The Synthetic Uncanny: Grotesque Aesthetics in Artificial Intelligence Art

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The Synthetic Uncanny
Grotesque Aesthetics in Artificial Intelligence Art

Senior Project Submitted to
The Division of the Arts
of Bard College

by
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Fig. 1  Jon Rafman, album cover art for Lil Yachty’s *Let’s Start Here*, 2023.
Chapter 1: Introduction - Creative Machines

I want to begin this project with a statement that in 2023, the current year on Earth, humanity is likely standing on the brink of something truly unparalleled. An unprecedented, watershed moment. This impending moment would be that in which humanity gains the technological power to create, besides humanity, “other” intelligences. In other words, the ability to bestow intelligence unto that which lacked it, like Pinnochio coming to life. For the first time humanity may be coexisting with separate intelligences, who will be our permanent companions here on Earth. They are being called “AGI”, artificial general intelligences, and they are almost certainly in the process of manifesting at this moment.

The question then is simple, what really is intelligence? Defining this word has historically proven a controversial subject. A simple way to think about intelligence is that it is the thing which separates humanity from the rest of organic life, not to imply that animals are “unintelligent”, but as the essence of why man and animals are dissimilar. It is whatever the thing is that we have and which they do not. That which spurred man to invent the wheel. “Reasoning” or, perhaps “problem solving”. “Understanding” may be the most appropriate. Something to remember is that to be able to “understand” something, you first must be able to “learn”.

The image above is the album cover art of American rapper Lil Yachty’s fourth album, titled Let’s Start Here, released January 27th, 2023, on Motown Records. The composition features a group of seven individuals dressed in business attire, situated in a boardroom setting and facing the viewer. The work would almost resemble a real photograph, were it not for the strikingly distorted facial features of the figures, their mouths contorted as if laughing at the viewer. Furthermore, the digital resolution of the image is noticeably blurred, particularly around
the facial features. The low fidelity fails to capture any subtle visual nuances, rendering the texture of the subjects’ skin and clothing into an indecipherable digital material.

This is because this image was not touched by a human. This synthetic image, generated through the use of artificial intelligence, was produced by Canadian contemporary artist Jon Rafman.\(^1\) The artist used a generative “deep learning” model, consisting of a neural network that has been algorithmically trained on an extensive dataset of visual information obtained from the Internet. Through this method, the image was created with minimal human involvement, instead relying on computational processes to compose the work. As practical tools, however, generative models are no challenge to use. One simply types in what they want to see, creating a linguistic prompt which the program will use to generate a set of images. The term “synthetic image” refers to any image generated using this method.

*Let's Start Here* was a massively successful album, debuting at No. 9 on the American *Billboard 200* chart.\(^2\) Given this achievement, it can be argued that this image could very well be one of the earliest historical examples of synthetic media to have gained widespread exposure in the realm of global popular culture. This development marks a significant turning point in the evolution of image-making. This image was created by a *machine*, representing a long-awaited milestone in the field of artificial intelligence and automated technology. Scholars have long sought the realization of this vision, tracing back to the earliest days of the Industrial Age and the advent of mechanical automatons capable of reproducing images.\(^3\)

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1 Rafman revealed in an Instagram post on January 28th, 2023, the day after the album’s release, that he contributed the album’s cover art. Previously, Rafman had stated via his Instagram that his synthetic images were generated using CLIP-Guided Diffusion, a combination of two image synthesis models. His announcement post can be found here: [https://www.instagram.com/p/Cn-xkaxJBP3/?hl=en](https://www.instagram.com/p/Cn-xkaxJBP3/?hl=en).


3 Maillardet’s Automaton, built in 1800 by Swiss mathematician Henri Maillardet, was a self-operating machine which could reproduce four drawings and three poems. The Franklin Institute, which currently possesses it, writes,
This project will define the visual characteristics which distinguish synthetic images, and how these characteristics are directly related to the evolution of the technological means by which they are created. As machine learning software is still in its infancy, this wholly new form of visual culture is one that is developing rapidly and dramatically, quickly beginning to leak into almost every facet of our modern digital lifestyles. Through an examination of the history of artificially-generated images, the visual aesthetic that is found to have prevailed, and is currently prevailing, is an aesthetic of extreme visual uncanniness, on par with the most radical works of Surrealism and abstract art. The primary and driving reason for this trend is that it is both the unintentional byproduct of the imperfections of the technology, as well as the result of artists accepting this fact and incorporating it into their work. As synthetic images frequently fail to portray what they’re attempting to, the results are often disturbing, illogical, and otherworldly, and as such, produce naturally uncanny effects.

The term “uncanny”, coined by German psychiatrist Ernst Jentsch in 1906, is said to describe not an emotion, but a psychological sensation, rooted in the emotion of fear but more often described as an uneasiness or unsettled feeling. Jentsch claims that this sensation arises out of the uncertainty of encountering an entity that strikes one as familiar, in a humanlike way, and yet fails in its attempt to produce a believable illusion. As examples, Jentsch discusses automatons, dolls, and wax figures. He pinpoints the source of the phenomenon being in these unsuccessful replications of human behavior, explaining, “A doll which closes and opens its eyes by itself, or a small automatic toy, will cause no notable sensation of this kind, while on the other

“Automata, such as Maillardet's Automaton, demonstrated mankind's efforts to imitate life by mechanical means—and are fascinating examples of the intersection of art and science.” “Maillardet's Automaton,” The Franklin Institute, n.d., https://www.fi.edu/en/history-resources/automaton.
hand, for example, the life-size machines that perform complicated tasks, blow trumpets, dance and so forth, very easily give one a feeling of unease”.

Applying this definition to synthetic images, it can be understood that their uncanny visual characteristics are the direct result of the technology trying and failing to create the appearance of a real image, especially when it is one featuring humans. When it inevitably makes mistakes, as viewers we suddenly see through the illusion that these images are in fact the product of a non-human intelligence, one which cannot understand why we would be repulsed by such grotesque visual distortions. At first they strike viewers as familiar, due to the recognition of whatever subject the model is attempting to portray based off of its dataset, but when the result is unconvincing, and features surreal distortions of reality, viewers come to the realization that the image they are witnessing is devoid of human touch. In *Digital Uncanny*, the film and media scholar Kriss Ravetto-Biagioli explains on this exact topic: “The digital uncanny does not erase the uncanny feeling we develop when confronted with robots that are too lifelike or when we experience déjà vu. What it does do, however, is add another dimension to them, questioning whether these responses are subjective or automated—automated by reducing one’s subjectivity to data patterns and using them to design objects that would thereby elicit one’s genuinely subjective (but effectively preset) response.” (Jentsch 10). In a sense, the author ties the digital uncanny back to its true source: the Internet. The data which we feed into the Internet is now being recycled back into the production of synthetic images, eliciting our sense of the uncanny by both failing to imitate the non-digital world, as well as confusing viewers on whether or not

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4 Jentsch’s essay, *On the Psychology of the Uncanny*, was published in two issues of Germany’s Psychiatrisch-Neurologische Wochenschrift (Psychiatric-Neurological Weekly) on August 25th, 1906 and September 1st, 1906. The only digital translation which I was able to locate can be found here: [https://theuncannything.files.wordpress.com/2012/09/jentsch_uncanny.pdf](https://theuncannything.files.wordpress.com/2012/09/jentsch_uncanny.pdf).

these effects are intentional or not. In many cases they are both, with even the earliest examples of synthetic imagery possessing an unsettling visual presence.

My experiences with synthetic images began in 2020, in the midst of the COVID-19 pandemic. However, prior to this I was aware of a technology known as DeepDream, essentially a precursor to modern deep learning models. Developed by Alexander Mordvintsev, a computer engineer at Google, this program possessed a neural network which was designed with a crude form of intelligent image recognition. DeepDream could recognize visual patterns in a digital image, and proceed to digitally modify the image in order to enhance the patterns it could detect. However, when the patterns it would try to detect were set to “the facial features of dogs”, the results were effectively the beginning of synthetic media’s foray into the uncanny. Horribly warped, kaleidoscopic images of cats covered in eyeballs, which in turn had their own smaller dog-faces, proceeded to go viral on the Internet, fig. 2 being an example of one such image. Most importantly, DeepDream, in addition to being a visual filter which could be applied to any image, was able to generate images that were not programmed into its system, instead working purely off of its dataset to generate pictures. With the release of this software in 2015, synthetic images were unleashed into the world, albeit in a premature state.

Fig. 2  Alexander Mordvintsev, *Father Cat*, 2015. Digital image enhanced with DeepDream.
The moment that truly defined synthetic images for me was the sudden availability of “text-to-image” generators, as described before, that simply convert a linguistic prompt into a synthetic image. The technology which allowed for this invention was perhaps one of the most critical inventions in the entire history of artificial intelligence: generative adversarial networks, or “GANs”). GANs were developed almost simultaneously with DeepDream, however by a different Google computer engineer, Ian Goodfellow. In effect, they allowed for the ability of a deep learning model to generate any type of image at all, as long as it had some visual basis in its dataset. GANs used a form of game theory, where two neural networks would compete with each other to create images, with one either accepting or rejecting the results. By basing these generative models off of random noise, however, the systems could quickly adapt to composing all types of images, most noticeably, realistic human faces. In his book The Artist in the Machine, Arthur I. Miller dedicates an entire chapter to GANs, quoting Ian Goodfellow as saying, “You can think of generative models as giving artificial intelligence a form of imagination.”, and, “I look forward to seeing how a lot of mathematical tools I’ve developed for this work will be useful to artists.” (Miller 89). Since this moment, the world has owed a great deal to Ian Goodfellow, as with his invention of GANs, along with Mordvintsev’s DeepDream, synthetic images began to explode into the mainstream.

Immediately there were a variety of pop-culture moments for synthetic images. First, a meme-like image with the caption “Name one thing in this photo…” went viral on Twitter. It was, in fact, a GAN-generated image that had failed horribly to render a photographic picture, seen in fig. 3. This bizarre, incomprehensible, Surrealist nightmare confounded the minds of thousands, and for many would be the first time many had seen a synthetic image. Next, GAN-generated images of realistic human faces from a website, “This Person Does Not Exist”,

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went viral. Seen in fig. 4, these synthetic human faces proved to the world the potential of “deep-fakes”, or believable AI-generated images of humans.

Fig. 3  Unknown artist, *Name one thing in this photo*, 2019. GAN-generated image. Posted to Twitter / X by @melip0ne, April 22, 2019. [https://twitter.com/melip0ne/status/112050395526750208](https://twitter.com/melip0ne/status/112050395526750208).

Fig. 4  Collage of images from [https://this-person-does-not-exist.com/en](https://this-person-does-not-exist.com/en).
From 2020 onward, a nearly constant recreational activity between myself and friends has been to sit down together at a computer and create synthetic images. In these three years since, many different programs have come and gone, replaced by better models every few months. There was BigSleep, VQGAN + CLIP, NeuralBlender, and then there was another critical moment in 2021 when OpenAI released DALL-E 2, an advanced deep learning model capable of producing high-quality images. As of 2023, DALL-E 2 is still one of the highest quality generative models on the market, now along with two others, Stable Diffusion and Midjourney. These three models are currently dominating the synthetic image culture, however, the synthetic images themselves are just as visually unsettling as ever.

Part of the process of creating synthetic images, from a user standpoint, is sifting through the countless failures, images that either did not match the prompt which one entered, or did, and yet were marred by all variety of strange visual errors. Especially when it comes to human and animal bodies, synthetic images easily produce an aesthetic comparable to body-horror movies. An extremely common occurrence, to the point of being a running joke in the AI-community, is that deep learning models consistently fail when it comes to portraying human hands. Frequently synthetic images of hands will make little to no logical sense, with either too many fingers, not enough fingers, or even fingers growing out of other ones. This inherent visual uncanniness surely is responsible for alienating a large number of viewers from enjoying synthetic images, however, this has not stopped the fine art world from utilizing these phenomena.

In the chapters to come, a number of fine artists who have created images with artificial intelligence will be covered, dating from the pre-Internet era, to the later turn-of-the-century, up to the present day. From the earliest days of computers, artists have existed who have rode this line between the arts and the sciences. Discussed firstly will be the British-born artist Harold
Cohen, who beginning in 1968 developed his own computer software, affectionately called “AARON”, which could compose original images. However, despite its digital complexity, Cohen’s creation was not all dissimilar to the automatons of previous centuries. Cohen was still required to manually program in the exact instructions for the computer to draw every individual aspect of the images it was composing. It would not be until the days of the Internet, with the mass-collection of data from around the globe, that machine learning software would be possible, leading us to the modern generation of AI-artists.

The following sections will focus on two Canadian contemporary artists: Jon Rafman (mentioned before), and Beth Frey. In addition, I will also highlight a selection of my own synthetic images which I have created over the last three years. The common thread between all of these artists is an acceptance of the failings of these technologies. Instead of rejecting the uncanny-horror of cats covered in eyeballs, hands with too many fingers, and disfigured human faces, these artists have seen through the alienating exterior of artificial intelligence to find the creative gold that lies underneath. In doing so, they have produced bodies of work which function in conversation with these aesthetics, tackling the digital uncanny as it relates to mass media, memories, nostalgia, and an emotional longing for the past. Retro-aesthetics are frequently deployed, in particular referencing visual mediums from the 1980s and 1990s, such as VHS tape, xerox photocopying, and early computer art.

In addition, an important subject which emerges in this conversation is the role of social media. Virtually all of the artists mentioned, and nearly all people sharing synthetic images, are enabled by the accessibility of social media, as the digital medium means that these images can be conceptualized, created, and published with rapid speed. Frequently these artists will haphazardly create and share synthetic images, without any titles or information, only to
disappear into cyberspace. This quantity-over-quality approach has been a crucial factor in the development of synthetic image aesthetics, as the constant barrage of content found on sites such as Reddit, Twitter, and Instagram have fueled the evolution of visual concepts which are fed into these deep learning models. For example, the rehashing of stills from popular films, by prompting the model to insert a character into them, is a nearly constant trend. Similarly, there has been the trend of absurdist prompts, like for example, “a farmer growing ice cream”. Overall, the practice of synthetic image-creation seeks to revisit and, like music, remix the entire history of images as we know them, from cave paintings to Van Gogh.

The ethical considerations relating to AI will also be discussed, as they are numerous and are a subject that is currently greatly debated. Deep-fake images, as their quality has improved drastically over recent months, are fueling widely-covered moments of misinformation, such as with fake images of the “arrest of Donald Trump”, or with images of the Pope wearing a puffer jacket. Privacy matters, relating to “big data” as a surveillance mechanism, will also be discussed, as the collection of data from the Internet represents a larger debate over individual rights and ownership of digital information. Conclusively, the potential for the misuse of artificial intelligence is monumental, with widespread fear around the topic currently circulating.

The future implications of AI, and synthetic images as a whole, will be the last topic covered, as it stands as the largest hypothetical question. In particular, the potential of connecting synthetic imagery with virtual reality experiences has entered into the global conversation, with the largest tech companies in the world, including Google, Apple, and Meta, all currently having stated to be developing this new technology. Augmented reality, when combined with synthetic images, stands as a potentially massive invention. Tools such as “smart glasses” are understood to be currently in development for this exact purpose.
Synthetic imagery, in summary, could very well be the most powerful invention that mankind has created. The day that I typed in my first prompt into a text-to-image generator, I understood that the possibilities of this technology are simply limitless. Every individual who possesses this technology now has, effectively, the ability to see anything that they want. For the past three years my imagination has raced with images of the future, many like *The Matrix*, as I can clearly envision mankind encased in a simulated reality, with all of our dreams and desires immediately synthesized and delivered to us as tangible sensory experiences. Keep in mind that synthetic video and audio are already here. Every day has the potential for the unveiling of a world-changing technology. We live in perhaps the most exciting times in human history. With synthetic images, a new frontier has opened, although we are currently in the crude, uncanny, and low-fidelity days, a kind of transitory and liminal state. Regardless, who could have guessed that sooner than exploring outer space, mankind would instead explore inner space? The realms of fantasy, now suddenly made tangible.
Chapter 2: Harold Cohen - AARON

Undeniably one of the most notable pre-Internet artists to engage with artificial intelligence is Harold Cohen, a British-born abstract painter who relocated to California in the late-1960s and caught the first wave of computer art. He would begin the transition from being a painter to being a coder of programs which create paintings. Cohen would represent, nearly forty years ahead of his time, the movement of traditional artists embracing automated technology to come in the 21st century. Before machine learning and without the Internet, he was determined to show the world a computer-powered, artificially intelligent drawing machine, which could generate original and representational images on command. He would name it “AARON”, thus beginning a multi-decade creative partnership between a man and his computer program, which he continually upgraded as computer technology improved. Since his passing in 2016, Cohen’s name has found new relevancy in the now ever-expanding AI-art sphere, with his works having been exhibited at Tate Gallery in London and SFMOMA. He is currently represented by London contemporary art gallery Gazelli Art House, who have exhibited his work in two group shows, the most recent in September of 2023, as well as a solo exhibition in 2022 titled “The AARON Retrospective”. With the continually broadening future of AI-art ahead, Cohen’s body of work is now being looked back upon with great respect for his pioneering ambition.

Born in London in 1928, Cohen attended the Slade School of Art where he began a career in painting, developing an abstract expressionist language. He would eventually find success in this, representing the UK at both the Venice and Paris Biennials in 1966, however Cohen had expressed dissatisfaction with this work from his pre-AARON period. Regardless, viewing it in retrospect does provide some particularly useful insights into his thinking regarding the image-making process. Before the Event (fig. 5), a piece from 1963, gives a full display of

7 Gazelli Art House: https://gazelliarthouse.com/artists/harold-cohen/exhibitions/.
Cohen’s aesthetic prior to his involvement with computer systems, and even shows some alarming similarities to his work produced with AARON. What set Cohen apart from other abstract painters of his generation was his uniquely “meta” approach to painting. His primary focus is in the act of representation itself, as by depicting a variety of abstract and biomorphic forms, he hints at countless possible visual evocations. He is interested, specifically, in what it is possible to evoke in an abstract image given the bare minimum of visual requirements. In this piece, the blank void of the canvas contains numerous forms: orange and red filament-like structures, geometric diagrams, optical stripes and patterns, and various textural painting techniques. Cohen keeps a deliberate focus on balancing the line between artificial and natural, bound together by a warm and organic color palette.

Fig. 5  Harold Cohen, *Before the Event*, 1963. Tempera and oil on canvas, 98 x 115 in. (249 x 292.8 cm), Tate Gallery, London.
From this aesthetic starting point, Cohen’s career would simply be the result of him applying a simple question: could a machine not do exactly this? Surely a sufficiently complex machine would have the capacity to create a handful of marks on a canvas, purely abstract forms, in such a way that numerous evocations and interpretations from the viewer are possible. Then with a sufficient enough sense of shape, paired with an eye-catching palette, that the result would be truly automated, mechanically-rendered, original art. Cohen saw that this was the way of the future, and for this he was a visionary, however he had yet to find his artistic companion.

Unsatisfied with the London art scene, he would take a teaching job at the University of California, San Diego in 1968. There he was introduced to the quickly expanding world of early computer systems which the college possessed. Mainframe computers, which took up entire rooms, were at that point only capable of the most simple textual outputs, and yet Cohen recognized the potential in using this technology to do something that had not been done before: to automate his own painting practice using digital programming. He began teaching himself to code, and slowly but surely Cohen shifted his entire creative workflow into the engineering world, with the additional challenge of building a mechanical apparatus through which his computer program would actually execute its drawings onto canvas.

This primitive form of AARON would first take the form of what Cohen would call the “turtle” (fig. 6): a small metal device with wheels that could alternate between drawing and non-drawing modes, in which it would leave a mark on the canvas beneath it. The turtle was controlled, steered like a tiny car, by the computer software, which Cohen meticulously programmed to make a variety of different lines: short, long, curved, straight, connected, and unconnected. This was as close as Cohen was able to get to modern machine learning software without the expansive dataset of the Internet. Cohen’s artificial intelligence was, yes, fully
autonomous and generative, yet in a practical sense did not function all that differently from the mechanical automatons of the past. The key difference between the two is that Cohen used the capabilities of computers to create “rules” for his program, which would additionally factor in an element of randomness. However, with no virtually no limit to how many rules he could impose, Cohen saw the figurative potential in his machines, in addition to the abstract.

Fig. 6  Becky Cohen, Harold Cohen's Turtle, 1976. Photographic contact print, 4 x 5 in. (10.2 x 12.7 cm), The Computer History Museum, Mountain View, California.

Drawing (fig. 7), from 1974, shows Cohen and AARON working fully within their integrated creative partnership. For this and many other of Cohen’s works from the 1970s he

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8 Harold Cohen, “A Sorcerer's Apprentice” Talk at the Tate Modern, 2004. Accessed via Cohen’s official website: [https://www.aaronshome.com/aaron/publications/index.html](https://www.aaronshome.com/aaron/publications/index.html). “AARON began, officially, around 1973, when I was a guest scholar at the AI Lab at Stanford University.”, and, “AARON was by this time well-established as a drawing program, with a string of exhibitions to its credit, having developed over the twelve years or so from generating rather primitive-looking, evocative images into a program with enough knowledge to make straightforwardly representational drawings of a few real-world objects.” (Cohen 19).
fulfilled the role of the colorist, while the computer program took the role of the illustrator.

AARON had officially begun, and with that, Cohen and it were truly a team, participating regularly in exhibitions. Like in his previous work, Cohen returns to the almost cellular image of forms freely floating in a blank, negative space. However, AARON displays its compositional capabilities with a remarkably balanced array of asymmetrical rounded shapes, which Cohen, in turn, takes to with coloured pencils. The result is a bright and vibrant abstract image, evocative of all manner of things: jelly beans, sea glass, microplastics, or perhaps the later works of Kandinsky. However, still lacking representational abilities, AARON had yet to reveal its most uncanny, human-like ability: to generate images of discrete objects and figures.

Fig. 7  Harold Cohen, *Drawing*, 1974. Computer-generated drawing and coloured pencil. 11 x 8.5 in. (21.8 x 28 cm), The Victoria and Albert Museum, London.
Something peculiar about Cohen’s work from his 1970s era is the manner by which his artistic partnership with AARON, as colorist and illustrator, brings to mind various art historical traditions involving the differentiation of these creative roles. In particular it evokes the 16th-century Italian Renaissance debate of disegno e colore, in which famous writers such as Giorgio Vasari argued over what was the superior approach to painting: the spontaneous, expressive approach of the colorist, or the meticulous, carefully-crafted hand of the designer. Cohen and AARON bring this debate to modern, futuristic heights, as even though Cohen was the one either accepting or rejecting AARON’s results, in the end it was the machine that had the most significant impact on what a piece of its art may look like. This, however, would soon change with AARON eventually gaining coloring abilities, taking on both roles.

Cohen gradually improved the turtle model over the course of the 1970s, eventually transforming it into a mechanical arm which could be moved by the computer along an XY grid suspended above the canvas. This allowed for finer mobility, and with a more complex program, a finer degree of image-making potential. It was at this point that AARON would enter its own form of the uncanny valley, as with advancements in its software and multitudinous new drawing rules imposed by Cohen, the machine would learn to depict non-abstract, recognizable forms. This meant a new level of synthesis, almost comparable to machine learning models, yet severely lacking the learning speeds. AARON had become an experiment in a manual, hand-crafted type of machine learning, with no dataset to speak of, and yet the generation of new images Cohen would produce with it would bear some shocking similarities to 21st-century synthetic images.

6-3#5 -- i23-4071 (fig. 8), completed in 1987, is a stunning and highly uncanny display of AARON’s degree of figurative drawing ability achieved during the 1980s. With Cohen’s code “training” it, the machine was now able to depict two-dimensional foliage, as well as vague,
humanoid figures. In this piece, a single human figure stands before a lush assortment of psychedelically-colored plants, from small shrubs to large flowering trees. As Cohen often does, the background is pure negative space. The figure, standing in the foreground, faces the viewer with both hands in the air, exhibiting a mysterious expression. It just so happens that this figure possesses some of the hallmarks of the synthetic uncanny of generative models: minimal facial features, abnormal bodily proportions, and perhaps most prominently, a nonstandard set of digits on its hands and feet. In fact, the figure possesses no toes at all. Additionally, it is unclear if the figure is intended to be wearing clothes, its lurid colors making it almost appear to merge with the floral arrangement which it stands before.

Fig. 8  Harold Cohen, 6-3#5 -- i23-4071, 1987. Computer-generated drawing and hand-color dye. 29.1 x 40.1 in. (74 x 101.9 cm), Gazelli Art House, London.
In the last decades of his career, Cohen and AARON would mostly rehash this familiar visual language which the artist had begun in the 1960s: evocatively abstract, two-dimensional geometry, biomorphic forms, and an increasingly complex repertoire of basic figurative representations of people. Cohen, in the end, accomplished his goal: he had translated his painting practice into an automated, computer-programmed machine, which theoretically could continue to make work even beyond his death. By definition, AARON was an artificial intelligence, albeit the most rudimentary of its kind. Its images could be called synthetic, albeit its training was purely limited to that which Cohen “taught” it, by carefully constructing a matrix of drawing rules for it to follow. Unsurprisingly, once AARON reached the point of illustrating human figures, it began to evoke the uncanny by classic definition. The familiarity of its pictures are palpable, being evocative of distant, half-forgotten memories, as faceless figures, their features indiscernible, appear from inside its digital vacuum. By then converting these images into a physical format, the canvas, AARON effectively bridges the two planes, acting as a cross between true reality, and its own digital dimension, purely a facsimile of reality. The machine only knows the commands given to it by its creator, leaving a void of understanding where a sense of humanity is supposed to be.

The missing element of Cohen’s work, which puts it in stark contrast to post-Internet AI-art aesthetics, is of course the factor of the grotesque. Obviously AARON was never able to come even remotely close to creating the illusion of a real image, such as a photograph. It was a drawing machine, a digital automaton with a bare-bones ability to learn. But was it truly intelligent? It could be debated, but in the end, its ability to perform the basic functions of what is a creative act makes it a wholly unique, creative machine, approaching a sense of person-hood. As the 21st century began, digital images took hold of the world as the predominant medium of
shareable visual content, and thus the idea of an artificial intelligence physically drawing on a canvas would fall out of style. It became clear the limitations of the non-digital world were no match for new lightning-fast processing speeds, and by the 2010s this was obvious in the endless digital mutations of DeepDream and GANs. Sadly, AARON would never be able to compete with these programs possessing neural networks, leaving it in a kind of grandfatherly position for the AIs of the future. Without the confines of the canvas, generative models could push images beyond their breaking point, synthesizing combinations of imagery in their dataset into all varieties of grotesque visual inventions, as if Cohen’s digital petri dish was finally coming alive. Something was growing, and it was up to a new generation to decipher its strange horizons.

Chapter 3: Jon Rafman - Archiving The Virtual World

The high-speed Internet-age of the 2000s yielded the phenomenon of Jon Rafman, an Internet-archivist-as-artist whose work greatly foreshadowed the machine learning-age of the 2020s as it primarily related to digital data collection, and more importantly, to the World Wide Web as the centralization of humanity’s dreams and memories. Rafman’s artistic practice has always been comparable to a kind of virtual, online anthropology, consistently involving the artist scouring the Internet for obscure and/or author-less content, with the goal of uncovering images which reveal underlying contemporary moods of melancholy, existentialism, and humor. He would eventually jump on the wave of generative AI-art himself, creating fully synthetic works from as early as GAN-based image models, up through more complex diffusion models.

Rafman’s work frequently involves what he refers to as “virtual worlds”, or online interactive spaces, as he investigates niche Internet subcultures such as those found on forum sites, multiplayer video games, image boards, chat rooms, and other online media platforms. Rafman states on his website, regarding his work, “An underlying theme or goal is a constant search for artistic tools and methods that best represent or reveal modern experience. So I look for ideas and inspiration from those who also struggle to represent their experience of modernity, whatever the time period or era.” This is exactly what Rafman does, focusing his work on an individual platform or digital format in which anonymous users, usually non-artists, express themselves in such a way as to give a picture of the unspoken modern experience. He will then extract, in whatever way is most fit, the visual artifacts which reveal this truth. In the process, Rafman often indulges in the grotesque, taboo, and outsider qualities of digital society.

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Born in Montreal c. 1981, Rafman attended McGill University to study philosophy and literature, then subsequently began dreaming of becoming a filmmaker, leading him to study film, video, and new media at the School of the Art Institute of Chicago.\(^\text{10}\) However, beginning in 2008, Rafman would assert himself as a contemporary artist with a specialization in film and video art, with his foremost concern being the new frontier of the Internet, both as his source of inspiration and of his own artistic materials. 2008’s *The Nine Eyes of Google Street View* saw Rafman take a particular fascination in a then-new online service: Google Maps, and their exclusive feature, Google Street View. Essentially an early work of net art, *Nine Eyes* saw Rafman “exploring” the digital simulations of Earth’s roadways which Google constructed by sending out multitudes of cars equipped with 9-lensed cameras, inadvertently providing a raw documentation of all varieties of human life. Rafman would then collect and publish the most peculiar sights that he stumbled upon.

A young man moons the camera. Three penguins stand in a tundra. A house is engulfed in flames (fig. 10). A donkey has its head stuck in a wooden fence. A man sits alone holding his head in his hands. Two stray dogs copulate. A toddler sits all alone on a lawn. These are just some of the images which Rafman presents, covering a multitude of different emotional tones. They range from hysterically disdainful to tragically beautiful, and thanks to the wandering eyes of Google Street View cars, they are anonymously preserved on the Internet for eternity. Rafman displays a view of humanity that is delightfully absurd, and as he often puts it, reveals a true, unbiased image of modern human society. Countless images which constitute *Nine Eyes* were posted by Rafman to the project’s official website, 9-eyes.com, of which the last was posted in 2020, making it an ongoing, 12-year long project. Selected images were exhibited as prints at

London’s Saatchi Gallery in 2012, and additional selections were published in a hardcover edition in 2016 by Los Angeles art book publisher New Documents.¹¹ ¹²

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Fig. 10  Jon Rafman, untitled image from *The 9 Eyes of Google Street View*, 2008-present. https://9-eyes.com.

Digital screenshot of photograph taken from Google Street View.

Rafman’s second project, *Kool-Aid Man in Second Life*, continued his obsession with documenting virtual worlds, albeit from a much more involved perspective. This time around Rafman took the role of the Google Street View car himself, however instead of documenting the real world, he took to documenting the online multimedia platform *Second Life*, known for its expansive virtual roleplaying environments and chat rooms. Rafman assumed the player model of none other than the iconic Kool-Aid Man, and from 2008 to 2011, conducted guided tours of

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the virtual world, which could be scheduled via Rafman’s website. In addition, he would produce a number of promo videos and interviews filmed within Second Life.

Rafman saw past the exterior of these free online spaces, Google Maps and Second Life, to establish that there is in fact a core of existential emotional expression taking place within their environments, completely unbeknownst to the artistic minded. He would film, photograph, screenshot, or otherwise distill the content and frame it as the revealing and soulful material which had been hidden beneath the surface. Rafman speaks to the spirituality of Internet nerd culture, where life experiences, memories, and dreams are captured and preserved in the low-cultural form of downloadable phone apps and computer games worlds. Rafman finds that within these unsuspecting digital services and entertainment media often lies a naive expression of core human desires and emotional longing.

Between 2009 and 2011 Rafman heavily occupied himself with both Nine Eyes and Kool-Aid Man, regularly updating their respective websites, and continually expanding each project through video uploads, virtual tours, real-world exhibitions, and even films surrounding each work, Woods of Arcady (2009) and You, The World And I (2010) respectively, leading him to pursue more film and video media projects. Each expressed Rafman’s interest in the subject of virtual worlds, represented heavily through online media and multiplayer video games. Codes of Honor (2011) featured a narration from Rafman over footage of an avatar of himself filmed within Second Life as he recalls childhood memories of video games. A Man Digging (2013) was shot entirely within the shooter game Max Payne 3, and Still Life: Betamale (2013) was composed of images of fringe Internet subcultures documented on 4chan, a popular imageboard website. Each project was essentially a Romanticization of virtual culture, with the constant goal of revealing the ways in which the psyche adapts to the advancement of digital media. In a 2013
publication of *Metaverse Creativity* (now *Virtual Creativity*), Rafman discusses this subject with author Rachel Clarke, stating, “It is these virtual worlds that I feel the need to explore and respond to, in part, because they are so new. I often consider virtual worlds as being more honest and transparent than the real world and thus they are able to indirectly expose hidden ideologies at work in the real world.” (Clarke 58). He also refers to the Romantic concept of the “sublime”, which he believes can be found in platforms such as Second Life. This is the essence of Rafman’s art, a scavenging of digital materials from the collective online subconscious, the synthetic dreams only attainable through these new digital media formats.

At the 2019 Venice Biennale, Rafman debuted *Dream Journal 2016 - 2019*, a deeper dive into his obsession with online forums, as well as his own artistic subconscious. Using hobbyist 3D animation software, Rafman created 90-minutes of animations combining depictions of the artist's own dreams with other fantasies described on various forum websites. Creating original animated material, *Dream Journal* would act as a prelude to his artificial-intelligence based artwork beginning in the following years.

An avid social media user, Rafman began an Instagram account in November 2021 with the handle “@ronjafman” to post solely synthetic image works. This account, still maintained as of August 2023, would act as a documentation platform for Rafman’s experiments with generative models, a kind of de-facto virtual reality for the artist to “explore” as the technology developed. The work which would emerge from this project would constitute one of the most thorough recordings of the growth of the contemporary uncanny aesthetic, from the nearly abstract beginnings of GAN-generated images, leading to high-fidelity Stable Diffusion images. Rafman, perhaps more than any other artist at the time, understood the relationship between this

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new technology and the aesthetic which its images naturally possessed. In his typically post-modern fashion, Rafman would embrace this grotesque reality, as the liminal state that it was: a visual culture that was in the process of materializing, desperately attempting to escape from its own uncanny valley, yet inevitably falling back into it. Rafman’s synthetic images always possess a sense of wrongness, that the technology is trying and failing to replicate a certain type of form, and in the process creates an entirely new world completely by accident. The world of images generated by Harold Cohen’s AARON was severely limited in its scope, whereas generative models were the equivalent of a bottomless well of content, not unlike Google Street View, which was ripe for the artist to extract content from.

The first six synthetic image works which Rafman shared on Instagram consisted of slideshows, where the first slide would be of a blurry, seemingly GAN-generated image, which with every swipe right would gain sharper details, inevitably revealing a horribly twisted form by the final slide. The work below (fig. 11) shows the grotesque transformation of one such image,
depicting what appears to be a white and orange kitten being held up by a hand. Swiping through the slideshow, and thus sharpening the image, resulted in the creature taking on an alarmingly uncanny form, with its originally normal face now rendered into a disturbing, almost human-like visage. Images such as these would embody nearly the entire aesthetic trend of synthetic images since 2021, with many artists accepting the imperfections of the technology, which sometimes comes close to making seamless, realistic photographs, but more often than not instead generates radically surreal and grotesque images, with an almost comical degree of visual malformations. By accepting these results as they are, Rafman and other artists have led the charge into this new, uncanny territory, as synthetic images creep closer and closer to matching the quality of real photos, but never seem to quite reach it. We are left with images such as these, existing in the liminal space between natural and artificial.

By 2022, the generative models had improved significantly, and thus so did Rafman’s works. Similarly to Harold Cohen, he was working directly in a relationship with technology, however unlike Cohen, Rafman was not doing the programming himself. He didn’t need to, as the training of the system had already taken place algorithmically, leaving the artist to root through the scraps of whatever could be generated. In the first half of the year, Rafman posted a series of synthetic image works portraying shirtless humanoid figures which appear to be physically merging with all manner of garbage. In one of these works (fig. 12), a figure appears to be standing outdoors on a city street in daylight, with cars, trees, and electrical poles behind it. Unfortunately, the figure's form, standing squarely in the foreground, is simply nightmarish. With sunken, dark eyes, reddish skin, and grotesque masses of muscle, the figure appears to have all manner of electrical waste fused to its body, with wires, circuits, and other scrap seemingly welded to its face, head, and torso. It is an image out of a sci-fi horror film, and as entirely
rendered by a generative model, its most repulsive visual elements are amplified to an ungodly degree. Synthetic imagery in the future could very well lead to some of the most extreme Hollywood “monster” designs ever to appear on screen, as horror aesthetics, when incorporated by generative models, are able to produce levels of visual grotesqueries previously unimaginable.

![Image](https://www.instagram.com/p/CbMk77RuD43/?img_index=1)

Fig. 12  Jon Rafman, untitled image posted on @ronjafman Instagram page, March 17, 2022.

https://www.instagram.com/p/CbMk77RuD43/?img_index=1.

All of these synthetic image works by Rafman were leading up to something big, culminating in a multimedia project, *Counterfeit Poast* (2022), a large-scale exhibition which opened in October 2022 at Sprüth Magers in Berlin. This show, intended by Rafman to focus
purely on synthetic imagery, was a terrifying synthetic visual feast consisting of an octagonal room displaying large prints of a variety of unnerving AI-artworks on each wall. The rest of the room's surface was covered in vinyl wallpaper which also displayed synthetic images: a dark, hellish pit on the floor, and a bright, cloudy heaven on the ceiling. Furthermore, one side of the octagon led to a smaller room containing a video installation. This video installation element of Counterfeit Poast was surely the pinnacle of Rafman’s AI-art, a height of synthetic uncanniness. The video, which Rafman has only shared segments from online, consists of what the gallery has described as “character studies”, where Rafman applies an AI-powered facial recognition app to synthetic human figures, allowing him to puppeteer their faces. These characters proceed to deliver extended monologues of surreal, fictional online narratives, with such subjects as

![Image](image-url)

Fig. 13 Jon Rafman, installation view of Counterfeit Poast, 2022. Sprüth Magers Gallery, Berlin.


14 “The character studies on view are inspired by “copypasta” (i.e. funny or provocative blocks of text that are repeatedly copied and pasted in online forums such as Reddit and 4chan) and animated using iPhone facial recognition apps”. Quoted from Sprüth Magers: https://spruethmagers.com/exhibitions/jon-rafman-counterfeit-poast-berlin/.
cryptocurrency finances, or the investment of oneself in online fetish communities. Rafman evokes a Boschian vision of the synthetic, digital world, as a grotesque space suspended between Paradise and the Inferno. He hints at the already mass-accepted usage of synthetic images as tools for online communities to indulge in their fantasies, ambivalent to the moral direction of said fantasies, and yet shared anonymously across the Internet. Rafman is acutely aware of the fact that synthetic images are rapidly increasing in quality and popularity, inviting viewers to consider the direction that mankind is heading with this technology.

As the future of humanity’s visual culture appears more and more likely to lie in the hands of generative image models, artists such as Rafman fearlessly present us not with images of perfectly rendered digital fantasies, but with the unsettling, disgusting, grotesque reality which we currently exist in. However, he understands more than well that these aesthetics are evolving everyday, with the technological capabilities growing more and more in potential, countless doors are beginning to open leading to various mediums. Synthetic imagery may be applied not only to paintings and prints, but to films, music, video games, and everything in between. There is not a visual culture on Earth which is immune to the synthetic touch of artificial intelligence, now spreading and growing at previously-thought impossible rates.
Chapter 4: Beth Frey - Into Fantasy

A welcoming tonal contrast to Rafman’s online existentialism is the work of another contemporary Canadian artist: Beth Frey. Similarly to Rafman, and Cohen before him, Frey is a multimedia artist who partway into her career became enamored with the visual potential of artificial intelligence, adapting her previous creative practice to the ongoing expansion of AI technologies. Frey began her career producing abstract and surreal cartoon-like watercolour paintings, which always contained an element of the uncanny and grotesque, particularly in depictions of the human body. She is of the same generation as Rafman, born in Alberta, Canada, and acquired her Bachelor of Fine Arts degree from the University of Victoria in 2004, later earning a Master in Fine Arts from Concordia University in 2015.

What is most important to note about Beth Frey is that she was hardly a well known name in the art world prior to 2022, however all of that changed when Frey began an Instagram account, exactly as Rafman had, and for the same reason: she had begun to experiment with creating synthetic images, and decided to dedicate an entire social media profile to these new works. Frey’s AI-art account, “@sentientmuppetfactory”, since her first post in August of 2022, has amassed a massive audience of 114,000 followers, becoming a viral social media sensation. Her account even dwarfs Rafman’s AI-art account, with just 51,000 followers. The success of both of these artists’ accounts prove that there is, in fact, a large audience as well as a market for profoundly strange, comically grotesque, and uncanny synthetic images, which anybody could make their own profile for and begin creating at any time.

The timeline of Frey’s artistic work prior to her synthetic works reveals the artist as a talented analogue painter, who, drawn by the desire to expand the visual world contained in her paintings, would embrace any and all digital means to alter her work, leading to a variety of
radically surreal experiments, particularly in video medium. The unique quality of her digital approach is in her use of AI-tools to incorporate her body into her paintings, effectively merging herself as an active participant in her artwork as if it were a digital world. Despite having exhibited in many galleries across the United States, Canada, and Mexico, dating as far back as 2004, Frey’s primary medium of delivering her work would be social media platforms such as Instagram, due to the speed at which she could produce on her accounts a variety of surreal creative content, ranging from paintings to sculptures and video performances.\textsuperscript{15}

An example of Frey’s purely analogue, watercolour painting would be \textit{Something from Nothing (after Bouguereau)} (fig. 14), a whimsical, highly surreal piece depicting a group of figures swimming in a body of water, with others seemingly floating in the air. While one can

\begin{figure}[h]
\centering
\includegraphics[width=0.4\textwidth]{fig14.png}
\caption{Beth Frey, \textit{Something from Nothing (after Bouguereau)}, 2022. Watercolour on paper, 22 x 30 in. (55.9 x 76.2 cm). \url{https://www.instagram.com/p/CDrDEq8Dkcq/?hl=en}.}
\end{figure}

\textsuperscript{15} Frey’s website contains a detailed CV detailing her exhibition history, dating back to 2004: \url{http://www.bethfrey.com/cv/}.

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clearly be seen smiling and holding a fish, the actions of the rest defy description. Every element of the paintings appears to be melting, liquifying, and combining into a single watery mass. This is typical of Frey’s style, with the complexly layered composition appearing on the brink of collapse, as if the whole thing could fall apart and wash away in its dream-like vision.

Furthermore, Frey juxtaposes texturally rich watercolours with simplified and abstracted cartoon anatomies, a recurring aspect of her work. Despite the unique quality of pieces such as this, Frey was determined to push her grotesque, washed-out aesthetic into technologically-augmented directions, introducing a futuristic element to Frey’s personal fantasy worlds.

From there, the rest of her creative journey lay in the realms of social media, as similar to Rafman, Frey pursued using accessible, consumer technology, frequently involving AI, to introduce a physically interactive element into her work. She would post, and still does regularly, humorous videos of herself using a facial recognition app to map her own body onto a digitized copy of her own paintings, creating a completely grotesque fusion of the physical and the digital which complements her work massively. As Frey would pursue a higher and higher degree of the synthetic uncanny, this is where her second account profile would come into play, allowing her to re-introduce herself to a new audience, not as a painter, but as an AI-artist with a unusually specific interest in uncanny bodily forms.

Slowly but surely, Frey amassed a new following completely from scratch on her @sentientmuppetfactory account, which as its name implies, was a “factory” of synthetic imagery which the artist would haphazardly add to on a weekly basis, to extremely positive reception. Nearly every synthetic image work featured on the account depicts human figures coexisting with the severely grotesque “sentient muppets”, which appear as a variety of photorealistic cartoon horrors, often resembling people wearing bizarre mascot outfits who
proceed to morph into their surroundings and each other. The overall aesthetic takes on the appearance of film stills from 1980s television sitcoms, such as ALF, where artificially costumed characters seem to exist in an otherwise mundane world.

Frey’s synthetic image works only received titles when they eventually became for sale as prints on thick matte paper, available to purchase via Frey’s online store for between $19.50 and $30.50, in addition to t-shirts and bags depicting her images. In merchandising these images, their ironic value seemed only to increase, with many taking on an almost meme-like status in the virtual space due to their recurrence and constant remixing.

Walking Together (fig. 5) is a perfect example of Frey’s synthetic image work, containing all of the usual elements of those posted to @sentientmuppetfactory. A brightly lit outdoor scene, with an implacable 1980s VHS-like glow, depicts three figures standing in a grassy field. The two women appear totally unremarkable. Perfectly rendered, photorealistic synthetic people.

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However, the third figure is anything but this. Wearing a purple gown, this ominously masked figure possesses an inhumanly large apparatus covering its entire head, which gives the appearance of a sewn-together pillow case modified with facial features. With its large eyes staring down the viewer, this is an ideal case of the synthetic uncanny. Frey is a master of the linguistic prompt, which she is always changing to make her specific visual references impossible to place. This figure, so obviously not an actual person, breaks the illusion of the photorealistic synthetic space, creating a rift in Frey’s hermetic visual fantasy. The failure of Frey’s generative model to create a perfectly believable illusion is, in fact, what makes pieces such as this fantastic, as a sense of self-awareness is used to offset the most grotesque and disturbing qualities, preventing the work from spiraling into horror, as Rafman’s would.

Another notable synthetic work taken from @sentientmuppetfactory, and perhaps Frey’s most popular and viral image, is titled *Hot Dog!* (fig. 16). This wonderful example of synthetic
imagery, appearing in its typical grotesque fashion, is balanced by its outward sense of humor, bringing a lighter emotional counterpoint to the often more ominous works. This simple portrait-style image depicts an elderly Caucasian woman who appears to be holding an unrealistically large hot dog, complete with a bun and mustard, purely with her nose, suspending the food item squarely in the middle of her face. The comical nature of this is contrasted perfectly with the subtle sense of the uncanny, as the spatial dimensions of the woman's face make no sense at all. Her nose appears inhumanly high up on her face, with a massive gap between her nose and mouth seemingly existing for the sole purpose of containing the oversized frankfurter. The genius of this image lies in its potential to be a work of pure accident, as if someone prompted the model to generate “a portrait of a woman holding a hot dog”, which proceeded to fail miserably at creating a believable photorealistic illusion. This potential for the accidental to influence the aesthetic of these images is what drives their uncanny aesthetic, as artists simply must embrace these strange, awe-inspiring distortions of the real world.

Frey, however, experienced a radical shift in her demographic, who now suddenly knew her not for her watercolour works, but for these viral synthetic images, and thus the artist felt an obligation to bridge the gap between these worlds in an organic fashion, leading her to the delightful decision of creating watercolour works directly mimicking her synthetic images, leading to a system of feedback in her artistic practice. Her synthetic images and analogue images could permeate each other, and with the addition of Frey as a physical actor, meant her entire visual universe was quickly combining into a sense of oneness, with the analogue, digital, physical, and synthetic coming together in a spectacular post-everything display. Frey’s works speak to the purity of one’s internal fantasy, as a means of recycling the mundanity of daily life into a colorful, bizarre, and uncanny realm of imagination. The wonders of the technological,
when fused with traditional art forms, could very well lead to breaking down of the barriers between “AI-art” and analogue visual forms.

*Her name is Connie from now on* (fig. 17) is the name Frey would bestow upon her revisitation of *Hot Dog!*, now translated back into her original watercolour form, feeling like a return to the comfort of her prior medium, albeit with the influence of the synthetic uncanny. Frey lovingly renders her image, with the addition of various small biomorphic shapes, almost recalling the abstract evocations of AARON. In a video interview with Concordia University in November of 2023, Frey states, “I’m finding a lot of the AI-generators right now are looking more aesthetically crisp and perfect, but there’s something that feels soulless, like, I don’t mind when there’s going to be six fingers, or something like that.”17. It is precisely in this radical acceptance of the shortcomings of the technology, which results in the incidental appearance of the visually uncanny and the grotesque, that makes Beth Frey perhaps the most wondrous embodiment of the entire aesthetic movement. Artists of today, and of the future, possess a now almost limitless ability to synthesize, combine, and recreate artwork for the express purpose of building one’s own world, which as Rafman believed, is the ultimate manifestation of one's dreams and desires. The synthetic and digital domain, as Frey proves, is an ideal sandbox for humanity’s technological artistic future, with an unlimited terrain to explore.

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17 *Meet alumna Beth Frey, the artist whose AI experiments went viral*, Concordia University, 2023. [https://www.youtube.com/watch?v=LTNEdbA8DoJ](https://www.youtube.com/watch?v=LTNEdbA8DoJ).
Fig. 17  Beth Frey, *Her name is Connie from now on*, 2023. Watercolour on paper, 22 x 30 in. (55.9 x 76.2 cm).

https://www.instagram.com/p/CsbHcpcu4ue/?hl=en.
Chapter 5: Conclusion - Future Days

I consider myself extremely lucky to have attended Bard in these exciting early days of synthetic media, to have been able to witness the growth of artistic phenomena like Frey and Rafman, and most of all, to have fostered my own personal connection with generative AI tools as my primary means of expressing visual concepts. It’s incredible to think how one younger than I could be experiencing this technology with an even fresher perspective. It gives me an intense, optimistic hope for future generations of artists, who above all, will not be limited to their technical abilities to render images, say, with pencil or marker, but simply by their ability to compose the most creative linguistic concepts to use as visual prompts. This, for now, is our primary mode of relaying information to generative models, but even this is subject to change, as a plausible next step for generative models is the ability to collaborate with humans not purely with language, but with sounds and images.

This contemporary, synthetic era which we now find ourselves in has come at the end of almost seven decades of advancement in computer systems, which were not always progressing as dramatically as they are now. “AI winters” is the term used by scholars and scientists to describe the long gaps of time in which there was little progress being made in artificial intelligence, with the multi-decade gap between Harold Cohen and Jon Rafman being indicative of this. During these periods of slow development, it was actually the structural supports that would enable machine learning technologies which were being developed. Namely, high-speed Internet, the World Wide Web, and then finally, the proliferation of social media. Without these three inventions, we would not be at the critical AI moment we now find ourselves at. It truly was the conjunction of separate innovations that has enabled us to exist today in a mind-boggling technological landscape, where such things as “artificial neural networks” are so difficult to
comprehend that they might as well be magic, since the complexity of computer systems has grown exponentially to a point beyond the ordinary person’s understanding. This technology, these generative models, possess a supernatural ability to mimic the physical world, which in their failing to do so has yielded the uncanny landscape of AI-art aesthetics we find ourselves in.

In all of my experimenting with generative models, the rabbit hole which I found myself falling the deepest down was that of synthetic images generated using linguistic prompts involving what I called stoner language: words such as “weird” or “trippy”. I became deeply fascinated with how the system would generalize a concept such as bizarre-ness, as that which is out of the ordinary, alien, or unfamiliar, and how this would translate into synthetic images, which were, admittedly, already bizarre enough. Soon I discovered that prompting the model NeuralBlender to generate “an extremely bizarre face” was a bombshell of a prompt, yielding wildly different results nearly every single time, consisting of faces which were beyond bizarre. They were alien, otherworldly, and as extremely grotesque as they were uncannily familiar. Surely inspired by Rafman and Frey, I knew exactly what to do: create an Instagram page.

On May 9th, 2022 I began my project Face Machine (@face.machine), to document the varieties of synthetic images I was creating which featured these unearthly beings. #1 (fig. 18) was the very first one that was made, and I will never forget how shocked I was when this synthetic face appeared on my screen. Immediately I was impressed by the form: a being which almost resembled a stone sculpture, appearing to have skin made of a concrete-like substance. Then I was simply blown away by the rest of the details: the bright red background, the figures tall forehead and short haircut, it's dark hair appearing to be wrapped in places with gold foil, its large nose, yellow corn-like teeth, and most of all, the small stone-like shapes that appeared to be grafted to its skin under its eyes, which I interpreted as precious gems. What was most
amazing to me was that none of these visual qualities I had prompted it for. I had deliberately left the prompt open ended with the experiential goal in mind of seeing what the AI would do when given this type of command. I simply wanted to see a face that was bizarre, leaving it up to the program to decide for itself what it thinks is bizarre. However, this face is just that: something completely unfamiliar to me. But, perhaps it would not appear as unfamiliar to someone who is from another culture? This bears the questions: can AI be culturally insensitive? Does this “bizarre” face not evoke an artistic simulacra, like tiki-bar exotica of the 1950s, based on foreign visual cultures? These thought-provoking questions were not my primary concern in starting this project, but regardless, they began my thinking about the possible ethical and moral dilemmas posed by synthetic images. The problem is in the bias of the dataset, as in addition to all of the good and accurate knowledge contained on the Internet, we are also training AI on all of our
human imperfections, biases, and potentially our weaknesses. What had started for me as an act of thrill-chasing, had instead ended with a much more significant message: that subjective ideas, such as what is “bizarre”, pose a unique challenge to AI, as the reception of synthetic images relies so much on an individual's perceptions and associations of the visual world.

What is most important with synthetic images is that they contain forms which are intended to be recognizable to us, for image recognition is the basis of so much of machine learning. Recognition is tied to memory, the human ability to recall what something looks like, then compare it to whatever is being witnessed in real time. This is the glue which ties the uncanny to the synthetic media world, as every type of image that can be generated is based on some type of learned pattern in the system, or, its memories. When synthetic images fail to present us with a recognizable, bass-line reality, especially with human figures, they fall into the uncanny valley, leaving us in the liminal state of unknowingness of the intention of this media which we are consuming. Surely this is just one facet of machine learning which can be improved upon with time, however with all of the media content that has been generated in just the last three years, this early-2020s era of AI-generated images has cemented itself in the history of human visual culture as a time in which technology was going through a transformational process which had yet to be perfected.

The synthetic images of our current era are imperfect and malformed, yet these are the exact qualities that nearly all artists working with AI have embraced. Harold Cohen, with his most experimental images, evoked the feeling of Rorschach tests, returning to the theme of image recognition. Cohen was not concerned with the perfection of representational images, but rather the space in which an image puts itself up for interpretation, where the beauty, if there is any, is in the eye of the beholder. It did not matter to Cohen what he saw in the painting, what
mattered is what the viewer saw. The flaws and imperfections of the technology were oftentimes the art itself, similar to the glitch art movement of the 1990s and 2000s which embraced the failings of digital audio technology, repurposing technological errors into usable artistic material.

Now in the 2020s era of generative models, the glitches are everything. Everytime a linguistic prompt is put into a model, a dice is rolled, to see if whether the program will perfectly deliver to you the exact kind of image that you wanted, or if it's going to give you the opposite, an unexplainable malfunction in the system, resulting in images which defy logical explanation. Rafman, through his synthetic image works, frames this broken, imperfect world as exactly that: a world. He views synthetic imagery as constituting a new spatial frontier, like a video game world, which it is now up to anybody who dares to venture into it to see what can be extracted. The sense of the unknown when creating synthetic images is real and intense, every prompt feeling like an excursion into a deep ocean, where all manner of horrors could be lurking. However, there is also buried treasure, and if one is a fan of horror, then the horror itself can actually be the treasure. Shock value in synthetic images is huge, as their novelty value, being entertaining visual attractions, is surely one of the primary reasons why Rafman’s synthetic media works have been so successful.

And yet even more successful is Beth Frey, who essentially unlocked her own hidden talent for creating synthetic image works that are otherworldly and implacable, yet consistently stay on a visual theme that gives her work a sense of uniformity. Her endless army of muppet-like characters has invaded Instagram, garnering its own cult-like following. Her work surprisingly functions perfectly in conversation with Rafman’s, as Frey has the utmost determination to build a coherent synthetic world, in which she explores and documents for her over one-hundred thousand followers. She is, as Rafman might put it, like the Google Street
View Car, or alternatively, like the Kool-Aid Man in Second Life: a nomadic wanderer in a boundlessly absurd world, exploring it on her own will and documenting her discoveries. This kind of indulgence in the wondrous absurdities of the modern world seems to be the connecting point between these works, as our reality and our fantasies slowly begin to merge, facilitated by the awesome power of these technological tools.

Everyone, all around the world who is involved in artificial intelligence right now is wondering the same thing: what will the future hold? First and foremost, synthetic media is on its way to expand into video and audio, both of which can be considered as their own branching paths. Synthetic video appears to have the most potential of all, but with the presence of grotesque and strange imagery right now being extremely high, it still has a long way to go. However, as higher quality models become available, it would be reasonable to predict that increasingly creative uses of this technology will appear, and beyond the shadow of a doubt, I believe artists will embrace its shortcomings. The drive for artists to exceed the limitations of these technologies, and the acceptance of its failures, is the core of what fuels uncanny aesthetics: machines trying to do more than they are capable of. Automatons were, of course, unable to replicate human behavior, that is why Jenstch used them as his example. It is in these kinds of attempts by technology to mimic humanity that the uncanny relationship develops.

Synthetic audio, and especially synthetic music, could perhaps be the most uncanny of all, with AI replications of famous singers performing recognizable pop songs, the sense of the uncanny will continue to permeate popular culture for years to come. Imagine, the voices of dead historical figures, perfectly simulated with machine learning in such a way that you could experience the sensation of talking to say, Abraham Lincoln, or Martin Luther King Jr. Such an inevitable day will come, and when these synthetic voice models will inevitably fail, the sense of
an uncanny presence would be overwhelming. Combined with the already grotesquely fluid animation of synthetic video, there is a massive amount of potential for artists to create deeply unsettling works with new synthetic media. As seen in Cohen, Rafman, and Frey’s work, artificial intelligence’s attempts to portray the human body consistently are foiled by its limitations, and the grotesque, synthetic uncanny is the byproduct of these faults.

As mentioned in the first chapter, the potential technology of the future, which could bring all of these worlds together, is virtual and augmented reality. With today's continuously accelerating computer processing speeds, synthetic images will only take a shorter and shorter amount of time to generate, until very soon they could be able to be generated instantaneously. Integrated into a virtual reality or augmented reality headset would mean that one could exist, all throughout the day, in a completely synthetic world, or even stranger, a version of the physical world augmented by the synthetic. Already this technology is becoming available in the form of filters which use machine learning to take a photograph and convert it into a cartoon version of itself. This means, once again, that humanity may be approaching a moment in which the physical and the digital meet, resulting in stylized versions of reality, truly fusing together our unconscious fantasies, dreams, and desires with our waking reality. Kids in the future may be waking up, getting out of bed, and putting on their augmented reality headsets. Suddenly, their world has been synthetically augmented to look like a cartoon or a video game, like Pokemon or Sonic the Hedgehog. This meeting of the real and the imaginary is the promise of synthetic media, as its most greatest power is in its potential ability to create images which appear to us as real. However even in this future world, the uncanny potential of the synthetic world will surely still be lurking underneath the surface.
Witnessing the emergence of machine learning technology, artificial intelligence, and synthetic media, all just over my four and a half years at Bard, is something that I still cannot explain. I’ve witnessed a resurgence of the techno-futuristic optimism of the 1950s, as with AI it suddenly doesn’t seem so impossible that we might someday have flying cars, talking robots, or personal hoverboards. AGI, artificial general intelligence, in theory, could solve any problem that a human can, but what happens when it can solve even more? This is a new anxiety for my generation: the fear of a superintelligence. Would such a technology, if it was fully autonomous, assist humanity in accomplishing our goals, or would it destroy us? The even greater mystery is in what is being referred to as the “Singularity”, the hypothetical point at which technology gains the ability to improve its own self. Nobody really knows what would happen then, but surely humanity’s chief goal should be maintaining executive control over these systems, so that even with superintelligent capabilities, they would still simply be our tools to use.

What I look forward to the most, after everything, is the simple companionship that artificial intelligence may provide to humanity. The idea of loneliness being eradicated, that in the coming years, if one is feeling down and depressed, that there will be an artificially intelligent friend to talk with. Although to some this may sound dystopian, the world I envision is one of pure magic and wonder, with these technologies allowing humanity to return to our spiritual center, freeing us from our fears by providing us company, as well as services, security, and any other task with the express goal of keeping humanity happy. Imagine, an artificial intelligence showing mankind the way to universal love, transcendent joy, healthy lifestyles, good humor, the end of fear, and an unlimited source of positivity... Wouldn’t it be nice?
Everyone: AI art will make designers obsolete

AI accepting the job:

Fig. 19  A meme posted to Twitter / X by @kylelf_, November 23, 2023.

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