MoMA Installation Marks Breakthrough for AI Art

“Right now we are in a renaissance,” says pioneering AI artist Refik Anadol.

Author: Brian Caulfield

AI-generated art has arrived.

With a presentation making its debut this week at The Museum of Modern Art in New York City — perhaps the world’s premier institution devoted to modern and contemporary art — the AI technologies that have upended trillion-dollar industries worldwide over the past decade will get a formal introduction.

Created by pioneering artist Refik Anadol, the installation in the museum’s soaring Gund Lobby uses a sophisticated machine-learning model to interpret the publicly available visual and informational data of MoMA’s collection.

“Right now, we are in a renaissance,” Anadol said of the presentation “Refik Anadol: Unsupervised.” “Having AI in the medium is completely and profoundly changing the profession.”

Anadol is a digital media pioneer. Throughout his career, he’s been intrigued by the intersection between art and AI. His first encounter with AI as an artistic tool was at Google, where he used deep learning — and an NVIDIA GeForce GTX 1080 Ti — to create dynamic digital artworks.

In 2017, he started working with one of the first generative AI tools, StyleGAN , created at NVIDIA Research, which was able to generate synthetic images of faces that are incredibly realistic.

Anadol was more intrigued by the ability to use the tool to explore more abstract images, training StyleGAN not on images of faces, but of modern art, and guiding the AI’s synthesis using data streaming in from optical, temperature and acoustic sensors.

Those ideas led him to an online collaboration with The Museum of Modern Art in 2021, which was exhibited by Feral File, using more than 138,000 records from the museum’s publicly available archive. The Feral File exhibit caused an online sensation, reimagining art in real time and inspiring the wave of AI-generated art that’s spread quickly through social media communities on Instagram, Twitter, Discord and Reddit this year.

This year, he returned to MoMA to dig even deeper, collaborating again with MoMA curators Michelle Kuo and Paola Antonelli on a new major installation. On view from Nov. 19 through March 5, 2023, “Refik Anadol: Unsupervised” will use AI to interpret and transform more than 200 years of art from MoMA’s collection.

It’s an exploration not just of the world’s foremost collection of modern art — pretty much every single pioneering sculptor, painter and even game designer of the past two centuries — but a look inside the mind of AI, allowing us to see results of the algorithm processing data from MoMA’s collection, as well as ambient sound, temperature and light, and ‘dreaming,’” Anadol said.

Powering the system is a full suite of NVIDIA technologies. He relies on an NVIDIA DGX server equipped with NVIDIA A100 Tensor Core GPUs to train the model in real time. Another machine equipped with an NVIDIA RTX 4090 GPU translates the model into computer graphics, driving the exhibit’s display.

“Refik is bending data — which we normally associate with rational systems — into a realm of surrealism and irrationality,” Michelle Kuo, the exhibit’s curator at the museum, told the New York Times . “His interpretation of MoMA’s dataset is essentially a transformation of the history of modern art.”

The installation comes amid a wave of excitement around generative AI, a technology that's been put at the fingertips of amateur and professional artists alike with new tools such as Midjourney , OpenAI's Dall·E , and DreamStudio .

And while Anadol's work intersects with the surge in interest in NFT art that had the world buzzing in 2021, like AI-generated art, it goes far beyond it.

Anadol's work digs deep into MoMA's archives and cutting-edge AI, relying on a technology developed at NVIDIA Research called StyleGAN. David Luebke, vice president of graphics research at NVIDIA, said he first got excited about generative AI's artistic and creative possibilities when he saw NVIDIA researcher Janne Hellsten's demo of StyleGAN2 trained on stylized artistic portraits.

"Suddenly, one could fluidly explore the content and style of a generated image or have it react to ambient effects like sound or even weather," Luebke said.

NVIDIA Research has been pushing forward the state of the art in generative AI since at least 2017 when NVIDIA developed "Progressive GANs," which used AI to synthesize highly realistic, high-resolution images of human faces for the first time. This was followed by StyleGAN, which achieved even higher quality results.

Each year after that, NVIDIA released a paper that advanced the state of the art. StyleGAN has proved to be a versatile platform, Luebke explained, enabling countless other researchers and artists like Anadol to bring their ideas to life.

Much more is coming. Modern generative AI models have shown the capability to generalize beyond particular subjects, such as images of human faces or cats or cars, and encompass language models that let users specify the image they want in natural language, or other intuitive ways, such as inpainting, Luebke explains.

"This is exciting because it democratizes content creation," Luebke said. "Ultimately, generative AI has the potential to unlock the creativity of everybody from professional artists, like Refik, to hobbyists and casual artists, to school kids," Luebke said.

Anadol's work at MoMA offers a taste of what's possible. "Refik Anadol: Unsupervised," the artist's first U.S. solo museum presentation, features three new digital artworks by the Los Angeles-based artist that use AI to dynamically explore MoMA's collection on a vast 24-by-24-foot digital display. It's as much a work of architecture as it is one of art.

"Often, AI is used to classify, process and generate realistic representations of the world," the exhibition's organizer Michelle Kuo, told Archinect, a leading publication covering contemporary art and architecture. "Anadol's work, by contrast, is visionary: it explores dreams, hallucination and irrationality, posing an alternate understanding of modern art — and of artmaking itself."

"Refik Anadol: Unsupervised" also hints at how AI will transform our future, and Anadol thinks it will be for the better. "This will just enhance our imagination," Anadol said. "I'm seeing this as an extension of our minds."

For more, see our exploration of Refik Anadol's work in NVIDIA's AI Art Gallery .

Original URL: https://blogs.nvidia.com/blog/2022/11/17/moma-ai-art/