that because it's always been a given until now" (Hanson, 2023). The logical conclusion regarding AI technology is that one way or another it is not going to suddenly go away. The crucial factor is the way that we choose to live with it. If executed ethically, AI can be a tool for humanity to use effectively in ways other than the regurgitation of content. To conclude the "Intro to the Issues"

panel, Ortiz asked the panel what they feel would be a good outcome for artists and creatives

regarding AI tools (Ortiz et la, 2023). The panel collectively agreed that the destruction of

existing datasets and starting with a clean slate that does not include the work of living artists but

instead, respects the rights of artists. In this way artists and AI prompters could potentially create

harmoniously rather that fighting, as they have been.

Chapter 3: Methods

The objective of this case study is to serve as a microcosm of the wider discussion concerning the rise of AI art generating programs such as DALL-E 2, Midjourney, and Stable Diffusion and their impact specifically on the graphic design industry. To that end, an experienced graphic designer and a non-designer both worked with DALL-E 2 and attempted to create a logo and three associated items that a human designer would potentially be tasked to create. Both worked from the same brief to create a logo, shirt, packaging and magazine advertisement for a fictitious winery, and documented their progress and process. This open-ended prompt allowed both participants the freedom to explore their creativity with aspects such as name, color scheme, and tone for the project. The employment of the experienced designer allows the study to simulate the concept of designers collaborating with this AI technology. The use of the non-designer on the other hand, served to represent the elimination of trained human designers from the equation by exclusively using this technology, as it existed as of March 2022, for the entire process. At the same time, I worked following the same criteria, strictly using only the design tools I would typically implement in my normal methodology as a trained graphic designer such as sketches, Adobe Illustrator and Photoshop. As neither participant was familiar with DALL-E, their tasks were broken into easy-to-follow phases.

Phase 1: Logo

Phase 1 involved the actual construction of a logo. Both the designer and non-designer were allowed to utilize the features of DALL-E 2 as they saw fit to create a logo that fulfills the brief, a winery. This included referencing specific designers, art movements, or any other inspiration at their disposal. The company name must be made legible as DALL-E 2 has a noted tendency toward misspelling. Ultimately, their logo must be appropriate to the prompt,

distinctive, and functional. Beyond this step, the experienced designer was encouraged to use their standard design process in conjunction with DALL-E to refine the logo and create the desired deliverables. The non-designer, of course, would not have the training to do this and therefore is restricted to using the AI.

Phase 2: Deliverables

Once the participants created a logo that they were satisfied with they moved on to phase 2, the design of three major deliverables. The intent of requiring these deliverables was to gradually test the capabilities of DALL-E with projects of escalating difficulty. The first deliverable was a simple start, a mockup of a t-shirt featuring the logo that they created. The designer was free to take their generated logo into Photoshop or Illustrator and create their mockup, but the non-designer was instructed to utilize DALL-E 2 functions such as Inpainting and Outpainting to make all the visuals work. A mockup of a brand's logo on a t-shirt or a mug is a simple execution for a designer. Whether that involves licensing a mockup from the internet or taking the time to construct the mockup with their own photography, it is not deemed challenging. It was not clear how difficult it may be with AI, which made for a good starting point for Phase 2.

The second step of Phase 2 involved utilizing their logo to create a product design. Much like the starting prompt of a winery, the nature of the packaging was left to the participants' whims, but a bottle and label were suggested. This would mean thinking a bit more about how they want to represent their desired brand identity. A wine label design could easily be executed by simply applying the logo to the bottle and calling it finished, but typically, a wine bottle has a bit more visually engaging elements than simply the logo. Lastly, the most challenging task would be to generate a magazine ad that uses both the logo and the product. Much like the other

phases of the project, a straightforward magazine ad is usually not a complicated task, but in the case of the non-designer it could be. In my experience with AI, image generators' attempts to create generations of design layouts led to some things with visual interest, but universally, they would generate gibberish in place of text.

Phase 3: Submission

Finally, after the logo and all 3 deliverables are created, the participants saved all their work, collected all their documentation, and shared their findings. Their documentation was to consist of simple journal style entries whenever they commenced to learn about the AI, use the AI, or otherwise work on the assignment.

Chapter 4: Results

Introduction to Results

The results of this case study vary in quality both aesthetically and functionally. With consideration to the concept of featuring designers and a non-designer who all have varying knowledge and perspectives on design this variation can be expected. The difference maker for the study was a matter of how much an AI tool such as DALL-E 2 could alter the design experience for different individuals.

Section A – Documentation of the designer without AI assistance

Section A is the work that I created myself as a graphic designer without the influence of AI image generators in any way. This means that I had to depend on the traditional design process to fulfill the requirements of the assignment. My knowledge of wine, wineries and vineyards is surface level at best, so I relied on my impression of wine as a luxurious and high class item as the crux of my brainstorming process. I utilized a mind map so that I could extend beyond that surface level connection between wine and luxury. That map led me to the root word of luxury, and then to "lux", the latin word for light. I felt this name had certain connotations that made it an effective brand name. Continuing to develop the concept, I brainstormed eras associated with luxury, and made a connection to the glorified decadence of the 1920's high society in the United States. Recalling "The Great Gatsby" film from 2013, I connected the "Roaring 20s" directly to a glistening gold geometric art deco aesthetic. With these ideas in mind, I began to sketch and to conclude the ideation process. I then brought those sketches into Adobe Illustrator to refined my logo (see Figure 1).

Figure 1. Lux Wine Logo (Designer working without AI Assistance)

Once satisfied, I moved on to phase two of the assignment, first taking a black and white variant of my logo and applying it to a stock photo of a man wearing a t-shirt (see Figure 2). To further distance my work from being automated, I wanted to create the mockups for my deliverables myself and not involve any pre-made content in anyway. Time, however, forced me to utilize stock imagery. The second deliverable of phase two was packaging. For this to work I needed to develop a label for my Lux brand. Initially I considered using deep red to represent a red wine but agreed with my thesis chair who felt it was too generic. I also pushed the art deco aesthetic further by enhancing the use of geometric structures and using a metallic gold gradient effect instead of a flat color. From there, similar to the t-shirt, it was a rather simple process to apply the label to an existing photo of a wine bottle. There was perhaps more difficulty as a

result of the curved shape of the bottle, but otherwise it was easy. The final product is a sleek and

elegant bottle (see Figure 3).

Figure 2. Lux Wine T-Shirt Mockup (Designer working without AI Assistance)

Figure 3. Lux Wine Bottle and Label Mockup (Designer working without AI Assistance)

Lastly, and most challenging, was the task to develop a magazine ad for the Lux brand. The concept for the ad took more historical reference, still focused in the 1920's and 30's. I wanted the ad to reference a typical advertising design of the era that inspired the brand. My original attempt utilized the red Lux logo and the label more strictly adhered to the visual style of the era I was influenced by; but after the revision to the label and bottle from red to a glistening gold, I decided that the ad should change as well. The final version of the ad (see Figure 4) combines the aesthetic of advertisements that I wanted with the art deco geometric borders that I also incorporated into the label. I feel that this final version of the ad reflects the look of advertising of the time with an updated, elegant feel.
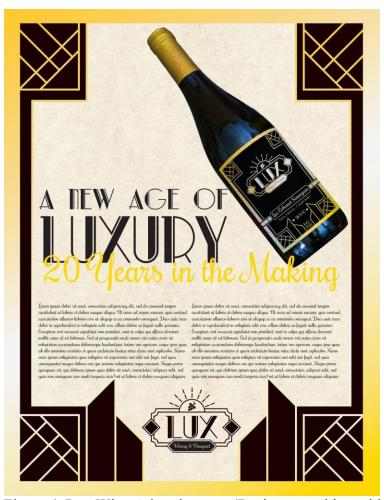

Figure 4. Lux Wine Advertisement (Designer working without AI Assistance)

Section B – Designer with AI Assistance

The graphic designer tasked to work alongside DALL-E did not have such an easy time. A significant amount of his process was hampered by issues getting DALL-E to function at all. He was met with the error message, "The server is overloaded right now, please try again later," on his first attempt, and faced continuing issues going forward. While trying to develop his logo, the designer felt underwhelmed by the visuals that DALL-E was outputting. His notes include a list of thirteen prompts of varying complexity and his finalized logo (see Figure 5) was composed by referencing some of the DALL-E images.

Figure 5. Mountain Creek Logo (Designer working without AI Assistance)

Moving on to phase 2, the designer utilized another online source to familiarize himself with the process of developing a t-shirt using AI. When he attempted to begin the actual process,

he was met with a new error. In the meantime, he opted to continue learning how to use the program to develop the remaining components of the assignment. Unfortunately, when he returned to DALL-E to generate the t-shirt he was met with further errors. Eventually, he was able to gain access long enough to attempt to bring his logo into DALL-E and then generate a t-shirt around it, but that process failed. Switching gears, he decided to develop visual elements that would potentially be used for the advertisement, creating six prompts relating to wine, the mountains and luxurious scenery.

Returning to the t-shirt deliverable, the designer was still met with issues with DALL-E several days into his attempts. Yet, he was still able to generate six more images regarding both the t-shirt and the packaging. The final involvement with DALL-E in the designer's process was the use of the "outpainting" feature. After several attempts he was able to create a satisfying image to use as part of the advertisement. All of the final products were created through the use of Photoshop to add elements such as text and color overlays. The final image for the t-shirt (see Figure 6) is not dissimilar from my own, the bottle and label (see Figure 7) functions, but the telltale visual artifacts of AI generated images are apparent, the mountains in the background feature nondescript textures that give it away. The final advertisement (see Figure 8) is similarly impacted by these vague details. The ad features the bottle in the foreground and a vineyard in the background which, at a glance, works perfectly fine but looking closely, the textures are again strange to observe. The designer concluded his documentation as follows: "Overall, I found DALL-E 2 to be very underwhelming, in terms of the image results that were generated based on my prompts."

Figure 6. Mountain Creek T-Shirt Mockup (Designer working without AI Assistance)

Figure 7. Mountain Creek Bottle and Label Mockup (Designer working without AI Assistance)

Figure 8. Mountain Creek Advertisement (Designer working without AI Assistance)

Section C – Non-Designer with AI Assistance

The non-designer, while experienced with ChatGPT, had not made use of DALL-E

before. After some initial trials with DALL-E and a *Youtube* tutorial, she chose to utilize

ChatGPT as a tool to assist in her brainstorming process. Her prompts to ChatGPT included

requests for five potential names for a winery and five cool names for a winery. One of the

names output was "Vineyard Vista" which was selected to serve as the basis for her brand. She

then returned to DALL-E with the prompt "create a logo for a winery called Vineyard Vista."

After several unsatisfactory rounds of generating images she decided to add the name of a

specific designer into her prompt, her selection was Paul Rand. Still unsatisfied, she removed

Rand's name and instead entered the prompt "create a simple, modern logo for a winery called

"Vineyard Vista"," which resulted in a logo she was happy with. The variation that she was

happiest with featured a typo, and after researching she concluded that it was not possible to edit

through DALL-E 2. To solve her problem, she took the variation that she wanted to use and

brought it into Canva. There, she attempted to match the typeface featured on the original

variation while getting rid of the typographic errors. The final product is the logo for her brand

(see Figure 9).

Figure 9. Vista Vineyards Logo (Designer working without AI Assistance)

For phase 2, she began with generations for a t-shirt. After several attempts she arrived at

a t-shirt she was happy with, only to find that when she tried to apply her logo to it she was

unable to align the two elements in the way she wanted. Her original image of a t-shirt was

featured a t-shirt on a white background positioned at an angle. To resolve this issue she had to

generate a t-shirt in an upright position to get something she was satisfied with (see Figure 10).

This process resulted in a waste of DALL-E credits, the virtual currency users are given limited free uses of in exchange for their image generations, and made her wonder how far AI and a non-designer can get. Moving on to the bottle, she initially tried to use a bottle image generated from the prompt, "real, light green wine bottle with a label, white background" which generally provided what she was looking for, but it proved too difficult to remove the text that was featured on the labels of the generated bottles. Instead, she went back to DALL-E and specified a blank label which allowed for a much smoother process for finishing her bottle (see Figure 11), but she remained unsatisfied with the final result.

Figure 10. Vista Vineyards T-Shirt Mockup (Designer working without AI Assistance)

Figure 11. Vista Vineyards Bottle and Label Mockup (Designer working without AI Assistance)

Lastly, for the advertisement, her initial prompts resulted in output that was far too visually busy for the intended aesthetic, The second set of prompts had issues with being either being too simple overall, or featuring text that was too difficult to work with or around. She decided to shift gears and instead generate images of an Italian countryside vineyard or a similar concept, she ended up utilizing a generation she previously disregarded along with her logo and bottle to create her ad (see Figure 12). The end result was still not something she was particularly happy with, but it was still the deliverable that she favored out of all her work. Her conclusion regarding DALL-E was that, "...at this point in time AI is not self-reliant enough to cause graphic designers any stress over taking their jobs." She felt that tools like Canva were much better at fulfilling tasks such as logo design than AI programs like DALL-E were in early 2023.

Figure 12. Vista Vineyards Advertisement (Designer working without AI Assistance)

Chapter 5: Discussion

Introduction to the Discussion

The work created by my participants and myself generally seems to show that AI as it existed between February and April 2023 was not sufficiently capable of adequately replacing the role of a graphic designer.

Study Limitations

There are a number of limitations onto this case study but overall it serves its function. First, generative AI has been a rapidly evolving technology. As discussed in the literature review, there have been developments occurring within weeks and days of this thesis being submitted that could not possibly be addressed despite the impact that they may ultimately have on the subject. Second, a chief limitation was recruitment. The means to gather a substantial enough number of designers and non-designers to execute the assignment and develop a true qualitative analysis of the capabilities of DALL-E 2 and generative AI.

Study Strengths

Despite those limitations, this case study does successfully serve as a focused examination of a period of time in the discussion surrounding generative AI. The work that I created was able to take active inspiration from a specific time period in a way that DALL-E seemed unable to achieve or, at the very least, did not lead its users to consider. These AI tools do, however, provide value as an alternate means of brainstorming. However, the study showed that showed that if DALL-E were in any way used to replace either graphic designers or the tools they most commonly use, it would lack flexibility to edit imagery as effectively as a human designer. This fact, however, does not mean that is not a concern for other realms of visual

creativity. The issues for photography, painting, modeling, etc., remain a present issue as these services recently released new and improved versions.

Concluding Remarks

Generative AI has created chaos among the creative industries and deserves consideration rather than flippant avoidance. Negligence on this subject will be harmful to creatives, as their work continues to be fed to AI databases that actively take job opportunities from them. Just because one field may be less harmed by this technology than others, does not mean that it is not a problem. Actions taken by the likes of the Concept Art Association, the University of Chicago, and countless individual artists are necessary for making sure the rights of creatives are upheld and that society does not carelessly relinquish creative output to non-human entities.

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Written by James Pyfer Contributor to SAGE Publications's Encyclopedia of New Media whose

      work in that encyclopedia formed the basis of his contributions to Britannica. James
      Pyfer Fact-checked by The Editors of Encyclopaedia Britannica Encyclopaedia
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Appendix A

Documentation of Matthew's process (Designer Collaborating with AI)

Wednesday, March 21, 2023

In preparation for using DALL•E 2, as I had no prior experience using it, I read through the following articles:

https://www.howtogeek.com/836690/5-tips-to-get-the-best-results-from-dall-e-2/
 https://help.openai.com/en/articles/6399305-how-dall-e-credits-work

Around 4:00 p.m., I attempted to generate my first results using DALL•E 2. Unfortunately, my searches resulted in errors from DALL•E 2, noted by the following response, "The server is overloaded right now, please try again later." This persisted over the course of an hour. I gave up and decided to try again the next day.

Logo - Thursday, March 22, 2023

I tried using DALL•E 2 again around 1pm. I kept getting the same error message from the day before, but this time I found that if I kept trying to generate images repeatedly, it eventually worked. Thus far, I've found the results to be very underwhelming, as the visuals/illustrations are very sloppily created. The illustrations and logos are nowhere near as refined and well-executed as the more photorealistic examples I've seen from DALL•E 2 demos.

I was able to successfully generate images using the following search prompts:

1. logo design of wine bottle, wine glass, and sunset in minimalist style

2. logo design of wine bottle and grapes

3. minimalist logo design using grapes

4. logo design of wine bottle and glass using negative space

5. Create an illustration of a wine glass with the liquid inside the glass splashing in the shape of mountains.

6. simple illustration of mountains, wine bottle, and vineyard

7. Create an illustration combining mountains and grapes into a single object.

8. Create a logo combining mountains and grapes into a single object.

9. Splashing liquid forming the shape of a mountain range.

10. 3d render of sloshing liquid in a glass forming the shape of a mountain range

11. 3d render of sloshing liquid in a wine glass forming the shape of a mountain range

12. Two color 3d render of sloshing liquid in a wine glass forming the shape of a mountain range

13. Two color, 2d render of sloshing liquid in a wine glass forming the shape of a mountain range

Monday, March 26, 2023

I began the process of creating a logo while referencing some of the DALL•E 2 renderings from my previous prompts. I primarily used the results from prompts 5, 10, 11, and 12.

T-shirt - Tuesday, March 27, 2023

I finalized the logo design process and was then ready to move on to the t-shirt generation. In preparation for that process, I read the following article:

https://www.makeuseof.com/dall-e-2-outpainting-how-to-use/#:~:text=Outpainting%20is%20an%20editing%20tool%20that%20lets%20you%20alter%20an,adding%20a%20new%20generation%20frame.

I then, at 3:30 p.m, attempted to use DALL•E 2 to generate a t-shirt design, but this time I was met with a "Something went wrong" error. DALL•E 2 is clearly overwhelmed with requests during the afternoon hours. I'll have to try again in the morning. In the meantime, I watched the following video on Youtube:

How To Use DALL-E 2 To Create Images For Advertising Campaigns (2023) Step by Step Tutorial

How to Upload, Edit & Generate Variations of Images in DALL•E 2 2

Wednesday, March 29, 2023

I am attempting to use DALL•E 2 at 9:30 a.m., but I am still plagued with server errors. I am attempting to upload my logo to then generate a t-shirt design, but I repeatedly get the following error, "The server is currently overloaded with other requests. Sorry about that! You can retry your request, or contact us through our help center at help.openai.com if the error persists."

Made attempts to use DALL•E 2 again at 12:30 p.m. and 3:00 p.m., but repeatedly received the same server error.

Search prompts

14. photo of an italian vineyard being overlooked by mountains on a sunny day

15. photo of a wine bottle and wine glass sitting on a small table in a darkly lit room. The wine glass should have mountains emerging from the liquid.

16. 3d render of mountains emerging from a wine glass

17. Photo of aerial view looking into a wine glass with mountains emerging from the wine

18. Advertisement design photo of people dressed nicely sitting at a table drinking wine with a window in the background showing mountains outside

19. Photo of people dressed nicely sitting at a table, in a dimly lit room, drinking wine with a small window in the background showing mountains outside

Thursday, March 30, 2023

It's an absolute nightmare trying to use DALL•E 2. Attempts to generate images return constant server overload errors. I've found in some of the past renderings that DALL•E 2 has a difficult time rendering faces.

Search prompts

20. Man wearing a solid, light colored t-shirt in portrait view, photo

21. Dark wine bottle sitting beside glass of red wine

22. Box packaging for bottle of wine with mountain image on the packaging

23. Box packaging for bottle of wine with mountain image on the packaging, photo

24. Wine bottle with mountains on the bottle label, photo

I also experimented with outpainting. I used a photo from search #14 as the base and extended it into a wider image. In my first attempt at outpainting, I did it incorrectly, as I uploaded my initial image and created a new blank frame beside my image. This resulted in the creation of an entirely new image in the blank frame, as opposed to extending my original image. This result can be viewed in the file outpainting_1.pdf. I then attempted the process again. However, this time I created a slight overlap between my original and the new blank frame. This resulted in the image being extended properly. This is the image that will be used for the advertisement.

Once I had some images generating by DALL•E 2 for the t-shirt, packaging, and advertisement, I then took those images into Photoshop to add some extra elements, such as text, color overlays, etc.

Overall, I found DALL•E 2 to be very underwhelming, in terms of the image results that were generated based on my prompts. I don't think the final t-shirt, packaging, and advertisement are as good as they could be, by any means, but I tried to rely on DALL•E 2 as much as possible throughout the entire process.

Documentation of Kate's process (Non-designer using AI instead of a human designer)

-Logo

I've used ChatGPT before but not DALL-E. I'm going to start my journey by typing in "Create a logo for a winery" just to see what it can create without any specific prompts. Wow what it came up with was not good.

That returned no inspiration and really no good starting point for me. So,I'm going to do research on how to create a logo in AI

https://www.youtube.com/watch?v=hu_XLxseFuM

 After that I'm relooking at the 3rd logo that the first promt produced, it's not that bad and could be a good starting point, but I want to see what else I can do.

Actually, I'm getting ahead of myself and need to have a business name first. I'm going to stay on brand and go to ChatGPT for potential names.

Prompt "Give me 5 potential names for a winery"

I'm going to go with a traditional winery that gives me vineyard vibes so "Vineyard Vista '' it is! With this let's see what DALL-E can come up with with the prompt "Create a logo for a winery called Vineyard Vista"

So much better! Except for the name ??? Not sure why it comes up like that. Anyway, I'm inspired by the first logo & 3rd one.

I then clicked on "Variations" of the first logo and it brought me this:

The original is definitely better.

I went to change up my previous prompt but ended up hitting generate again and got different logos for the same prompt.

I feel as though some of these logos are too busy, let's see what generates with "Create a simple logo for a winery called Vineyard Vista" since "simple" is one of the requirements in the brief.

This yielded one good option, the last that actually looks like a logo BUT it's too simple and could be for anything, not just a winery.

I went and looked up some famous logo designers, the one that resonated with me the most was Paul Rand. Query: "Create a logo for a winery called "Vineyard Vista", Paul Rand"

Lot more fun, a lot more modern but still not what I want.

Prompt: Create a simple, modern logo for a winery called "Vineyard Vista"

I like most of these, especially the last two.

I think the 3rd is my favorite so far and could be a starting point so I want to go in and edit it/see how I can improve it.

I have no idea how to edit in DALL-E so I'm looking it up:

https://help.openai.com/en/articles/6516417-dall-e-editor-guide

https://www.youtube.com/watch?v=vD84y58Aj_M

Midjourney Logo Design Prompts: Beautiful Logo Styles for your Brand

Some potential prompts I liked:

emblem for a college rowing team, simple minimal --no shading detail ornamentation realistic color

flat vector logo of deer head, minimal graphic, by Sagi Haviv --no realistic photo detail shading

From my Research I don't think I can edit the text within the logo so that limits me to use combination marks (phrase I learned from the article above).

I decided that I like the logo mentioned above the best. I think it's representative of a my name "Vista Vineyard" and of a winery without being too in your face about it. I also like the colors: purple for wine & green for the vineyards.

Since I cannot edit the text within the logo I went to edit and removed the background.

I'm now going to go to Canva and try to recreate the text of the logo as closely to what AI generated.

Here's what I came up with:

I'm downloading it - tried uploading it but then couldn't figure out how to get it show up on a shirt so I'm switching gears to start out with a shirt.

-Shirt

 Query: White tshirt

5 trial prompts

"Successful prompt" flat white t shirt

Tried to go and add my logo on top of my shirt but It wouldn't let me rotate it to fit.

Having to go back to find an upright shirt.

Omg I spent so long and so many credits trying to find the perfect white tshirt to add my logo to.

I also could NOT get my logo to be in line with the shirt, it would not work. At this moment I am 100% doubting if AI and a non-designer can go very far.

-Bottle

On to Deliverable #2!

Had to go back and look at how to use DALL-E for things that are not logos.

https://pitch.com/v/DALL-E-prompt-book-v1-tmd33y/d1593e73-0f7e-43f4-958a-593c43f852f2

Continuing on with the theme: real, light green wine bottle with a label, white background

I'm going with the second one since it matches the green in my logo

I'm editing it to remove the current logo on the bottle and putting in my own.

Having a hard time editing the current label out :(very frustrating

Going back.

Query: real, light green wine bottle with a blank label, white background

None of these are images of full wine bottles so I'm having to add a frame.

The first one I did was wayyy too long. The second round is looking much nicer.

With the logo on, much harder since I can't wrap it or add anything else to the label.

Feeling pretty defeated and like this was done by a child and not an adult. I feel like I could produce a better graphics stack with canva or another similar tool.

-Ad

Phase 3.

Query: magazine ad for a winery

Doesn't relate to the brand image we're trying to create

Query: simple, clean, magazine ad for a winery

Wayyy too simple

Query: simple, clean, magazine ad for a winery

Again having trouble removing the text to add my own logo & product.

Going to start with a plain background and add in my product and logo.

I didn't save my product in a transparent background so having to go back and do that.

Prompt: Italian country side, rolling hills, vineyard, light green, light purple

Prompt: portrait of a vista, clean, simple, winery

Not working out for me.

Promt: simple, clean, beautiful, magazine ad for a winery, no text

And then I went back to my recents and saw this

I'm going to use this and crop out the top at the end.

It is definitely not perfect but I like this the most of any of the deliverables.

 My takeaway is that at this point in time AI is not self reliant enough to cause graphic designers

any stress with over taking their jobs. I think platforms like Canva make it 10000% easier to

make a logo or ad without having to make 50 different prompts.