Good morning and welcome to our session “No Thoughts, Just Vibes: Interrogating Algorithms Through Art & Information Literacy.” My name is Mimosa, and I’m pleased to introduce you to my three fellow panelists, Stephanie Grimm, Maggie Murphy, and Mackenzie Salisbury.

Today, we will be discussing the ways that arts’ based research—and the strategies for instruction in relation to arts’ based inquiry—coincide, collide, and connect to literacies regarding algorithms. We inhabit a space that grapples with problem, gaps, and possibilities. We are inspired by the work of Safiya Noble. In her 2018 book *Algorithms of Oppression: How Search Engines Reinforce Racism*, Noble writes about how mathematical formulations undergird decisions frequently automated. However, these formulations are designed by human. Rather than being benign or objective, algorithms are processes and rules with distinct choices used to solve problems.

Over the course of our presentation, we will discuss how algorithm are increasingly influencing visual culture. We’ll also delve into how discussions of algorithms in the classroom impact students’ creative practice, and in turn, how we incorporate curiosity about algorithms into library instruction.
Today, we will be discussing the ways that arts’ based research—and the strategies for instruction in relation to arts’ based inquiry—coincide, collide, and connect to literacies regarding algorithms. We inhabit a space that grapples with problem, gaps, and possibilities. We are inspired by the work of Safiya Noble. In her 2018 book *Algorithms of Oppression: How Search Engines Reinforce Racism*, Noble writes about how mathematical formulations undergird decisions frequently automated. However, these formulations are designed by human. Rather than being benign or objective, algorithms are processes and rules with distinct choices used to solve problems.

AI, or artificial intelligence
What do we mean by algorithms?

According to the Merriam-Webster dictionary, algorithms are defined as “a procedure for solving a mathematical problem in a finite number of steps,” often with repetitions of an operation.

Other uses:
- Search algorithm (determines what types of data are retrieved)
- Encryption algorithm (a set of rules for encoding information)

On AI (Artificial Intelligence): Machines that perform tasks requiring human intelligence, especially when machines learn from data how to do those tasks. It’s a system for making predictions, recommendations, or decisions influencing real or virtual environments. Ultimately, AI is “an idea, and one that is evolving and also suffused with cultural meaning and significance that even its most professional applications cannot be ignored.” (Cox and Majumdar)
“Hidden Picasso”
Herring

How does our need to use machines to response to arts’ research co-exist/coincide with new technologies?

(and what can we as knowledge workers do to create curiosity and a willingness to see the creative nihilism of what we share?)

Art historian Sonja Drimmer has written about the ways AI has hijacked her field (see “lost lover of Modigliani,” or “hidden Picasso nude”). What is this plenitude we’re seeking that hasn’t surfaced before? In the case of the Picasso, companies like Oxia Palus use technologies to “read” the original work of art, break it down into miniscule pieces, and then extrapolate from them to create another familiar (but not real) work that effectively creates content in the same style. Drimmer wisely articulates how the panic around using technologies to reinscribe and underwrite humanities’ inquiry is a claim to legitimacy amidst a rapidly shifting landscape that devalues this vital scholarship. Quote: “At their core, art historians study the ways in which art can offer insights into how people once saw the world. They explore how works of art shaped the worlds in which they were made and would go on to influence future generations.”

It’s now 2023. The latest version of ChatGPT haunts instructors and TAs awaiting what their students’ assignments might look like. Amidst the panic are library workers like you and me, recognizing and remembering that we’ve seen this before. New technologies promise another, better vibe. As guides, as people who deeply care about information literacy, what can we do to effectively address and critique the forms of knowing while promoting playfulness and speculation around what else these shiny tools can do?
Good morning! For this section of the panel, I’m going to look a little more broadly at artificial intelligence—not specific algorithmic processes—and how artists work in conversation with machines. I will also open with a note on the very, very strong limits of my technical knowledge in this field, but as someone who is learning how to ask these questions through others, including folks like Maggie and some of the artists I’ll be citing later.

Context: GMU is a public R1 institution with a growing School of Art doesn’t have individual specializations at the undergraduate level - we offer a BA, BFA, and certificates—but we have a large number of students coming in with interests in comics, illustration, graphic design, photography, and computer and game design, in addition to other “traditional” areas of fine art. In these courses, they may be engaging with digital technologies and media—and, if your situation is like mine, you’ve already had at least a handful reach out with research paper questions about artificial intelligence and copyright.
How can we help students prepare to enter conversations about (and with) AI?

So how can we help students to be ready to engage with this rapidly-changing topic? Rather than reacting to each new iteration of technology, like the latest release of ChatGPT, I wanted to think about ideas, artists, and questions that we could bring into the classroom that would help prepare students, whether or not they choose to work with AI technologies.

A quick note too, this is not a street-tested assignment! Hoping to teach it soon.
• What are the ways of seeing, decisions, habits, and biases that you bring into your artistic process?
• How do you learn how to see, classify, and make sense of new information?
• How does this differ from the ways that machines (including AI tools) see, learn, and make?
• What does it mean to make work with a machine that sees things differently?

I want to find a way for students to think about what it means to make art—their ways of seeing, their decisions, and habits, and all the biases and perspectives they bring into the process. How do you reference other artists? When you say you’re “inspired by” another artists’ work, what do you mean? We can ask students to apply those same questions to machine learning. How do you think machines learn to “see”, or decide where to draw inspiration? If students decide to work with generative AI tools, like Dall-e 2 or Midjourney or StableDiffusion, or start training their own AI systems, is that a work of collaboration?
a camera that is scared of its own reflection, dall-e 2, March 15 2023

Part of this is asking students to reflect to understand how they learn and classify information, to better think about how these technologies “see” and learn and classify information. Scientists and programmers often use language that likens machine vision and learning to human vision: they “see images in ways similar to humans,” or they “emulate human thought.” Is this really true?
“In much of the popular literature on neural networks, they are posited as dreaming, or as imagining images. But we don't solely "dream up" images in our mind from some thick, gooey subconscious—and neither do these networks. **We actively generate images through our biases, our memories and histories, our styles of narrative, our traumas.**”

Nora N. Khan, *Seeing, Naming, Knowing*
Artists have been questioning algorithmic vision and logic for years, before the proliferation of these new, broader generative AI. For example, for the first in her series *Us, Aggregated*, artist Mimi Onuoha uploaded images of herself and her family to Google, looking at how it classified those images and how it identified “similar” photos. Onuoha also invited visitors to this exhibition to upload images of their own families. (The site is no longer active, but an archived version can be viewed here: https://web.archive.org/web/20180806155707/http://usaggregated.digital/ Onuoha also discussed this work for the University of Pittsburgh’s Year of Data and Society – see an overview and recording of her talk here.)
There’s also the example of artist and developer Tom White, who trained neural networks using sets of everyday kinds of objects - rotary fans, rulers, sewing machines–and designed a drawing system for the machine to create a new, “consolidated”, abstracted image. The results read as visually abstracted to human viewers–but they remain readable and understandable to other machines. (See Martin Zellinger’s article about this work in the March 2023 issue of *Leonardo*, “The Politics of Visual Indeterminacy in Abstract AI art.”)
Entering the Conversation

How do artists talk to each other?

How do artists talk to machines?

How do machines talk to each other?

Returning to my original question of “how can we prepare students to talk about (or talk to) AI”, we could put this more directly into the language of the framework, of “scholarship as conversation” but how does AI throw this for a loop? What does it mean when one of the conversants is a machine? Artists like Onuoha and White show us some of that potential—and through their projects, they reveal more about how these systems operate than we might get by reading lines of code ourselves. Can we bring some of that into the classroom?
While I haven’t had a chance to teach this yet, this is a rough lesson plan that might start to introduce these questions in the classroom or studio space.

Students work with an existing work of their own and try to replicate the creation process using AI. Ask students to reflect on the questions they were thinking about when making the work; what ideas, artists, or images they referenced (directly or indirectly). Based on that reflection, students will then write a prompt that they might want to use generate a new or similar work using a generative AI tool.

Ask students to reflect on the results. How does their work differ (or look similar) to the AI work? Can they understand how or why it made certain decisions? Do they recognize any of their own influences in the AI work?

Finally, students use the “new” image to feed into another form of AI – Google’s reverse image search or Google Lens – and see how those machines talk with each other. Wha affinities does it find with other works?

(Did these tools reveal anything that you didn’t notice about your own work? Or did its decision-making seem informed by something else?)

During testing, most of my Google Image results were sales pages
In the absence of student work, I decided to test this using one of my older illustrations. For this, I was commissioned to create a few promotional illustrations for a friend’s book release, featuring her cat, and visually based on elements from the book cover’s design, created by Lauren Peters-Collaer – specifically, its Escher-esque “portal”.

I took the basic language from this commission: “Can you draw miette jumping through the Portal?”, and went back to the original sketches and images. We wanted it to be a little a few expanded pieces of text: “ragdoll cat jumping through a hoop, surreal, with pink and blue clouds”, and other terms like “vaporwave”, “watercolor”, “soft illustration”)
These were the first round of results from DALL-E2. They’re strange and surreal and, to be totally honest, I love them. They fit with the strangeness of the book, like Lockwood’s “collective mind” collaged a Quizno’s ad with a Claire’s catalog. They are very strange, though - not at all the slick surface we’ve seen in recent examples.
Maggie (Murphy) then ran a variation on the prompts through another generative AI, Midjourney, which produced startlingly different results. At first glance, these are intriguing: they have a more unified look than the previous results, a little slicker, but still with those hallmarks of early gen AI. On closer inspection, one cat has a floating third paw; clusters of rainbow ponytail ties fall from a cloud.
Different media emerge: some look more like digital marker illustration, others clearly mimic watercolor.
When bringing the AI image back to Google Lens (the new default web-based image search), it seemed to recognize the position of the cat and the hoop…but it also really wanted to sell me posters.
Whereas the “traditional” Google reverse image search seemed to capture the colorways and broader shapes of the work, but didn’t recognize the cat.
The Midjourney image had quite different results—fewer cats, more rainbows—but it also did something surprising. Even though the prompt did not include an explicit mention of the cat's name, the author's name, or the book title—Google Lens connected the Midjourney AI image back to my original drawing. Was that worked used to train the Midjourney algorithm? Did this collective mind know something more than we expected? Or— the more painful idea to reflect on—was my original idea such a direct response that it's not surprising to see an AI generating something so similar? What did this reveal about my own propensities and approaches to image development?
Students reflect on:

- What processes or decisions are intentional when you’re making work? Which are less obvious?
- What biases or habits do you bring to your creative processes? How could those be amplified or challenged by algorithms/AI?
- What does it mean to make work “in conversation” with AI? Are you ceding control, or working with a new tool? Is AI a collaborator or an interloper?
- Who is doing the most talking?
Suggestion algorithms + creative discovery

Maggie Murphy [she/her]
Visual Art Librarian
UNC Greensboro University Libraries
For artists, non-purposive browsing in GLAM collections can result in serendipitous encounters with unexpected inspiration.

Although they are curated by people with a range of biases, the organizational schemes of print collections do not dynamically adapt to user behavior.

What you see next while browsing is based on what you choose to pick up next (human agency).

I try to remember to take photos of the chaotic book carts after class when I take students on browsing expeditions.
For social media users, “searching for inspiration”¹ is a top motivation for engaging with visual platforms.

Although Instagram content is uploaded by a diverse range of users, its “Explore” feed is curated by deep-learning recommendation algorithms that learn from context, content, and user behavior.

What you see next while browsing is based on what you interacted with previously (techno determinism).

¹ Marcella-Hood & Marcella, 2022
Discovery feeds are so compelling because they show us content we haven’t seen before that fits in with our established or preferred vibe/aesthetic…

But: if these algorithmic feeds are our sole, or even dominant, source of inspiration as artists or creators, how will we discover new ideas and styles?

I want students to critically examine suggestion algorithms from a variety of angles, including:
- Developing skills and dispositions for non-algorithmic browsing of visual material to complement their digital inspiration-seeking
- Investigating the affective dimensions of why algorithms that show us more of what we like are so addicting, and the relationship of artists to what they might define as their style or aesthetic
Sarah Frost, Manu Mathew Thomas, and Angus G. Forbes, Art I Don’t Like, 2019.

Art I Don’t Like was an artistic intervention “emphasize[d] the introduction of disparate content” in response to the proliferation of suggestion algorithm recommender systems.

Described as an “automated confusion system,” Not For You is a browser extension “designed to mislead TikTok’s recommendation algorithm, making it possible to see how TikTok feels when it’s no longer made ‘For You.’”

https://bengrosser.com/projects/not-for-you/
• Interrogating practical, creative, ethical, and philosophical relationships between artists and algorithms, including using algorithms to create art and making art to disrupt algorithms
• Exploring the technological dimensions of deep-learning + computer-vision algorithms and manually iterate on their techniques as a generative exercise
Echoing other artists, painter Sari Shryack reflects on her resistance to creating work that will reach a broader audience as Instagram continues to tweak its algorithm and she sees less and less engagement with her content on the platform.

Suzanne Kite, Hél čhaŋkú kiŋ ȟpáye (There lies the road), 2022.


https://jods.mitpress.mit.edu/pub/lewis-arista-pechawis-kite/release/1
Deconstruct the Algorithm

Explore
Check out same.energy and discuss how the technology works. Is it similar to/different from the algorithm that populates social media feeds?

Search + Suggest
Find 3 images from print media or GLAM collections that fit into or go with that vibe. Why did you pick them? What strategies did you use to find them?

Select + Reflect
Pick 3 images from your own social media feed that share a vibe that you like. Why were these images suggested? How would you describe this aesthetic?

Iterate
Create a new visual work that remixes, references, or builds upon your combined image “feed.” What did you learn from this process with regard to your creative practice?
Adapting for Other Contexts

**Browsing** as a form of discovery in algorithmic environments is a facet of information behavior that can be explored in a range of academic contexts outside of creative fields. How might your students explore questions like:

- How does the impact of algorithms differ between tools for searching and browsing?
- What is the interplay between algorithms and visual culture in your discipline?
- What role will generative AI have on society, including our discovery feeds?

The word “browse” doesn’t appear at all in the PIL report; browsing appears once in the context of using a VPN to shield PII. Browsing is not discussed in Algorithms of Oppression. What recommendation systems do your students interact with? How is this technology shaping the future of info access, including in library systems?
Classroom applications + Critical Sorting

Mackenzie Salisbury [she/her]
Information Literacy Librarian
School of the Art Institute of Chicago
“...computers will continue to grow more sophisticated cognitive capacities such as critical thinking, systems thinking, and even cultural agility. But they will lack the very human lens from which we view life, learning to interpret contexts to assess, act, and make sound decisions. Human beings possess this lens because we learn from experience.”

— Joseph E. Aoun, Robot-Proof: Higher Education in the Age of Artificial Intelligence
Nick Briz

Artist

Nick Briz is an internationally recognized new media artist, educator and organizer. His work investigates the promises and perils of living in an increasingly digital and networked world. He is an active participant in various online communities and conversations including glitch art, net art, remix culture, digital rights, Internet ecology and digital literacy. He’s co-founder of the netizen.org a non-profit focused on digital literacy and digital culture, he’s Associate Professor Adjunct at the School of the Art Institute of Chicago and Creative Technologist at Branger_Britz, a collective of artists, strategists, educators and programmers specializing in conceiving and developing custom innovative digital projects for a wide range of clients.

http://nickbriz.com
In this course we will adopt the research strategies of hackers, critical engineers, data journalists, digital rights activists and new media artists who investigate the nature of our digital world from technical, political and cultural perspectives. We'll investigate the algorithms mediating our lives and the biases embedded within them, we'll learn how to hack/dcollage online platforms, how to collect, analyze and visualize the invisible data floating all around us and learn how to code our own metaverses. Some of the topics we'll cover include networks, hacking, the web, social media, culture jamming, originality, algorithmic bias/oppression, mixed reality, automation, artificial intelligence, code, programming, data mining, privacy, digital rights and surveillance capitalism. Some of the artists and researchers discussed include Joy Buolamwini...
Critical Sorting Presentation

Library Assumptions
What are libraries? What systems do we use?

Hacking LOC
Library of Congress system, its flaws, and #critcat

Other Ways...
Of knowing. Examples from Ox-Bow sessions applying alternative organization

You as the Algorithm
Activity where you write + apply your algorithm to the Oversized Books @ Flaxman Library
**You as the Algorithm** (small groups)

**Brainstorm**
Ideate 10 alternative organizational models. Select 1 and name it.

**Swap + Test**
Swap the algorithm with another group, follow their directions. Describe the process - what worked, what didn’t, what felt confusing.*

**Describe**
Describe in detail the process of reorganizing and searching materials if they were organized according to the new algorithm.

**Debrief**
What unexpected results did you get using this approach? What connections did you make that would have been hidden otherwise?

*NOTE: Later in class you will be using the algorithm to code and apply to another dataset, make updates!
**Critical Sorting: Learning Outcomes**

**Research as Inquiry**
- value intellectual curiosity in developing questions and learning new investigative methods;

**Searching as Strategic Exploration**
- recognize the value of browsing and other serendipitous methods of information gathering

**Authority Is Constructed and Contextual**
- question traditional notions of granting authority and recognize the value of diverse ideas and worldviews;
How are you seeing the impacts of AI and other forms of algorithms? How does this challenge or question our ideas of citational practices, authority, ownership?
Bibliography


Bibliography, continued


Tom White, “Perception Engines”, Medium, April 4, 2018.

People, Projects & Resources

Nick Briz, https://nickbriz.com/
Sonja Drimmer, https://www.umass.edu/arthistory/member/sonja-drimmer
Suzanne Kite, https://www.bard.edu/faculty/details/?id=5046
Mimi Onuoha, https://mimionuoha.com
Midjourney, https://www.midjourney.com/
Same Energy, https://same.energy