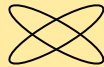# AN INTRO TO TECHNOFEMINISM

HOW TO USE (AND CRITIQUE) TECH FOR SOCIAL GOOD

Laine McCrory

Some Key Terms:

Big Data:
1. Large and complex, and has to take on non-traditional processing methods
2. Often used in reference to industries that collect, monetize, market and distribute this complex data through the employment of algorithms

Artificial Intelligence: a set of technologies that enable computers to perform a variety of advanced functions, including the ability to see, understand and translate spoken and written language, analyze data, make recommendations, and more. AI has been around for decades - it is not new!

Data Governance: Data governance represents the ways in which data is collected and then made secure, private, available and usable, as well as the protocols corporations must follow.

Digital Divide: The gap between demographics and regions that have access to modern information and communications technology (ICT), and those that don't or have restricted access.
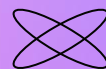
HOW IS "TECH" MADE?

01 DESIGN

02 DATA

03 POLITICS
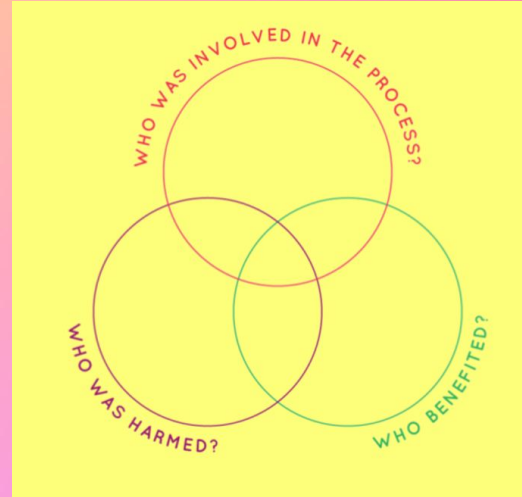
04 USAGE

01

DESIGN

Technology isn't designed for everyone

- When we talk about design, we talk about the way problems are conceived
- (Commercial) Tech is designed to make things more efficient, making it so that certain technology is beneficial to certain people, and detrimental to others
- **Who designs?**
- **Who is left out of the design process?**

Some key terms:
1. **Blackbox:** a black box is a system which can be viewed in terms of its inputs and outputs, without any knowledge of its internal workings.
   a. More than a scientific term: Blackbox as metaphor
2. **"Move Fast and Break Things"**: the Motto of Big Tech that aims to prioritize progress, innovation and efficiency over careful curated results

02
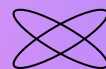
DATA

Data is more than zeros and ones...

- Data is in **everything** we do, and is a **double edged sword**
- The Data Economy:
    - Profits off of our tiny actions through the monetization and selling of our personal data
    - Uses predictive algorithms in civic, economic and political decisions
    - Datafication: the converting of online (and offline) behaviours into data that can be monetized and sold
- *Data has become a commodity*
- But the inclusion and creation of data sets is not all equal - the choice to create a data set is *a choice,* with many consequences


The library of missing datasets describes four reasons why data is not collected:
1. Those who have the resources to collect data lack the incentive to
2. The data to be collected resist simple quantification
3. The act of collection involves more work than the benefit the presence of the data is perceived to give.
4. There are advantages to nonexistence.

Can Data Be Feminist?

- **Catherine D'Ignazio and Lauren Klein want to imagine a world where it is!**
- DATA FEMINISM: " a way of thinking about data, both their uses and their limits, that is informed by direct experience, by a commitment to action, and by intersectional feminist thought." (9)
- Starts from an acknowledgement of unequal power relations, tries to tune into how data science practices reinforce these unequal relation
    - Builds from intersectional practices in feminist thought, and an acknowledgement of unequal power relations to specify that the data collection is far from objective
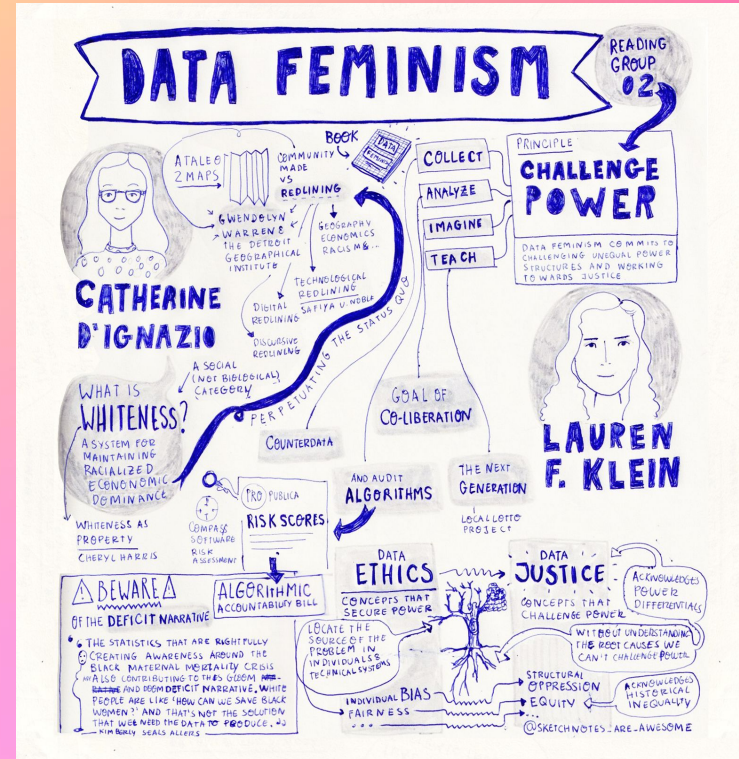
A Photo from the Data Feminism Reading Group, which can help us address and start to think about the key questions around creating feminist data

Principles of Data Feminism

1. **Examine power:** Why is the data science being done? For whose interests and goal?
2. **Challenge power:** Am I reinforcing existing power dynamics? Does my work empower under represented groups?
3. **Elevate emotion and embodiment:** Does my work obscure or elevate the human side of the data?
4. **Rethink binaries and hierarchies:** Who is missing from this data and why?
5. **Embrace pluralism:** Whose input is going into the decisions of how the data is being used and displayed?
6. **Consider context:** Does my work adequately communicate the context in which the data was collected and is being presented?
7. **Make labor visible:** Is there unacknowledged work that I am not crediting?
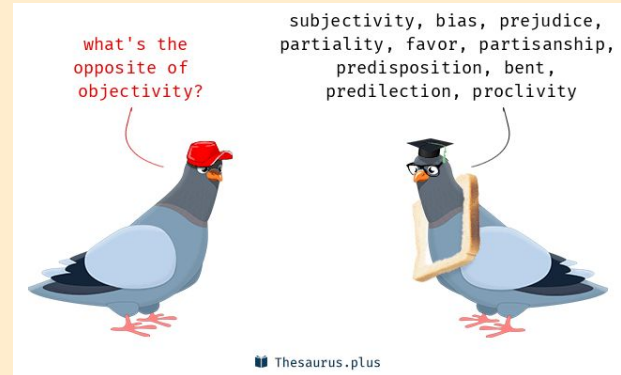
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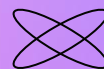
POLITICS

Despite being presented as apolitical, technology is ingrained with political consequences...

- **Objectivity:** the idea that technology is neutral and unbiased
- In reality, technology mirrors the political issues we face now
    - Why is this an issue?
    - Presenting anything as unbiased means you hide their political consequences
- Technology, when built without a consideration of political, institutional and social context, reifies hierarchies, and ignores the ways that politics contributes to its creation and usage

Does this represent the full story?
Presenting technology as fact positions it directly against bias - and as something that does not contain bias

03

USAGE

Technology cannot be used equally by everyone...

WE DON'T NEED AN APP FOR THAT

PROBLEMS FOUNDERS SET OUT TO SOLVE

PROBLEMS THEY CREATE IN THE PROCESS

HOW STARTUPS VIEW THE GROWTH OF THEIR BUSINESS
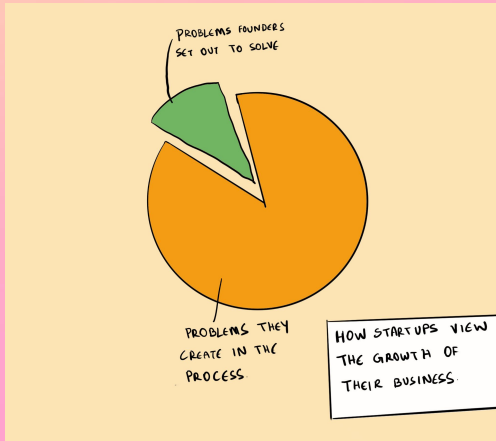
Techno solutionism: when fixes to complex and contextual problems are presented as universally beneficial. Those proposing these "one-size-fits-all" solutions are not city planners and government officials, but those in Big Tech, as corporations put their knowledge about the inner workings of data as a universal solution to problems of inefficiency.

- Why is this an issue?
    - ignores the intersectional networks of oppression
    - Rejects the differential needs of groups

WHAT ISSUES GO UNADDRESSED IN TECH?

KEY WORD: BIAS

If you take a look at what makes up technology - especially artificial intelligence - you'll see that the narratives around them focus on:
- Universality
- Objectivity

Looking back, in what instances (if any) have you noticed this?
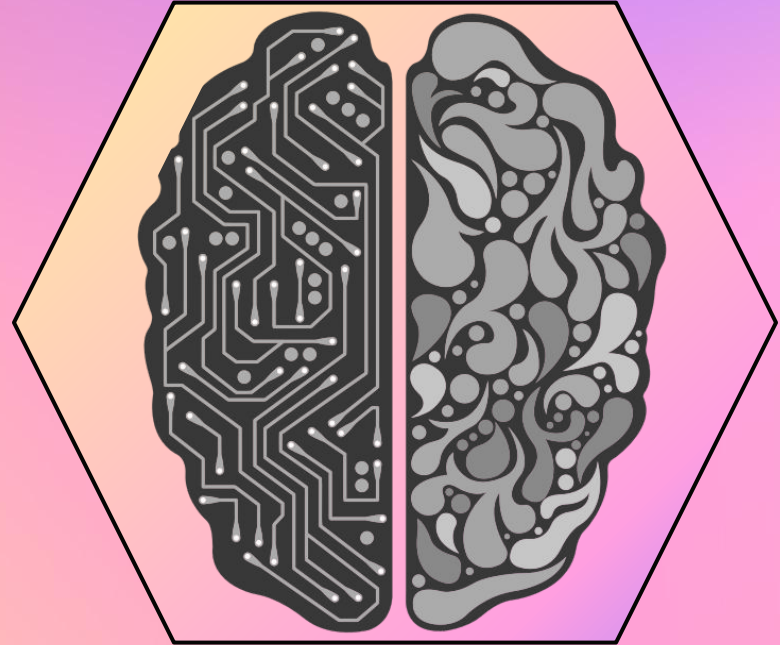
BIAS IN ARTIFICIAL INTELLIGENCE
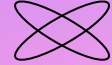
BIASED INPUT

Directly Biased Output

Occurs when the input is noticed right away - often times, this is seen as a "one time mistake"

Both forms represent the systems and hierarchies present in society, even when they are positioned as "outside" of it

Implicitly Biased output

Of equal concern, these biased outcomes are often completely unnoticed, and hide underneath a narrative of "objectivity"

Bias in Action: Gender and Technology

- TSA Screenings:
    - The screeners are taught to recognize either "man" or "woman" based on biological constructs
    - Ignores the realities faced by trans/nonbinary people
    - Demonstrates the inherent bias *coded into* the technology
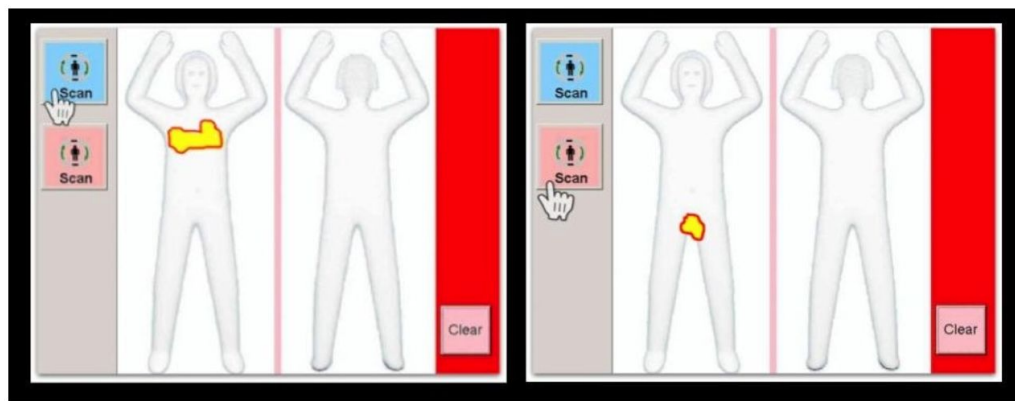
"'Anomalies' highlighted in millimeter wave scanner interface" (2016). From "Traveling while Trans: The False Promise of Better Treatment," by Dr. Gary Gabriel Costello

"So, for people like me—for gender nonconforming people and for many trans people—you can't win. If I get selected female, I'm going to have part of my body highlighted; if I get selected male I'm going to have another part of my body highlighted—all based on the way that my body diverges from a binary model of what human bodies are supposed to look like."

-   Sasha Costanza Chock

Bias in Action: Race and Technology

- Facial Recognition Technology (FRT): deepening surveillance, prioritizing white supremacy
- Racist history of surveillance -> leads to facial recognition technology **development** and **deployment** today
  - Development: on publicly-available mugshot photographs
  - Deployed: frequently in police forces, criminal court as a new aspect of the **prison industrial complex**
- These technologies are *designed to surveil,* and surveillance was designed to perform a racist function
- Ruha Benjamin describes this as *The New Jim Code:* "a range of discriminatory designs that encode inequity: by explicitly amplifying racial hierarchies, by ignoring but thereby replicating social divisions, or by aiming to fix racial bias but ultimately doing quite the opposite."

WHAT DOES FEMINISM BRING TO TECH CRITIQUE?

01

CRITIQUE OF POWER

02

INTERSECTIONAL VIEWPOINT

03

CONSENT

04

SITUATEDNESS

Criticizing Power:

- **Criticizing power means looking at institutions, roles and practices that we often see as "normal" but seek to reinforce power structures**
- This means changing our understanding of technology:
    - Changing to become a means of, and struggle for <u>power</u>

- **Kate Crawford**:
    - Focusses on the impacts of artificial intelligence and its connections with power
    - Comes to the conclusion that AI is a matter of exploitation:
        - Of the environment (ecology)
        - Of human workers (labour)
        - Of those using the technology (data)
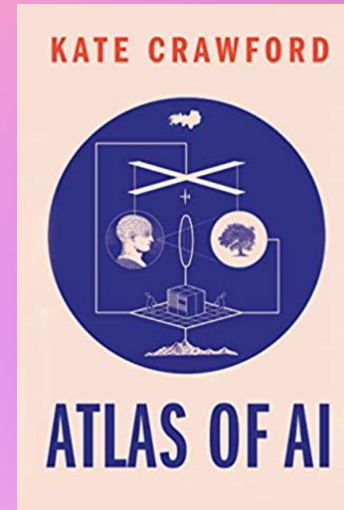
Anatomy of an AI System

- Kate Crawford and Vlanden Joler ask *what really makes the amazon echo:*
    - Where did the chips get produced? Where are the mines? Where does it get smelted? Where are the logistical and supply chain paths? How do we trace the end of life of these devices?
- Each small moment of convenience – be it answering a question, turning on a light, or playing a song – requires a vast planetary network, fueled by the extraction of non-renewable materials, labor, and data
    - Hidden behind a narrative of "ease", the echo represents hidden dynamics of labour and power

When you start looking at AI systems on that bigger scale, and on that longer time horizon, you shift away from these very narrow accounts of "AI fairness" and "ethics" to saying: these are systems that produce profound and lasting geomorphic changes to our planet, as well as increase the forms of labor inequality that we already have in the world.
- *Kate Crawford*

Anatomy of an AI system

An anatomical case study of the Amazon echo as an artificial intelligence system made of human labor

Human operator

Domestic infrastructure

Internet infrastructure

Internet Service Provider (ISP) Internet Exchange Points (IXP) Submarine Cable Infrastructure

Internet Platforms & Services

Internet Infrastructure

Content Platforms & Services

Amazon Inc. Infrastructure
AWS

Amazon Data Center

AVS
Alexa Voice Service

AVS: Speech to Text AVS: Text to Speech

Skills Skills ASK

AVS: Intent

AI Training

User voice recordings Privacy

Data Preparation and Labeling

Training datasets

Income distribution

Occupations

Distributors

Assemblers

Component manufacturers

Smelters & Refiners

Mines

Elements

Raw Earth Elements (REE)

Amazon storage systems

Transportation

Man's dialectic of subject and object in anatomy

Fractal chains of production and exploitation

Product of labor (Eastern idiom)

Labour-power (Western idiom)

Means of production (Origin)

Production and exploitation of natural resources (Earth)

Geological process

Quantification of nature
From Nature to Databanks

Data exploitation

Abandoned devices

Collecting
Informal waste collection Formal Collection Formal collection and transportation

Shipping

Recovering

Disposing

Geological process

Focus on Intersectionality

- **Matrix of domination:** the intersection of white supremacy, hetero-patriarchy, capitalism, ableism, settler colonialism, and other forms structural and historical inequality.
    - Understanding this means understanding that systems of power enact the matrix to reinforce hierarchy
- Different impacts necessitates comments from different groups
    - Also involves managing comments beyond additions
- **"Nothing about us without us"**
    - Originated in disability justice circles
    - Integrated into social justice viewings of technology to enforce the need to integrate the experiences of those most impacted *into* the design process itself
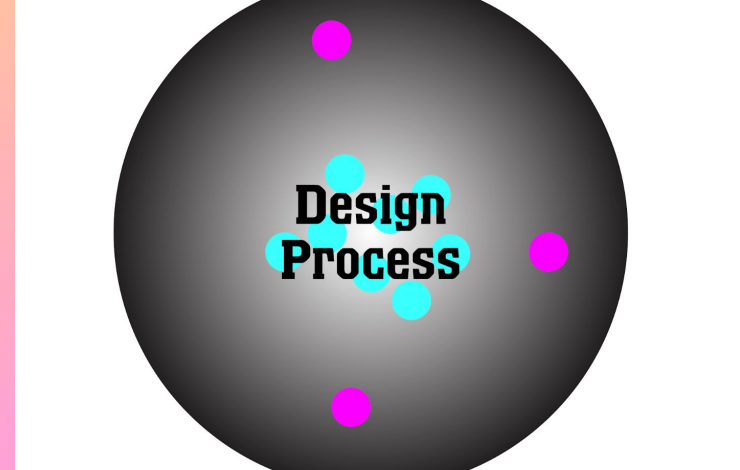
Why might this matter when we are thinking about tech?

SPOTLIGHT: DESIGN JUSTICE

Traditional Design Process

Pink: Designers
Blue: People impacted
Designers have full control, imposed on those impacted

Design Justice Process

Designers and those impacted work *together*

PRINCIPLES OF DESIGN JUSTICE

1. We use design to sustain, heal and empower our communities, as well as to seek liberation from exploitative and oppressive systems.

2. We center the voices of those who are directly impacted by the outcome of the design process.

3. We prioritize design's impact on the community over the intentions of the designer.

4. We view change as emergent from an accountable, accessible, and collaborative process, rather than as a point at the end of a process.

5. We see the role of the designer as a facilitator rather than an expert.

6. We believe that everyone is an expert based on their own lived experience, and that we all have unique and brilliant contributions to bring to a design process.

7. We share design knowledge and tools with our communities.

8. We work towards sustainable, community-led and -controlled outcomes.

9. We work towards non-exploitative solutions that reconnect us to the earth and each other.

10. Before seeking new design solutions, we look for what is already working at the community level. We honor and uplift traditional, indigenous, and local knowledge and practices.

Consent

- **Feminist principles of consent originated in sexual violence frameworks to centre accountability**
  - Have been adopted in many different areas, to emphasize a need for **self-determination**
- FRIES Framework emphasizes consent as:
  - Freely given
  - Reversible
  - Informed
  - Enthusiastic
  - Specific
- In the context of technology, this means dismantling that "black box" we talked about earlier
- People need to be able to *understand* technology in order to be able to consent to it
- *The issue of "terms and conditions"*
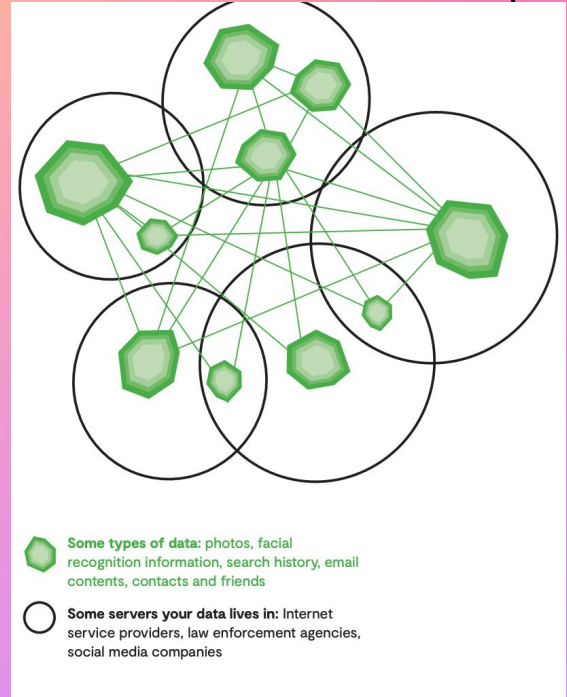
Consentful Tech Project

- When it comes to our digital lives, there's a lack of discussion about what consent means for our data, our identities, and our online interactions
- *Digital Bodies:* personal data gathered, monetized and sold, we have an online (and offline) body
    - How digital bodies are impacted: Doxxing, Location Sharing, Biometric Data
- Consentful Tech aims to grow from consent culture to create a *community accountability approach* to technology

Some types of data: photos, facial recognition information, search history, email contents, contacts and friends

Some servers your data lives in: Internet service providers, law enforcement agencies, social media companies

Tech folks can contribute to building consentful tech by:

- Advocating for diverse teams
- Opening up design & development processes to people who those who are vulnerable to harm
- Working towards a culture of consent in our companies and organizations
- Mentoring newcomers, particularly those who are often excluded or marginalized from mainstream tech communities
- Growing our knowledge on concepts like collaborative design processes and intersectionality
- Consistently reviewing our development processes

Non-technology folks can contribute to building consentful tech by:

- Holding the platforms we use accountable to how they use our data
- Advocating for consent-focused policy and legislation
- Intervening in development processes through community organizing (petitions, demonstrations, etc.)
- Signing on to platforms that are consentful
- Learning more about code, policies, and legislation

Read more from the Consentful Tech Zine!

Situatedness vs Objectivity

- Emphasizes community integration
- Understands that knowledge is created from *experience*
- If experience creates knowledge, we should consider those with lived experience experts
- Universalism is inadequate
- Strong solutions require careful consideration of context

- Universalism: implementing a "one-size-fits-all" approach
- Seeing technology as creating facts
- Prioritizing "expert" knowledge over community building
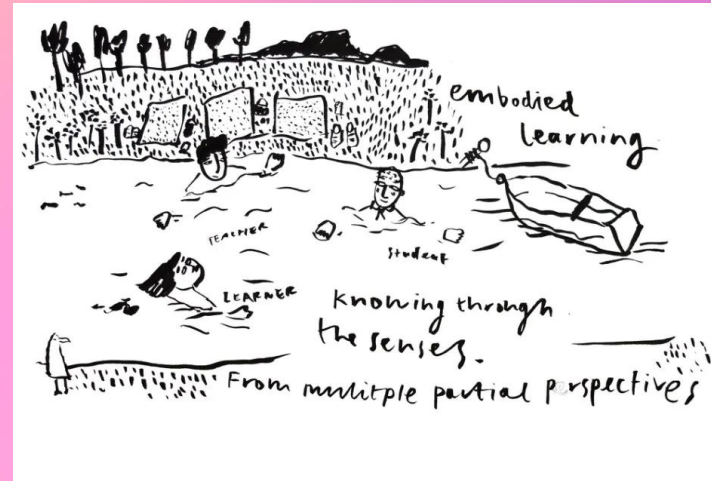
From: An Illustrated Guide to Embodied Learning

Situatedness: Detroit Digital Justice Coalition

DDJC is a coalition originally founded to secure funding for addressing the digital divide. Over time, they morphed into a group that is working towards situated usages and critiques of technology guided on four principles

DDJC Digital Justice Principles:
1. ACCESS:
2. PARTICIPATION
3. COMMON OWNERSHIP
4. HEALTHY COMMUNITIES
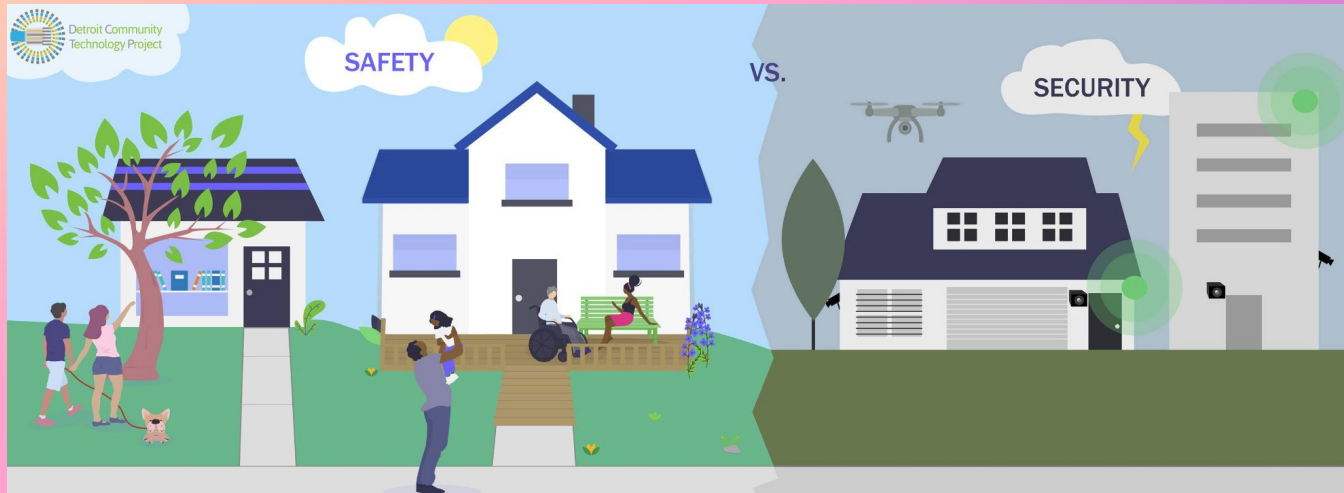
Mapping Project Greenlight

- Created by the Detroit Community Technology Project
- 2016, the Detroit Police Department (DPD) installed camera connections with Police Headquarters as a "crime fighting partnership"
- Mapping Project Greenlight aims to highlight the places where these cameras are located using open source data portals
- Aim of revealing the surveillance throughout the city
  - Protecting those who are most impacted by this high-level surveillance
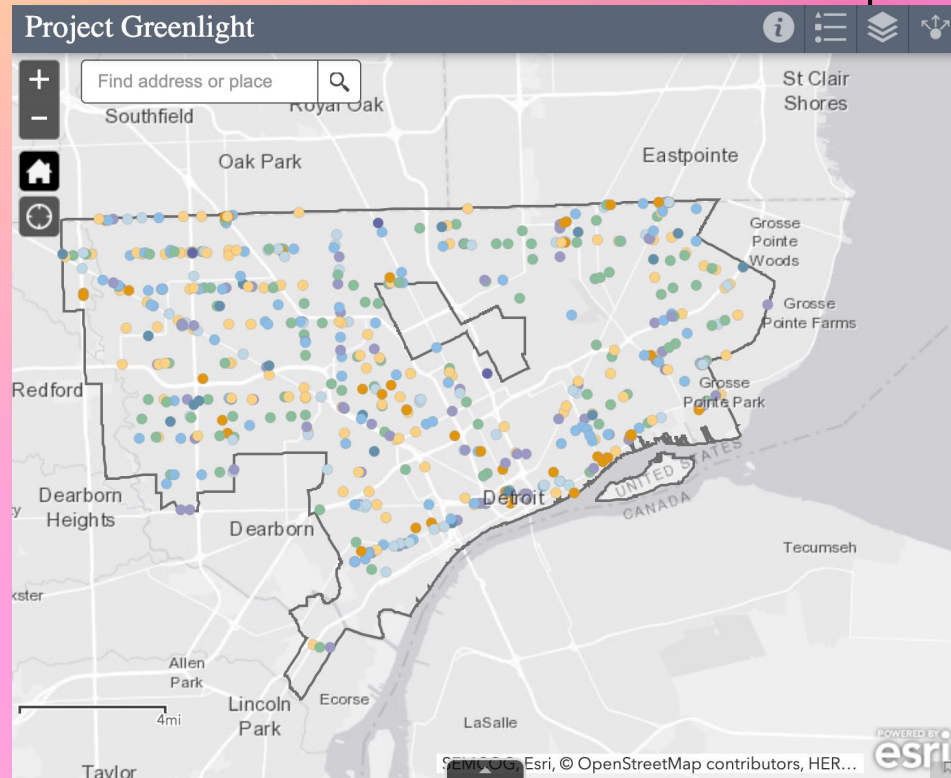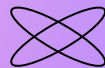
ACTIVITY

WHAT'S BEING DONE?

INTERVENTIONS

DATA FOR BLACK LIVES

a movement committed to the mission of using data to create concrete and measurable change in the lives of Black people.

CAREBOT

Carebot acts as "a quick and easy way to provide actionable feedback when platforms provide such little support for victims".

Digital Defense Playbook

INDIGENOUS AI

Develops new conceptual and practical approaches to building the next generation of A.I. systems

DIGITAL DEFENSE PLAYBOOK

A workbook of popular education activities focused on data, surveillance, and community safety to co-create and share knowledge, analyses, and tools for data justice and data access for equity.

DATA FOR BLACK LIVES

Data for Black Lives works "to support the vital work of grassroots racial justice organizations to challenge discriminatory uses of data and algorithms across systems". They have a network of over 20,000 activists and scientists, and publish reports, creates data sets, produces "crash courses" and develops campaigns to highlight the importance of considering the racial implications of data-centered practices.

Choose one (or more) of D4BL's initiatives using their index for this activity! Look into it, and consider some of the questions to come!

CAreB0t

CAreB0t is a project written and designed by Caroline Sinders and programmed by Alex Fefegha, Carebot acts as "a quick and easy way to provide actionable feedback when platforms provide such little support for victims". However, the bot also acts as an activist piece, with Sinders and Fefegha detailing that: "The project itself is a bit tongue in cheek though- an automated care bot or chat bot should not be the entity or thing a platform creates to interface with victims of online harassment. It really should be humans, or a human team, alongside better digital tools to help create safety for victims."

Interact with CAreB0t's interface for this activity! Content warning: CAreB0t mentions instances of sexual violence and online harassment

INDIGENOUS AI

Indigenous AI is a working group created to look into four questions:

1. From an Indigenous perspective, what should settlers' relationship with A.I. be?
2. How can Indigenous epistemologies and ontologies contribute to the global conversation regarding society and A.I.?
3. How do we broaden discussions regarding the role of technology in society beyond the largely culturally homogeneous research labs and Silicon Valley startup culture?
4. How do we imagine a future with A.I. that contributes to the flourishing of all humans and non-humans?

Browse through Indigenous AI's positions, events and news to learn more about how they are changing the landscape of artificial intelligence development!

DIGITAL DEFENSE PLAYBOOK

Our Data Bodies (ODB) has conducted research and produced a workbook of popular education activities focused on data, surveillance, and community safety to co-create and share knowledge, analyses, and tools for data justice and data access for equity. This playbook details tips, tricks and interventions into how the concept of "digital defense" can be integrated into both large-scale tech initiatives and daily live

Read through the Digital Defense Playbook to learn more from this amazing resource!

Reflections!

- After looking through these resources, how are they changing the landscape of technology?

- In what ways are these interventions successful?

- What are some of the issues that may arise from these interventions?

- Did looking through these resources change your view of technology (and its future)?

- *How can we (<u>if we can</u>) use technology for social change?*

REFLECTING, MOVING FORWARD

Technology is political

Jupiter is the biggest planet of them all

Bias is everywhere

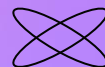Venus is the second planet from the Sun

Design can't fix everything

But design justice helps

People are already doing the work

It's time to join them!

Take your learning further!

Digital literacy is a project that is never fully complete!

1. Take a look at these resources. They are not an exhaustive list, and feel free to submit more using this google form.
2. Visit the TechnoFeminist AI Syllabus to kick-start your learning
3. Take action! Remember the ways to get involved (for non tech folks) from the Consentful Tech Zine:

- Holding the platforms we use accountable to how they use our data
- Advocating for consent-focused policy and legislation
- Intervening in development processes through community organizing (petitions, demonstrations, etc.)
- Signing on to platforms that are consentful
- Learning more about code, policies, and legislation

Feminist Tech Resources

| The Techno- Feminist AI Syllabus |
| Disrupting Disruptions Website |
| Review: Weapons of Math Destruction |
| Feminist Publishing and Tech Youtube |
| How Computers See Gender |