

Artificial Intelligence, No Longer Sci-Fi

by Sophia Brueckner

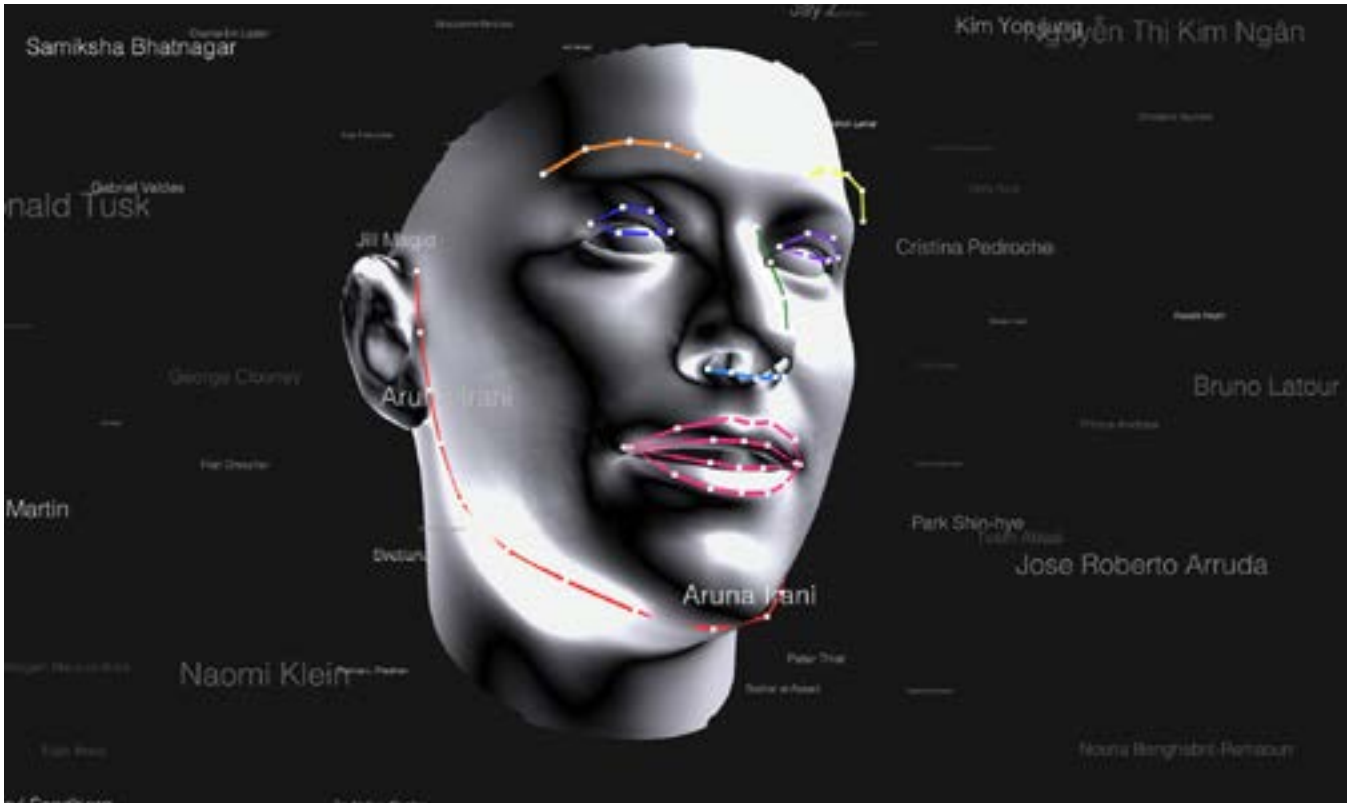


Image credit: Adam Harvey, 2019-2024 (ongoing) – <https://harvey.studio/exposingai>

Now that AI is no longer science fiction, how might embracing it, whilst recognising its limitations and ethical implications, enable new kinds of creative expression by artists and designers concerned with ethics, justice and sustainability? Futurist artist/designer/engineer Sophia Brueckner shares her thoughts on why artists and designers are necessary to critique and shape the future of AI, and why the reasons to question its use are the very same reasons why artists and designers should engage with it.

As a grad student at the Rhode Island School of Design (RISD) working on a Master of Fine Art (MFA) thesis about the blurring of boundaries

between human and machine, I wrote code to make art. Emulating my artistic process to write my thesis, I built my own dataset using the texts I researched and my own notes on those texts, in order to discover relationships in the dataset and output new text. I used the results of this process to write sections of my thesis.

All the reasons to question the use of AI are the same reasons why artists and designers should engage with it.

This upset my writing professor so much that she kicked me out of class and refused to read my thesis! She didn't consider this to be real writing.

But to me, working with a generative system that I had programmed myself to write my thesis felt natural and expressive. I wrote code, carefully selected the input data, curated my code's output, and iterated on this process until it represented my ideas about the relationship

The launch of ChatGPT, Midjourney and Dall-E have caused my art and design students to be fearful, angry and worried that AI will destroy their careers. Many of my artist and designer peers are similarly frustrated and flummoxed by this new technology. At the other extreme, technologists and entrepreneurs are enthusiastically hurtling towards AI, sometimes earnestly hoping to solve problems but more often with dollar signs in their eyes. AI is the new Space Race.

...technologists and entrepreneurs are enthusiastically hurtling towards AI, sometimes earnestly hoping to solve problems but more often with dollar signs in their eyes. AI is the new Space Race.

between humans and machines. In the maths world, an iterative algorithm is said to converge when, with more iterations, the output gets closer and closer to some specific value. Similarly, I iterated on my code's input and output until it converged on my creative voice. Working with AI could feel like this.

Sci-Fi prototyping for creative expression

For the past 13 years, I've taught a course on 'Sci-Fi Prototyping' to artists, designers, and engineers. Unlike my RISD professor, I encourage my students to explore ways of collaborating with technology as part of their creative expression. I always cover AI in my sci-fi course, but until recently my students felt disconnected from it, like it was too far in the future. That's no longer the case. AI has finally crossed over from science fiction to reality.

Trained as both a computer scientist and artist, I have one foot in each world. I too am hopeful, but I too am skeptical. Most of my creative practice uses technology in some way, and I critique the tech industry and its limited and often harmful visions for how we interact with technology. I'm not anti-technology, but I think it's important to imagine how technology could be used differently. So I see the very real possibilities for how AI can enable new kinds of creative expression, but I also see its limitations and ethical implications.

AI's affordances and limitations

Like all creative mediums, AI has both affordances and limitations. Painting landscapes was possible before the invention of the paint tube, but the invention of the paint tube made 'plein air' painting possible, broadening painting as a creative medium.

Before this advancement in materials science, painters had to grind pigments and mix paints in their studios and then use the paints immediately. The invention of the camera didn't kill drawing and painting. Instead it made photography, film, video art, the documentation of performance art, and even certain kinds of interactive art, possible. Similarly, the computer made new kinds of procedural/generative/interactive art possible, and AI gives artists and designers the ability to work with large datasets much more easily.

Dinkins' *'Not the Only One'* involves a chatbot trained on oral histories of members of the artist's family.³

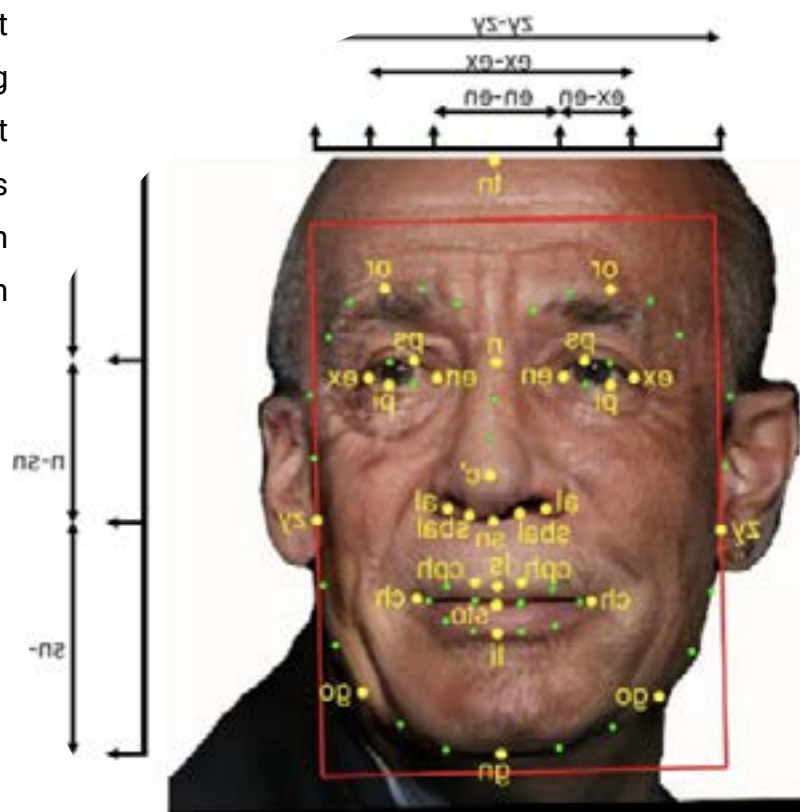
AI can also make it easier to interact with technology. Rebecca Fiebrien's *'Wekinator'* allows artists to more intuitively interact with computers with minimal coding.⁴ Sougwen Chung uses AI to draw and paint collaboratively with robots.⁵ Holly Herndon uses AI to allow other artists to use her voice and likeness in their own musical creations.⁶

AI makes us more aware of unethical mining of minerals required for computing. Should we be worried about where the minerals in paints or glazes, or other materials used by artists in their practice, come from too?

Artist Trevor Paglen's *'ImageNet Roulette'* is trained on the 'person' categories in a dataset called ImageNet, one of the most widely used training sets in machine learning research and development. By surfacing how AI classifies people, this artwork lets the training dataset 'speak for itself', and highlights why classifying people this way is at best unscientific, and at worst deeply harmful.¹ Similarly, Adam Harvey's *'Exposing.AI'* illustrates the flawed information supply chain behind global facial recognition technologies.²

The creation and curation of new datasets can become an act of creative expression and cultural critique. For example, Stephanie

While AI can be used for creative expression, there are many ethical considerations. AIs are often trained on content without its creators' consent or compensation.⁷



They are only as good as the datasets used to train them, are frequently biased,⁸ and AI models are now being poisoned by AI-generated content that will cause errors to build up over time.⁹

Is AI worth the energy?

The training and use of AI requires staggering amounts of energy. While individual consumers are being admonished to do things like turning off their lights to save energy, companies like Google and Amazon are buying and restarting nuclear power plants to fuel AI technologies.¹⁰ OpenAI has recently asked the government to build multiple 5-gigawatt data centers. Each 5-gigawatts requires the equivalent output of 5 nuclear power plants, enough to power an entire city or three million homes?¹¹ In addition to energy consumption, the computers required to do cutting edge AI need to be replaced every few years. They rely on the unethical mining of minerals and the unsustainable disposal of hazardous waste products.¹²

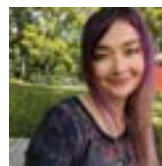
These computers also require enormous amounts of water to cool them. Currently, using ChatGPT to write one 100-word email uses the equivalent of a bottle of water.¹³ Anyone using AI for creative purposes should be aware of this. But this same awareness could also be applied to traditional media. For example, AI makes us more aware of unethical mining of minerals required for computing.

Should we be worried about where the minerals in paints or glazes, or other materials used by artists in their practice, come from too?

Why engage with AI?

All the reasons to question the use of AI are the same reasons why artists and designers should engage with it. Artists and designers are concerned with ethics, justice and sustainability. They understand how the process of making something affects its meaning, and are trained to think about how an interaction is influenced by its context (aka 'the big picture'). AI will transform some kinds of creative work, but creators should not fear it. Artists and designers are necessary to critique and shape the future of AI. Like every other creative medium, AI will be one of many tools that skilled artists and designers will learn to use expressively, intentionally and masterfully; with an understanding of its affordances and limitations. Artists and designers will use AI to critique AI but also, like how I used code to write my MFA thesis, as a way to iteratively converge on their creative vision.

Author bio



Sophia Brueckner is a futurist artist/designer/engineer who researches how technology shapes us. Currently an Associate

Professor at the Stamps School of Art and Design and Director of the Center for Ethics, Society, and Computing (ESC) at the University of Michigan she has been inseparable from computers since the age of two, and believes she is a cyborg. Sophia is the founder and creative director of Tomorrownaught, a creative studio focusing on speculative futures and sci-fi-inspired prototypes.

She makes both physical and digital artifacts combining software programming, digital fabrication, and electronics with traditional media. Since 2011, she has taught Sci-Fi Prototyping, a course combining science fiction, extrapolative thinking, building prototypes, and technology ethics at MIT, Harvard, RISD, Brown and the University of Michigan.

Cite as: Sophia Bruckner (2025). 'Artificial Intelligence, No Longer Science Fiction.' *The New Real Magazine*, Edition Two. pp 81-85.
<https://doi.org/10.2218/newreal.10935>

References:

1. Crawford, K. (2019) '[Excavating AI: The Politics of Training Sets for Machine Learning](#),' The AI Now Institute, NYU.
2. Harvey, A. (2021) [Exposing.ai](#).
3. Dinkins, S. (2018) '[Not the Only One V1. Beta 2](#),' [Example Projects](#), Wekinator.
5. Chung, S. (2025) [Sougwen Chung Artist](#).
6. Herndon, H. (2021) [Holly+, Holly.mirror.xyz](#).
7. Heikkilä, M. (2024) '[Four Ways to Protect your Art from AI](#),' Technology Review.
8. Buolamwini, J. (2024) 'Unmasking AI.' Random House.
9. Rao, R. (2023) '[AI-Generated Data Can Poison Future AI Models](#),' Scientific American.
10. Penn, I., et al. (2024) '[Hungry for Energy, Amazon, Google and Microsoft Turn to Nuclear Power](#),' The New York Times.
11. Belanger, A. (2024) '[OpenAI asked US to Approve Energy-guzzling 5GW Data Centers, Report Says](#),' Ars Technica.
12. Crawford, K. (2021). 'The Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence.' Yale University Press.
13. Verma, P., et al. (2024) '[A Bottle of Water per Email: the Hidden Environmental Costs of using AI Chatbots](#),' Washington Post.