Generate Art | Style Transfer | Super Resolution | Gallery

Generate Art

Text Prompt

last photo on the earth

Quality

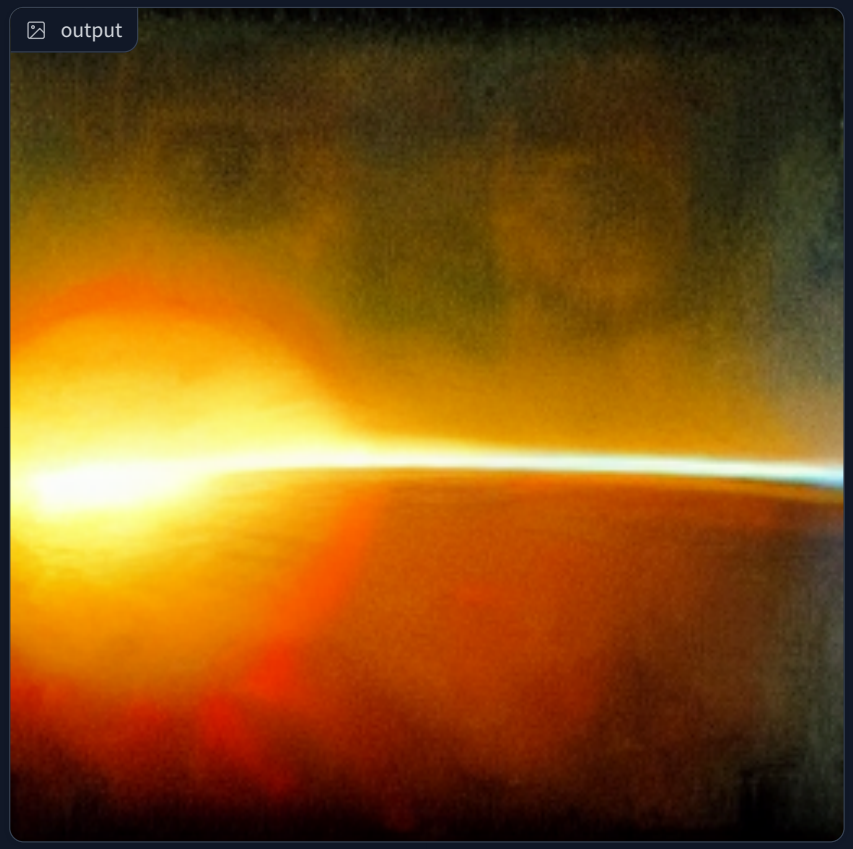
- (•) normal
- ( ) better

Resolution

- ( ) normal
- (•) better

Clear | Submit

output



Since prehistoric times, human beings have closely linked any and all forms of their work with some sort of artistic interpretation. Art, in all of its forms, plays a major role in how humans see and interact with each other and their environment. The earliest known examples of art are dated to 30000 BP, during the later stone age. This implies how art, in all its forms, allows us to express ourselves and take in perspectives that cannot be expressed via words. Ever since its inception, art has crossed any and all limitations, from physical to intangible forms, i.e., people of all cultures, races, and ethnicities have some form of message or interpretation of any kind of artwork in their respective culture. Art has not only influenced aesthetes and artists to make more of it but has also helped record major historic events and narratives of the past, that would otherwise be long lost to trivial human wars and natural calamities.

Over the years, the enduring appeal of art has changed from just admiration to articulation, intellectual contemplation, and depiction of the state of human society. However, the thing that abstract art stands for, which is triggering an emotional response from its viewers and letting them ponder about its meaning, is still very much intact. Abstract art doesn't necessarily depict anything that the real world has. It can simply be an expression of language or emotion using colors, patterns forms and styles. The best part about art is that all kinds of people experience it differently. One might simply admire the color schemes of a painting, while the other may look at the strokes and patterns it leads to. It starts out as a certain thought in the hands of the artist, and ends up as a completely different, unique thought in the eyes of the beholder.

No.5 by Jackson Pollock

Recent AI Breakthroughs

Although the role of AI in art creation and the relationship between artists and AI is still evolving, some very significant leaps have been made during the past decade, and remarkable feats like computers beating humans at image recognition, at complex games with a mathematically large amount of patterns and outcomes like chess and go, AI models generating text and artistic images have already been achieved. It's extremely intriguing how well AI can mimic and surpass human capabilities in the aforementioned activities.

Deep Learning

Deep learning is a subset of machine learning inspired by the brain's network of neurons. And while neural networks have been around for decades, one of the most well known advancements for deep learning happened in 2012, called the ImageNet Large Scale Visual Recognition Challenge (ILSVRC). It was a pivotal moment for the use of deep neural networks for image recognition.

Another famous model is Google's BERT, a language model based on transformers to help the search engine get better context around its users' searches. It was released in 2018 with 12 layers, 12 attention heads and 110 million parameters. Language models based on RNN faced issues like parallelizing and retaining contextual connections. Since context is key in NLP, BERT easily bypassed these problems, and the results were far better than the state-of-the-art RNN models. But this was just the beginning of transformer based neural networks, as Open AI's GPT-3 was shockingly good and even better than BERT.

GPT-3: AI gets language

On 11 June 2020, OpenAI released the biggest language model ever known, GPT-3 along with its API documentation. Trained on 175 billion parameters, which is 116 times more than it's predecessor GPT-2, the language prediction model has the capability to serve a wide range of purposes such as creating blog posts, advertisements, even poetry that mimics the style of famous poets like Shakespeare, Edgar Allan Poe, so realistic that it can easily be looked at as something written by an actual human being. It can even generate text summarizations and code. GPT-3 is trained to perform such tasks with small amounts of input text while maintaining context and producing large amounts of output.

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Around September 2020, The Guardian had used GPT-3 to write an article about AI being harmless to human beings. The article really shows its proficiency, and is a spectacle to witness in the world of language generation.

DALL-E: AI gets artsy

DALL-E is a multimodal implementation of GPT-3 with 12 billion parameters, which uses zero-short learning to generate images and art based on text prompts of descriptions and desired styles. Trained on text-image pairs from the internet, DALL-E creates multiple responses to any text input, and CLIP, an image recognition system, understands and ranks these images to associate the most appropriate image to the caption (text).

Generative Art

As inferred from Prof. Philip Galanter's paper, the term 'Generative Art' refers to the kind of art where the artist uses a system, like a set of natural language rules, a computer program, a machine, or other procedural invention, set into motion with some degree of autonomy contributing or resulting in a finished work of art. An autonomous system in the context of generative art is a system that is non-human and can independently determine features of an artwork that would otherwise require decisions made directly by the artist.

One of the first known examples of generative art is a musical game called Musikalisches Würfelspiel in which dice were rolled to randomly select already-composed fragments of music, which were strung together to form a finished piece. This game was played in Berlin in 1792, and has been attributed to the famous composer Wolfgang Amadeus Mozart, hence, this being the inspiration behind the model being named 'Mozart'.

Another example of generative art is the set of Italian Medieval town designs created by an architect named Celestino Soddu in 1987. He created a set of conditions where a random computer process could be set in motion to create a model of a town. The conditions were such that the final result would always be a town identifiable in the Italian Medieval style. Despite there being enough constraints on the models to keep them in this style, an essentially infinite number of models could be created.

As shown in the above example, the beauty of generative art is that the possibilities for creation are limitless. A process with certain conditions created by the user are set into motion and the element of chance creates the most intruiging piece of digital art.

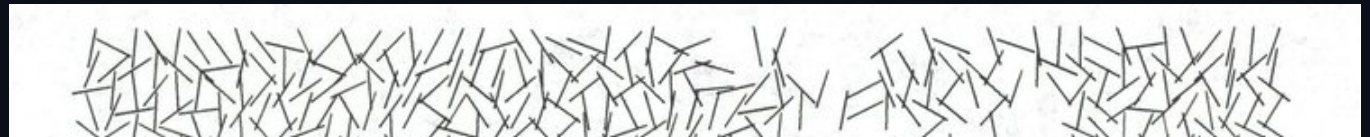
During the 1960s, when generative art became quite popular, famous digital artist Harold Cohen became interested in work by computer scientists at the University of San Diego. Programmers created a system on punched cards, fed those cards into a machine which would then return results via a set of newly punched cards, or prints. He applied this technology to computer-controlled drawing machines, which he called "turtles". Cohen

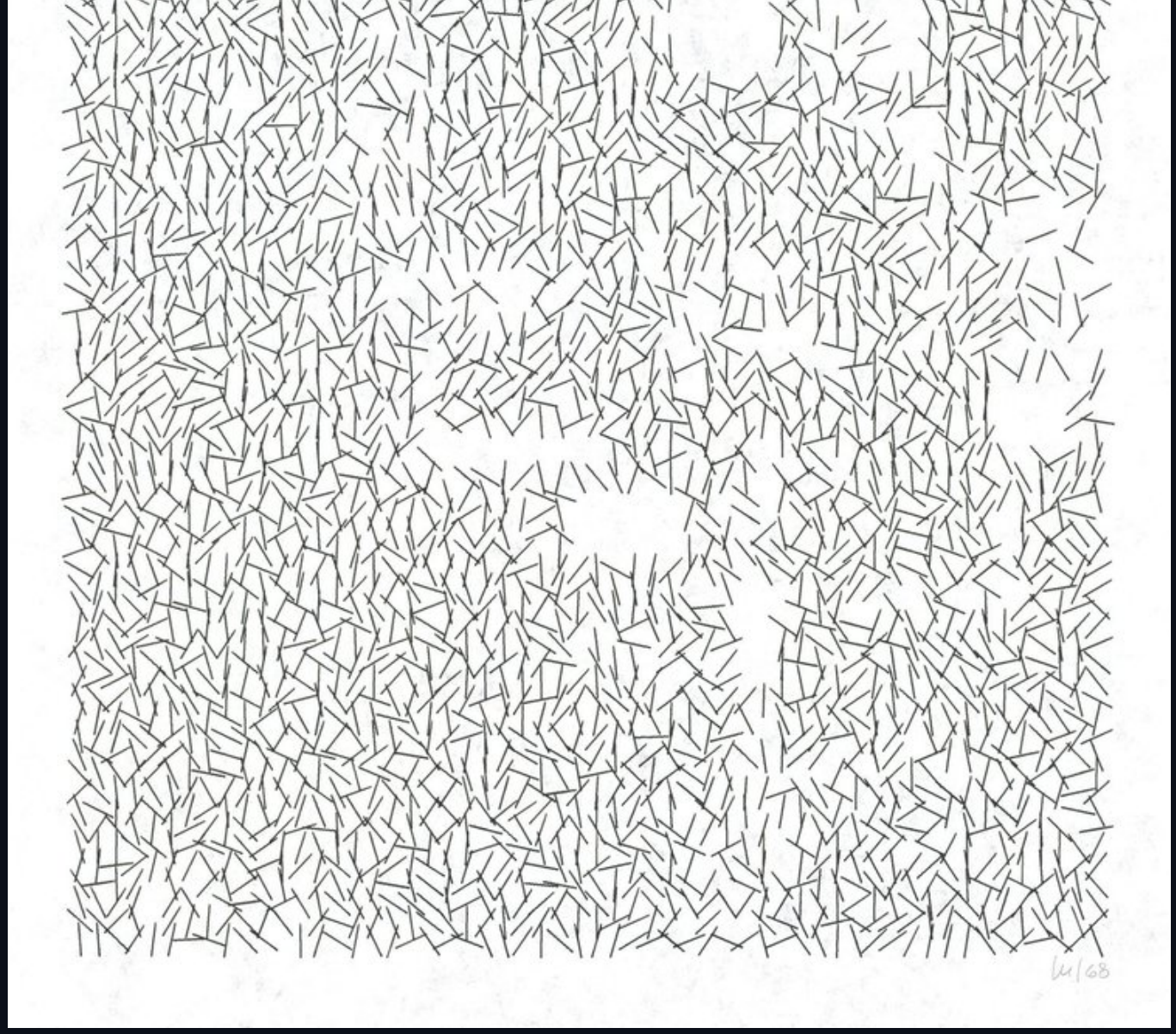
set of newly punched cards, or prints. He applied this technology to computer-controlled drawing machines, which he called "turtles". Cohen programmed the “turtles” to follow a set of processes which would lead to a piece of art being formed on canvas. His system, AARON, is one of the longest-running, continually maintained AI systems in history.

Detail from an untitled AARON drawing, ca. 1980.

However, Cohen has further explained in his paper - The further exploits of AARON, Painter regarding the artistic legitimacy and functions of what his system is exactly doing, and whether it's justified to call it 'creative'.

Another prominent artist named Vera Molnar, during the same time as Cohen, had been experimenting with creating images using "machine imaginaire", as she called it. She created a set of rules to paint a series of geometric images, allowing her to explore endless shapes and lines.





Interruptions - Vera Molnar