

# Ethics in AI and Art

IAIFI, Cambridge Science Festival, and MIT Media Lab



Hope Schroeder

MIT Center for Constructive Communication

@schropes



# AI in the News

[← All Open Letters](#)

## Pause Giant AI Experiments: An Open Letter

We call on all AI labs to immediately pause for at least 6 months the training of AI systems more powerful than GPT-4.

Signatures  
**27565**

Add your signature

PUBLISHED  
March 22, 2023



≡ **TIME**

TRUMP'S INDICTMENT YOUR BIGGEST QUESTIONS, ANSWERED

SIGN IN

SUBSCRIBE FOR \$19

IDEAS • TECHNOLOGY

## Pausing AI Developments Isn't Enough. We Need to Shut it All Down

**Is AI coming for humanity?**

# AI in the Arts



Source: Google Brain

DALL-E, Stable  
Diffusion, Midjourney



# COSMOPOLITAN



Lifestyle

## The World's Smartest Artificial Intelligence Just Made Its First Magazine Cover



BY GLORIA LIU PUBLISHED: JUN 21, 2022

Lifestyle

# The World's Smartest Artificial Intelligence Just Made Its First Magazine Cover



BY GLORIA LIU PUBLISHED: JUN 21, 2022

## Beyond the headlines:

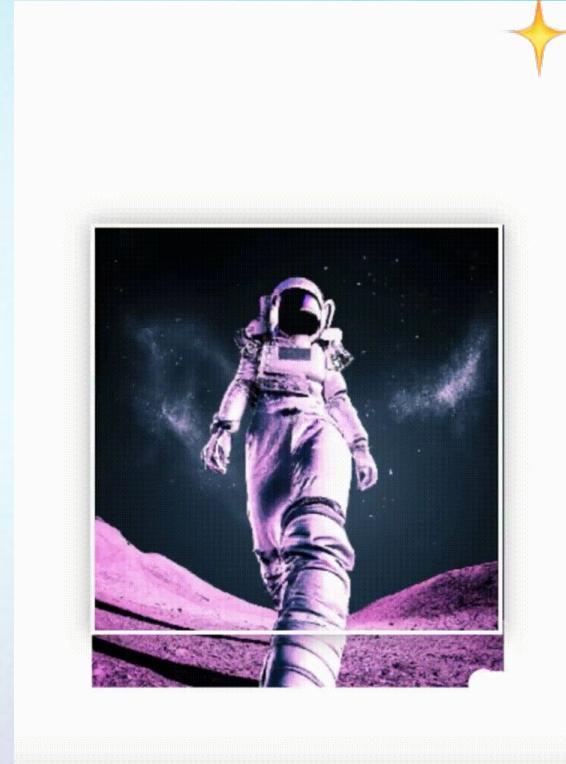
The artist is more involved than this makes it sound!



“Astronaut woman  
on Mars...”



Text to image AI model:



**The human artist  
created this  
cover with the  
help of a tool!**



**Is AI coming to take our humanity?**

**Or can we develop generative AI as a *tool* to  
express our humanity?**

# Overview of the session

15 min: Introduction with Carol

Activity part 1

15 min: Introduction to Ethics of Generative AI in the arts

Activity part 2

Share out and discussion!

# Activity Part 1: short poems

**This Is Just To Say**  
By William Carlos Williams

I have eaten  
the plums  
that were in  
the icebox

and which  
you were probably  
saving  
for breakfast

Forgive me  
they were delicious  
so sweet  
and so cold

**“Dreams”**  
**by Langston Hughes**

Hold fast to dreams  
For if dreams die  
Life is a broken-winged bird  
That cannot fly.  
Hold fast to dreams  
For when dreams go  
Life is a barren field  
Frozen with snow.

# **Activity Part 1: tune into your creativity**

Write a 4-6 line poem that can be shared with all ages

5 minutes of free writing on your own- no AI allowed!

My 5 minute “poem”:

End of summer light on the low boat, pollen pooling on top of the water next to me

I reach down and pull out a smooth fossil as the eagle soars over us

The shore is uneven and it will be hard to get out

I'll put the stone in your hand and you'll help me ashore

# **Activity Part 1: tune into your creativity**

Write a 4-6 line poem that can be shared with all ages

You could write about...

- Something beautiful you saw on your way here
- The funniest thing that's ever happened to you
- The way you hope to spend your next birthday

5 minutes of free writing on your own- no AI allowed!

Notes app or paper welcome :)

# Art and the science of generative AI

INSIGHTS | PERSPECTIVES

ARTIFICIAL INTELLIGENCE

## Art and the science of generative AI

Understanding shifts in creative work will help guide AI's impact on the media ecosystem

By Ziv Epstein<sup>1</sup>, Aaron Hertzmann<sup>2</sup>, and the Investigators of Human Creativity\*

The capabilities of a new class of tools, colloquially known as generative artificial intelligence (AI), is a topic of much debate. One primary application thus far is the production of high-quality artistic media, for visual arts, concept art, music, and literature, as well as video games. For example, diffusion models can synthesize high-quality images (1), and large language models (LLMs) can produce sensible-sounding and impressive prose and verse in a wide range of contexts (2). The generative capabilities of these tools have raised fundamental questions about how they affect the creative processes by which creators formulate ideas and put them into production. As creativity is reimagined, so too may be many sectors of society. Understanding the impacts of generative AI and making policy decisions around it—requires new interdisciplinary scientific inquiry into culture, economics, law, algorithms, and the interaction of technology and creativity.

Generative AI tools, at first glance, seem to fully automate creative processes, giving an impression that mirrors past instances when traditionalists viewed new technologies as threatening “art itself.” In fact, most uses of technology in art did not indicate the “end of art,” but rather pushed more complex effects, recasting the roles and practices of creators and shifting the aesthetics of contemporary media (3). For example, in 1948, some artists saw the advent of photography as a threat to painting. Instead of replacing painting, however, photography eventually liberated it from realism, giving rise to Impressionism and the Modern era. In 1990, some artists predicted that digital photography did not replace portrait painting. Similarly, the digitization of music production (e.g., digital sampling and sound synthesis) was deemed as “the end of music!” Instead, it altered the ways people produced and listened to music and helped spawn new genres, including hip hop and drum’n’bass. Like these historical analogies, generative AI is not the harbinger

of art’s demise, but rather is a new medium with its own distinct affordances. As a suite of tools used by human creators, generative AI is positioned to upend many sectors of the creative industry and beyond—this much is clear. One primary application thus far is the production of high-quality artistic media, for visual arts, concept art, music, and literature, as well as video games. For example, diffusion models can synthesize high-quality images (1), and large language models (LLMs) can produce sensible-sounding and impressive prose and verse in a wide range of contexts (2). The generative capabilities of these tools have raised fundamental

“...generative AI is not the harbinger of art’s demise, but rather is a new medium with its own distinct affordances.”

questions about how they affect the creative processes by which creators formulate ideas and put them into production. As creativity is reimagined, so too may be many sectors of society. Understanding the impacts of generative AI and making policy decisions around it—requires new interdisciplinary scientific inquiry into culture, economics, law, algorithms, and the interaction of technology and creativity.

To properly study these themes, it is first necessary to understand the unique ways people perceive AI affects perceptions of the technology. The widely used term “artificial intelligence” might misleadingly imply that these systems exhibit human-like intent, agency, or even self-awareness. Natural language processing (NLP) models, for example, generate AI models, including chat interfaces that use the “I” pronoun, which may give users a sense of human-like interaction and agency. These perceptions can undermine credit to the creators who labored to produce the system output (4). It is important to deflect responsibility from developers and decision-makers when these systems cause harm (6). Future work

is needed to understand how perceptions of the generative process affect attitudes toward outputs and authors. This could facilitate the design of systems that disclose the generative process and avoid misleading interpretations. Generative AI models also pose challenges in turn giving rise to new aesthetics that can have a long-term effect on art and culture. As these tools become more widespread, and their use becomes commonplace (as with photographs in 1948) (9), it remains to be seen exactly how the aesthetics of their outputs will affect artistic outputs. A low barrier to entry for generative AI could increase the overall diversity of artistic outputs by expanding the set of creators who engage with artistic practices. At the same time, the aesthetic norms and biases embedded in the training data might be captured, reflected, and even amplified—thereby decreasing diversity (7).

AI models can also feed future models, creating a self-reinforcing aesthetic flywheel that could perpetuate AI-driven cultural norms. Future research should explore ways to quantify and increase output diversity and study how generative AI tools may influence aesthetics and diversity.

The unique engagement-maximizing recommender algorithms of social media platforms could further reinforce aesthetic norms through feedback loops (8) that produce sensational and shareable aesthetic content. As algorithm and creator try to maximize engagement, this may become further homogenize content. However, some preliminary experiments (9) suggest that incorporating emersion, or the ability for users to generate uncurated content can, in some cases, diversify content. It remains an open question what styles are amplified by recommender algorithms, and how that prioritization affects the types of content creators make and the types of work accepted by the complex, dynamic systems formed by the interplay between generative models, recommender algorithms, and social media platforms, and their resulting impact on aesthetics and diversity.

Generative AI’s reliance on training data to automate aspects of creation raises legal and ethical challenges regarding authorship and thus should prompt technical research and policy development. The goal must be to weigh and balance the benefits to creators, users of generative AI tools, and society when these systems cause harm (6). Future work



Downloaded from https://www.science.org on June 15, 2023

Epstein, Ziv, Hertzmann, Aaron et al. *Science* 380.6650 (2023): 1110-1111.

Media Lab collaborators: Ziv Epstein, Rob Mahari, Matt Groh, Hope Schroeder

## Four main areas:

- Aesthetics & culture
- Legal issues
- Creative Labor
- Media Ecosystem

Massachusetts Institute of Technology, Cambridge, MA, USA. \*Adobe Research, San Francisco, CA, USA; University of Washington, Seattle, WA, USA. Corresponding author: ziv@mit.edu. Author contributions: All authors contributed equally to this work. Co-authors and affiliations are listed at the end of this paper.

# Art and the Science of Generative AI

## Aesthetics & Culture



### Discuss

- Is this AI-generated?
- What is informing your perception?

# Art and the Science of Generative AI

## Aesthetics & Culture

### **Key questions:**

How can we make sure that AI art tools lead to more artistic diversity,  
rather than less diversity?

How will AI-generated content be “rewarded” on social media?

# Art and the Science of Generative AI

## Legal Issues & Ownership



Joe Kachnic, ArtStation

HO

Write me a short 10-line poem in the style of Dr Seuss about black holes!



In a cosmic ballet, where stars brightly gleam,  
Lies a mystery profound, a celestial dream.  
Black holes they're called, a mysterious sight,  
They gobble up matter, and swallow up light.

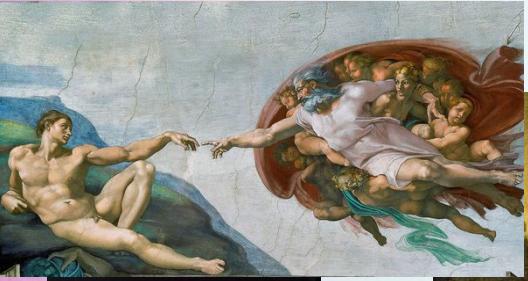
With gravity's grip, they whirl and they twirl,  
A cosmic dance, in a cosmic swirl.  
They warp space and time, in a cosmic trance,  
A cosmic phenomenon, a mesmerizing dance.

A point of no return, where secrets unfold,  
Invisible wonders, a tale to be told.  
They're a puzzle unsolved, a celestial quest,  
These black holes, my friend, are the universe's best!



# Art and the Science of Generative AI

## Legal Issues & Ownership



DeviantArt

# Art and the Science of Generative AI

## Legal Issues & Ownership



**AI cannot hold copyright!**  
(Edmond De Belamy case)



**Style change may not be enough to be considered “transformative fair use”**  
(Warhol Supreme Court case)

# Art and the Science of Generative AI

## **Legal Issues & Ownership**

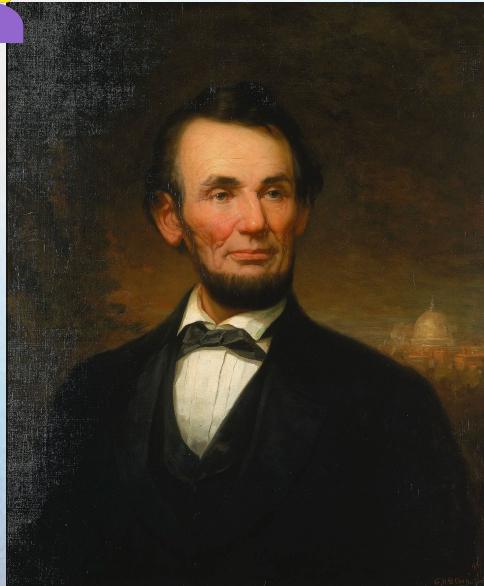
**Key questions:**

Will courts rule in favor of artists or users of the technology?

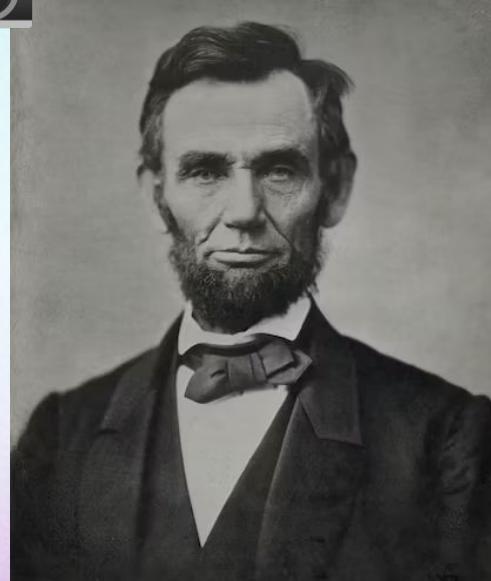
What constitutes “fair use”?

# Art and the Science of Generative AI

## Creative Labor



SAAM



Library of Congress

# Art and the Science of Generative AI

## Creative Labor



Allen J. Schaben / Los Angeles Times

Writers Guild of America  
tentative agreement: (today!)

- Writers can't be forced to use AI
- Companies must **disclose** if any materials given to a writer were AI-generated
- Writer can use AI if they disclose and a company consents

# Art and the Science of Generative AI

## Creative Labor

**Key questions:**

Can AI tools positively impact artists?

How can we protect artistic labor as the role of the artist changes?

# Art and the Science of Generative AI

## The Media Ecosystem



**Is this art?**

**Is this fake news?**

Midjourney,  
posted on Reddit by  
[u/trippy\\_art\\_special](#)

# Art and the Science of Generative AI

## The Media Ecosystem



Time

# Art and the Science of Generative AI

## The Media Ecosystem

### Biometric-based forensic tools

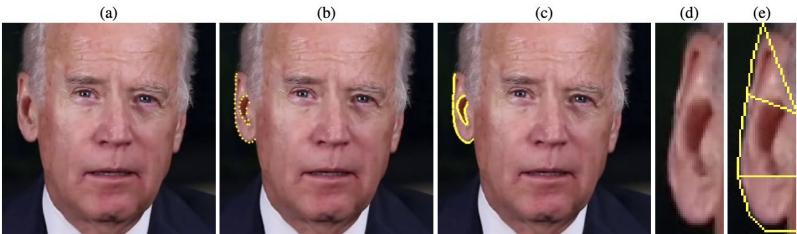


Figure 4. Shown are (a) a single video frame where the face has been tracked, aligned, and cropped; (b) 35 manually annotated aural landmarks; (c) 100 points on each of two Bezier fitted curves; (d) rotated and cropped ear; and (e) three regions from which local aural motion are averaged.

Agarwal and Farid “Detecting deep-fake videos from aural and oral dynamics” 2019

### Identity-based forensic tools

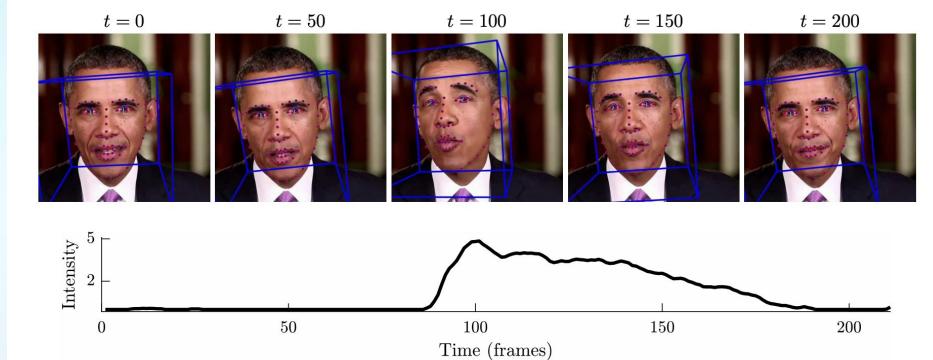


Figure 1. Shown above are five equally spaced frames from a 250-frame clip annotated with the results of OpenFace tracking. Shown below is the intensity of one action unit AU01 (eye brow lift) measured over this video clip.

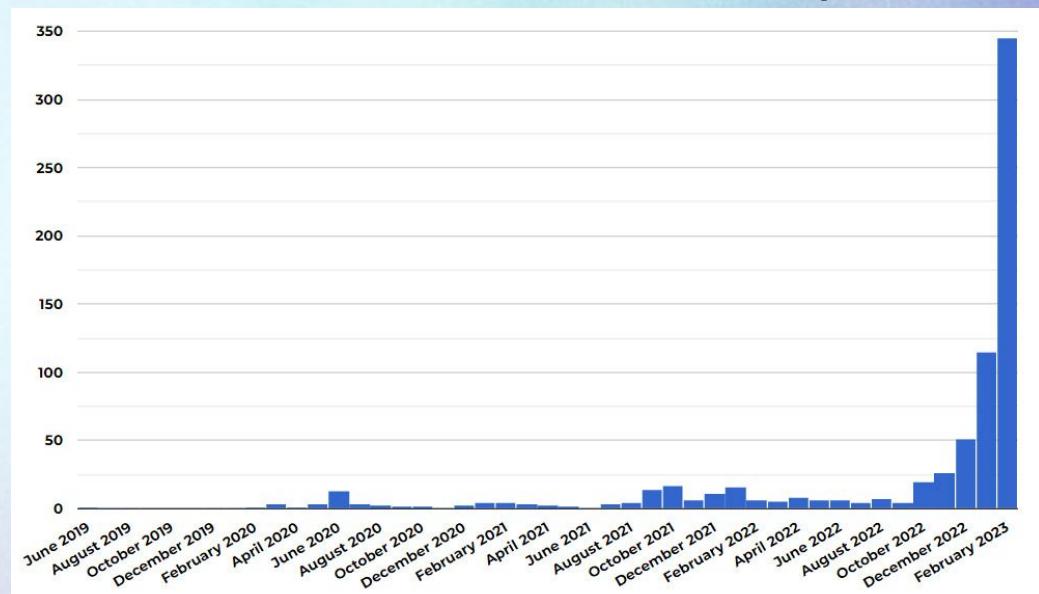
Agarwal and Farid “Protecting World Leaders Against Deep Fakes” 2019  
Boháček and Farid “Protecting world leaders against deep fakes using facial, gestural, and vocal mannerisms” 2022

# Art and the Science of Generative AI

## The Media Ecosystem: writing



User bans due to bot activity



# Art and the Science of Generative AI

## The Media Ecosystem

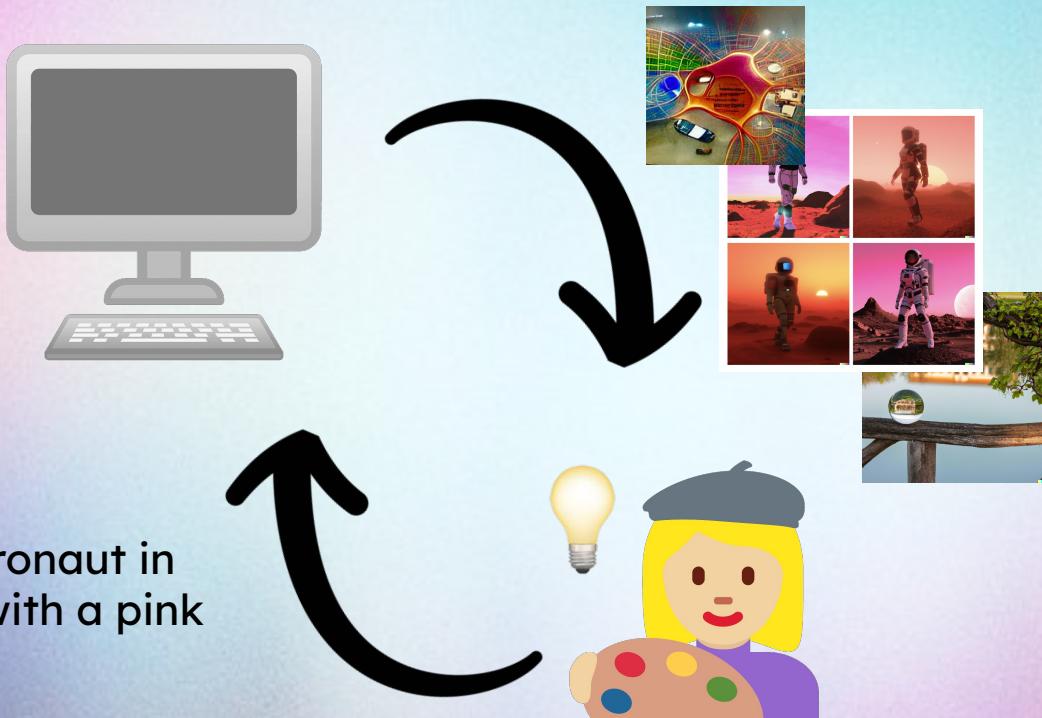
### Key questions:

How can we detect synthetically generated media?

How can we establish and defend trust in different types of media?

What is the role of **disclosure** in promoting trust?

# Co-creation: Humans use AI tools for image creation



## Why AI?

- Creativity can feel more **accessible**
- Ideation may be **faster**

# Co-creation: Humans use AI tools for writing

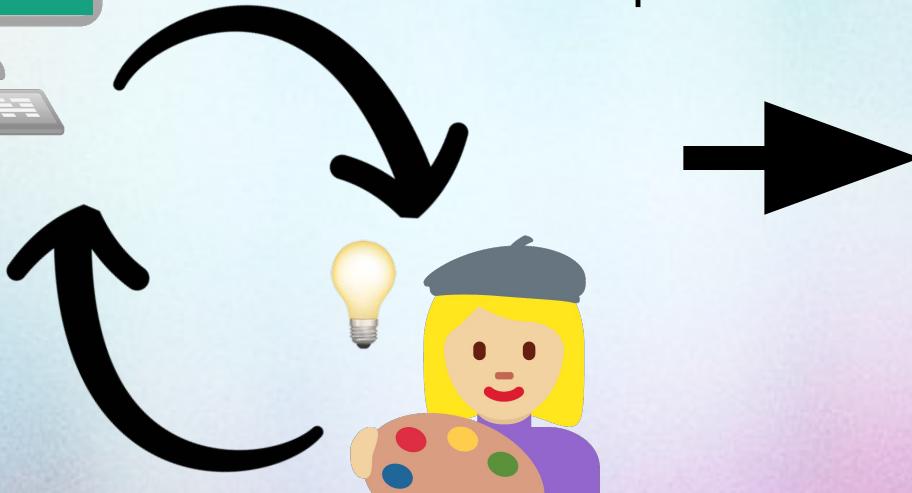


New ideas  
Edits (accept or reject)  
Lateral concepts



**Final Draft**

“Poem about a  
black hole...”



# **Activity Part 2: develop your draft**

Return to your first poem draft,  
and complete the activity described in this survey:

(<https://forms.gle/Mq3Y4oGnDVqWxnRE7>)



## **Steps:**

- Survey consent for research
- Reflect on your first draft
- Improve on your draft
- Finalize

# Share

First, read your poem. We will clap!

Then, disclose any help from ChatGPT on:

- Editing
- New ideas
- Structure
- New lines
- Anything else you found interesting!

## Take home:

**Human control and expression**

can be at the center of

co-creation with AI tools

Please submit your survey to us, either online or in person. Thank you!

# Related Work at the Media Lab

## AI Alchemy

### *Co-creating Utopias*



Epstein, Ziv, Hope Schroeder, and Dava Newman. **When happy accidents spark creativity: Bringing collaborative speculation to life with generative AI.** *International Conference on Computational Creativity*, 2022

### *Trash to Treasure*



Smith, Amy, et al. **Trash to Treasure: Using text-to-image models to inform the design of physical artefacts.** *AAAI Creative AI Across Modalities Workshop*, 2023