

Artificial Intelligence's impact on visual art

AI art in the past

Harold Cohen was one of the earliest practitioners of algorithmic art. He wrote the program AARON which was one of the first and most complex software programs for Artificial Intelligence generated art. Cohen's influence has changed how we now view and understand the interaction between art and technology. His influence has changed the way contemporary artists deal with coding as a creative language.

Before he dove into computer art, he was a successful visual artist. In 1968, Cohen left the London art scene to the US. He went to the United States due to an invitation to become a visiting professor at the Institute of Arts at the University of California, San Diego (UCSD). At that university was where he wrote his first computer program. According to Cohen, computer programming allowed him to use his brain in a completely new way.

The thoughts that he applied to painting had many similar thoughts to the way he thought when interacting with the computer. Coding followed the principle that works contained standards that Cohen instinctively followed, alike to how he would work while painting.

Cohen first exhibited his computer artworks in 1972, at the Los Angeles County Museum of Art.

Cohen became a programmer and also became an engineer as he built a machine that could draw and create works in real time. Cohen was invited to research at Stanford University Artificial Intelligence Laboratory. Here, Cohen accessed the most advanced equipment at the time. This allowed him to develop his learning. The result from Cohen using this equipment was AARON.



Image of Harold Cohen. The creator of the AARON program



Portrait of Edmond Belamy - The first AI generated portrait to be sold at auction

In 2016, AI was capable of image to text so people wanted to program the opposite, text to image. (Backward chaining.) They did not want to recast existing images that match the description (alike to what Google and other search engines do) they wanted to create a new image based on the text. To do this, they would insert text that the AI had not seen before. Such as a blue bus. It has seen a bus before and it knows the colour blue, that is how it knew what image to generate.

An auction in 2018 successfully sold the AI-generated artwork *Portrait of Edmond Belamy*. This is the first auction for an AI-generated portrait which had originally been expected to sell for \$5K-\$10K but sold for \$425K. The artwork was created through a Generative Adversarial Network (GAN) which is a class of machine learning where two neural networks contest against each other, learning through the process. Behind the artwork, three members of French art collective compiled and monitored images for the AI and Robbie Barrat created the program.

The Butcher's Son is a nude portrait that was generated from a data set of stick figures and pornography made by Mario Klingemann. Jerry Saltz criticized this piece and other AI-generated artworks.

Text	2016 image	Current date image
The grey bird has a light grey head and grey webbed feet		
A table with many plates of food and drinks		

Table displaying the improvement of AI image generation through 6 years

In an AI's attempt to recreate Andy Warhol's art style, it fails. This is because it has a lack of knowledge with colour theory. Where Andy Warhol clashed rich and loud primary colours against each other, the AI did not. This makes the polyptych bland compared to Andy Warhol's piece. When the AI attempts to paint an animal (in this case a tiger), it fails to convey the idea in a new, creative or interesting way. The painting is very generic not taking advantage of the threatening or graceful being of the tiger. The artist had taken patterns and the AI had used those patterns to filter them onto the tiger. Jerry Saltz describes how he believes that it is only the beginning, that the artist could push the AI further to test dynamics and more complex figures. Despite the amount of awards and popularity that *The Butcher's Son* had been awarded Jerry Saltz managed to critic the artwork with valid arguments. The aim of the artwork was to be pornographic, the artist did insert images of pornography into the generation. Saltz talks about how there was art of pornography in the past and shows how *The Butcher's Son* is a much more tamed and held in version. One artwork Saltz had criticised that the behind idea of the artwork was bland and boring. The input that the artist had to this AI generation was boring and unoriginal and that produced a boring and unoriginal outcome.

AI art in the future

Although it is impossible to predict what AI-generated art would look like in the future, there are a few things which are almost guaranteed. It is likely that AI art will continue to improve and eventually be indistinguishable from human-made art. The benefit of having a high infinite source of high quality art for any purposes isn't to be understated, even if it will disrupt multiple industries. It is likely AI will further improve to mediums of art other than drawing, such as designing sculptures, videos or even movies. More complex mediums of art can be made with simpler forms. An AI artist would only have to chain single images together to form a video or movie, and other AI can fill in the gaps with audio. The difficulty is that an AI would struggle to make a story using these images, and it is not unlikely that each frame would need their own specific prompt. To form flowing videos, the images would have to be very closely related, and would have to flow to each other feasibly, which AI will struggle with. As such, it will be a long long time before you can provide a single prompt to an AI to receive an entire movie, but it is likely soon that filmmakers or videomakers would use AI as a supplement for minor things like VFX.



Théâtre D'opéra Spatial by Jason Allen - An AI-generated artwork that won a state fair competition in Colorado.