AI-created works:
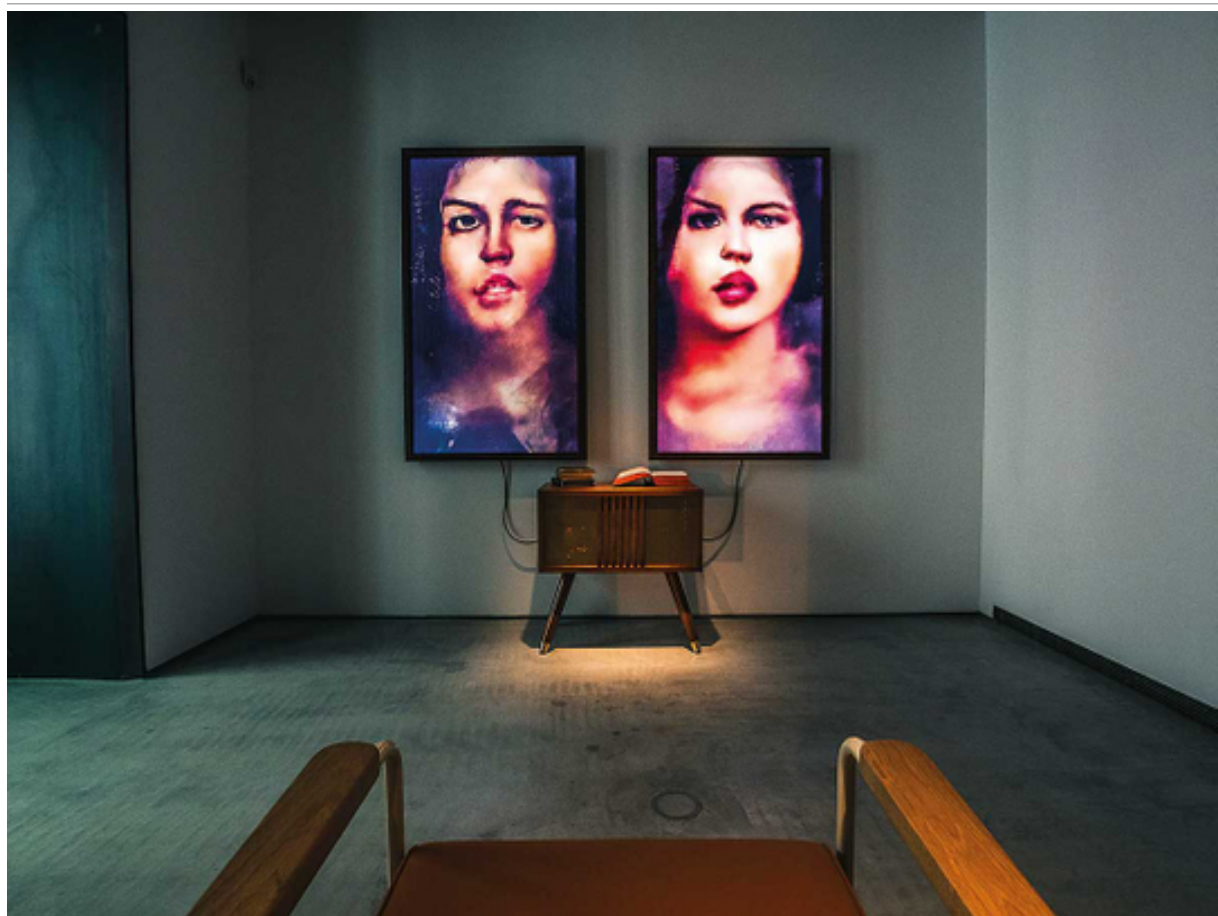# Knocking on the doors of high art

Artists and galleries are embracing artworks generated by machine learning algorithms

Weekend Review

Memories of Passersby I by Mario Klingemann

For years, the prevailing thought about artificial intelligence was that it isn't creative — and so we'll always have art to ourselves. Well, like every industry, technology has infiltrated the art world, allowing for an even broader palette for creativity. Now, artists whose preferred tools are artificial neural networks and code, are creating works using machine learning algorithms. But they aren't worried about being replaced by machines.

"AI has the potential to challenge current thinking about what art is, and what it can do. It is bringing new ideas into the field where certain areas seem to have become a bit stale and predictable," says Mario Klingemann, an artist-in-residence at Google Arts and Culture whose works have been shown at the Ars Electronica Festival, the Museum of

Modern Art in New York and the Metropolitan Museum of Art, among others. "AI art will become a long-term movement."

Last October, signalling the arrival of AI art on the world auction stage, a portrait of Edmond de Belamy in 16th-century style by Paris-based art collective Obvious, which later received heavy criticism for being not original, was sold for an incredible $432,500 at Christie's.

"Over the past years, AI art has matured to a point where we are starting to see quite a few museums, galleries and festivals exhibiting it and more relevant work being made with it — Edmond de Belamy of course not being one of them," says Klingemann, a pioneer in the field of neural networks and AI art who compared the AI-generated portrait "to a connect-the-dots children's painting" in an interview with the New York Times. "But now [after Christie's auction]," he adds, "AI artists like me are getting increased attention."

The Christie's auction is a part of a new wave of AI art moving rapidly and unceasingly into the world of high art for which some people pay serious money. "The high price is attracting all kinds of interest — from serious artists and commercial galleries to those who want to ride on the bandwagon," says Klingemann. "But I do not expect that the next AI artwork being auctioned to reach those kinds of levels."

He couldn't have been more accurate. In March, Sotheby's sold Klingemann's work, entitled Memories of Passersby I, for £32,000 — a lot less than the portrait of Edmond de Belamy — marking the second piece of AI art to be sold at a major auction house. Klingemann's work is a two video screens beaming an endless stream of images of distorted faces.

What lies behind this — and many other — recent AI art experiments is the use of generative adversarial networks (GANs), which when trained to produce portraits, for example, can turn humans into unsettling imagery. Artists even retrain them to recognise new patterns, unleashing seemingly limitless possibilities.

To Mike Tyka, an AI artist and sculptor who works with neural networks at Google and created a series of AI-generated portraits, including Portraits of Imaginary People, GANs is perfect as it can be trained on a dataset of real examples to create new, fake ones, which look nigh indistinguishable from the ones used to train the system. "I gathered thousands of public domain images of ordinary people from flickr and trained a GAN to produce Portraits of Imaginary People," says Tyka, whose portraits are both fascinating and a little disturbing. Needless to say, AI-generated art differs greatly from what we have come to expect from flesh and bone artists.

In the West, while artists have continually questioned what art can be — from the readymades of Marcel Duchamp to Tania Bruguera's Arte Útil — their experiment with new technologies — from Autotune to PhotoShop — have prompted backlash from critics who say they serve as crutches for less capable artists. Art created by neural networks and deep machine learning has been no exception.

Scoffing at the criticism, Libby Heaney, an artist working at the intersection of art and technology whose portfolio include creating a virtual persona to Lady Chatterley, eponymous heroine of DH Lawrence's novel, as a Tinder date, says artists have been using technology to create art for centuries — that the present isn't all that different from the past.

"This criticism suggests that 'good' art should only be made with traditional media such as painting, drawing and sculpture," she says.

"Technology is massively changing how people live all over the world. It would be quite strange and rather narrow visioned if artists did not use new technologies in their work," adds Heaney.

AI be should be seen as an opportunity that can impact fine art in fascinating ways for human artists, says Tyka. "Take photography, a then novel technology: the machine makes the picture. Naturally, the art world freaked out about this in the 19th century, claiming 'painting was dead'. But instead we now have fine art photography, nobody would claim it's not art, as well as everything from abstract to hyperrealistic painting."

Arguably, the world of art blossomed into abstract art and impressionism because of the arrival of an automated process to produce a picture, adds Tyka.

Machines have, it is true, been able to invent new works, but Jake Elwes, the AI artist behind Closed Loop, a recording of two AI models conversing with each other — one with words the other with images — in a loop, says the most interesting art comes when artists use AI techniques to create work that has "aesthetics as well as a conceptual depth."

"For work to stand the test of time it needs something more, in the same way artists like John Cage or Nam June Paik who were fascinated by the technology of their time were able to make incredibly powerful, conceptual and poetic pieces that did not lean too heavily on the technology being used," says Elwes, who was acknowledged with a commissioned AI project at the Zabludowicz Collection in London in March.

"In London we've built quite a lively community, mainly though Luba Elliot's Creative AI Meet-up, where we've been discussing these techniques and concepts for the last couple of years," says Elwes, adding that as much as he loves the aesthetic potential of GANs, he would be happy to see more work being made from other areas of AI such as audio generation, natural language processing and deep reinforcement learning algorithms.

The aesthetics of GAN-built artwork is pretty similar from piece to piece, artist to artist, says Heaney. "To me, it looks like they are applying similar PhotoShop filters. The early works, such as Jake Elwes's Closed Loop, are really important, but I would love to see different aesthetics and conceptual uses emerge. It would be very exciting for the 'art movement' to use this technology to propose alternative futures."

Refuting the claim that the AI art is made by a machine, without a human artist, Heaney says the creative process heavily involves the artist. "Many people do not realise the huge amount of human labour that goes into producing an artwork with machine learning. Humans code or select the algorithm, determine the data set for training, adjust the parameters of the algorithm to obtain the desired outcome and analyse it, and present them as artworks."

"Like all tools used for art," Heaney adds, "machine learning algorithms can be used for novel purposes, such as questioning how humans see the world by comparing it to how a machine sees the world, like in Memo Akten's Deep Meditation series."

AI provide a whole new dimension to art. Code is not the only element at play here, it is also the way artists control the whole process around it. Is it tempting then to call AI art a collaboration between two artists — one human, one a machine? "I see AI as a complex tool, that sometime seem to have creative capabilities. But then brushes and paint do also have certain emergent properties that are not always fully under the control of the artist and we wouldn't call it a collaboration. This might change in a few years when AI learn autonomously, but we have not reached that level yet," says Klingemann.

Although the current movement in art is careening towards a new world where machines are more autonomous than they have ever been, Tyka says, it's hard to imagine AI replacing the artists any time soon. "The machine's ability to produce millions of variants in a short amount of time is its own worst enemy. As we saw with Deep Dream, the first few images were amazingly novel, but it very quickly became kitsch — you get saturated and get bored with it."

"Humans will stay in the loop in the foreseeable future. What makes an art work an art work is the thought, choice and intention that goes into it; the message or thought contains the context in which it is speaking, the connection between the artist and the viewer," adds Tyka. Simply put, human creative achievement will not succumb to advances in AI.

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