

CSE 440: Introduction to HCI

User Interface Design, Prototyping, and Evaluation!

Lecture 11: Ethical and Societal Implications

Instructor: Chris Geeng, 11/4/2021

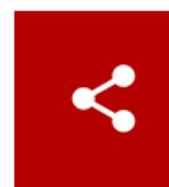
Today's Topics

- UI Hall of Fame and Shame
- Updates on the course in response to feedback
- (Un)intended consequences of design
 - How can we guard against negative societal impacts?
- Designing for diversity and accessibility
- Activity on Tarot Cards of Tech
- Other HCI-related Courses at UW
- Team work time on 2g

UI Hall of Fame and Shame

Tesla Autopilot detects speed limits and green lights

⌚ 31 August 2020



We've discussed usability principles like learnability, safety, and efficiency.

What about ethics? What is our responsibility in thinking through the societal implications of certain designs, whether good or bad?





This tech is framed in terms of **social good** - Tesla says their self-driving cars will make roads safer.

But what if unintended mistakes, like misidentifying traffic signs, can cause **real-world harm**?

We prize usability, and this car offloads burden from the driver. But when does this ease-of-use become dangerous?

Updates on the Course

Thank you for all your feedback! Here are some changes we'll be making to the course for the rest of the quarter:

- Assignments:
 - We will release assignments earlier so that you can get a sense of what is coming up. We put up 2g yesterday.
 - People also asked about some more time for assignments. We will keep this in mind while also trying to keep things on track. For 2g for instance, we still encourage you to finish by Mon (the original deadline) since 3a work will have started but we moved the official deadline to Wed.
- Lectures:
 - We will add in a 3 min stretch break during longer lectures at ~45 minutes.
 - We will allot more time for in-class group work, as well as continue with in-class activities and small discussions. This makes it **even more important** that you and the rest of your group show up for class! Remember that class participation and section participation make up 15% of your grade.
 - We will have slides for the day's lecture up on Canvas (Files tab) and the website right **before** class starts so you can follow along.
- Section:
 - Some amount of section time will be dedicated to reviewing concepts covered in lecture.

(Un)intended Consequences of Design

What are unintended consequences?

- Intended by the designers and desired by the public?
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What are unintended consequences?

Example — Facebook

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Catching up with friends' lives, sending status updates to friends, and chatting with them

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Many newer features started out homegrown: hashtags, marketplace, dating etc.

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pollev.com/cgeeng

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Catching up with friends' lives, sending status updates to friends, and chatting with them
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Many newer features started out homegrown: retweets, hashtags, marketplace, etc.
- Intended by the designers and undesired by the public
Data harvesting and surveillance, and monetization of engagement via ads, tricks to get people to stay on the app or not delete their account
- Unintended by the designers and undesired by the public
Social media feedback loops that lead people to feel lonely due to social comparison, polarization due to engaging political propaganda and misinformation, clickbait and scams

Unfortunately, consequences can be hard to predict

- Both for good and bad consequences
- Sociologist Robert Merton's 5 sources of unintended consequences:
 - 1) Ignorance
 - 2) (Human) Error
 - 3) Imperious immediacy of interest
 - 4) Basic values
 - 5) Self-defeating prediction

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TECH

Facebook Is Still Prioritizing Scale Over Safety

Facebook often uses its vast size as an excuse for its failures. Meanwhile, it's ordering employees to make it bigger.



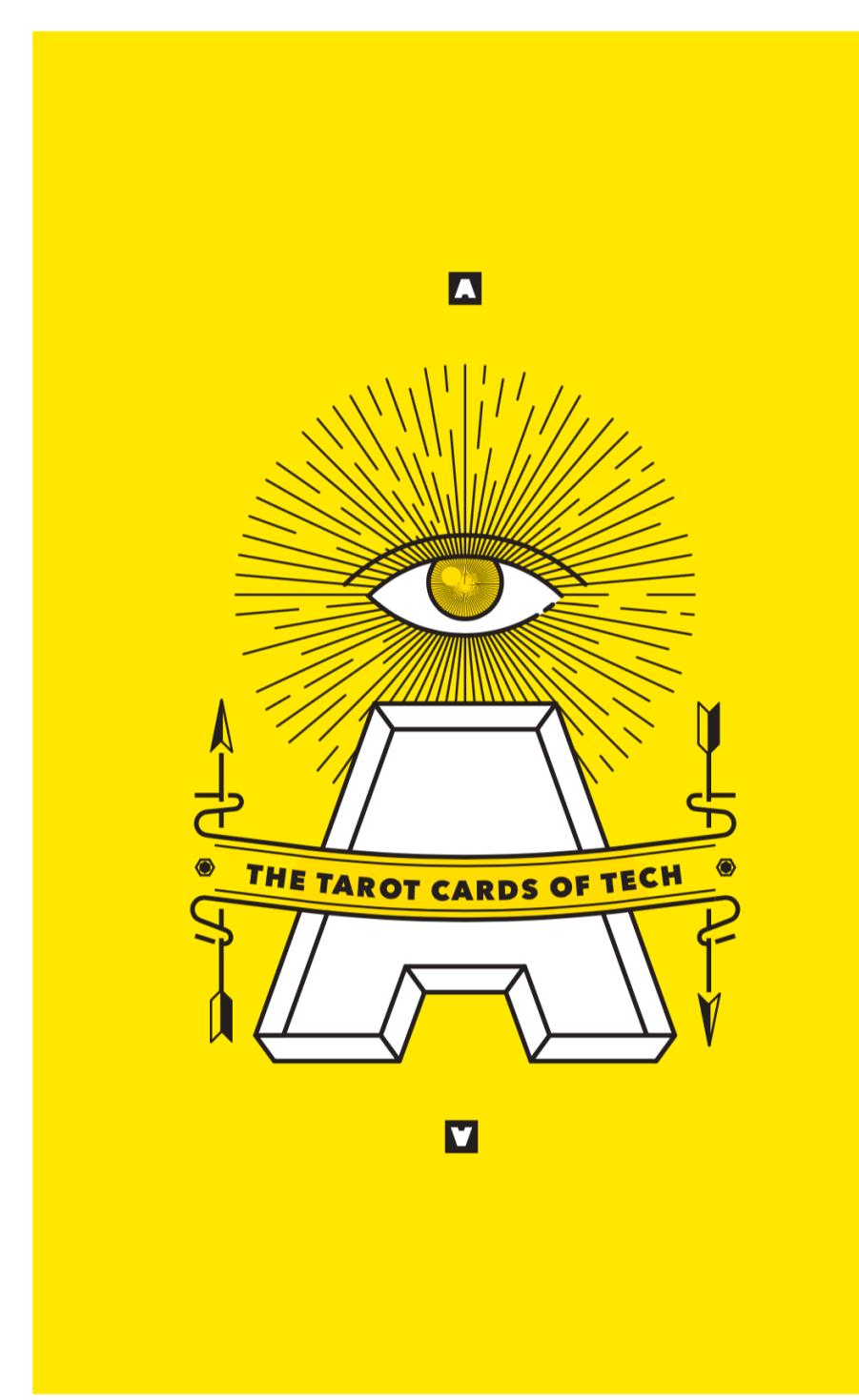
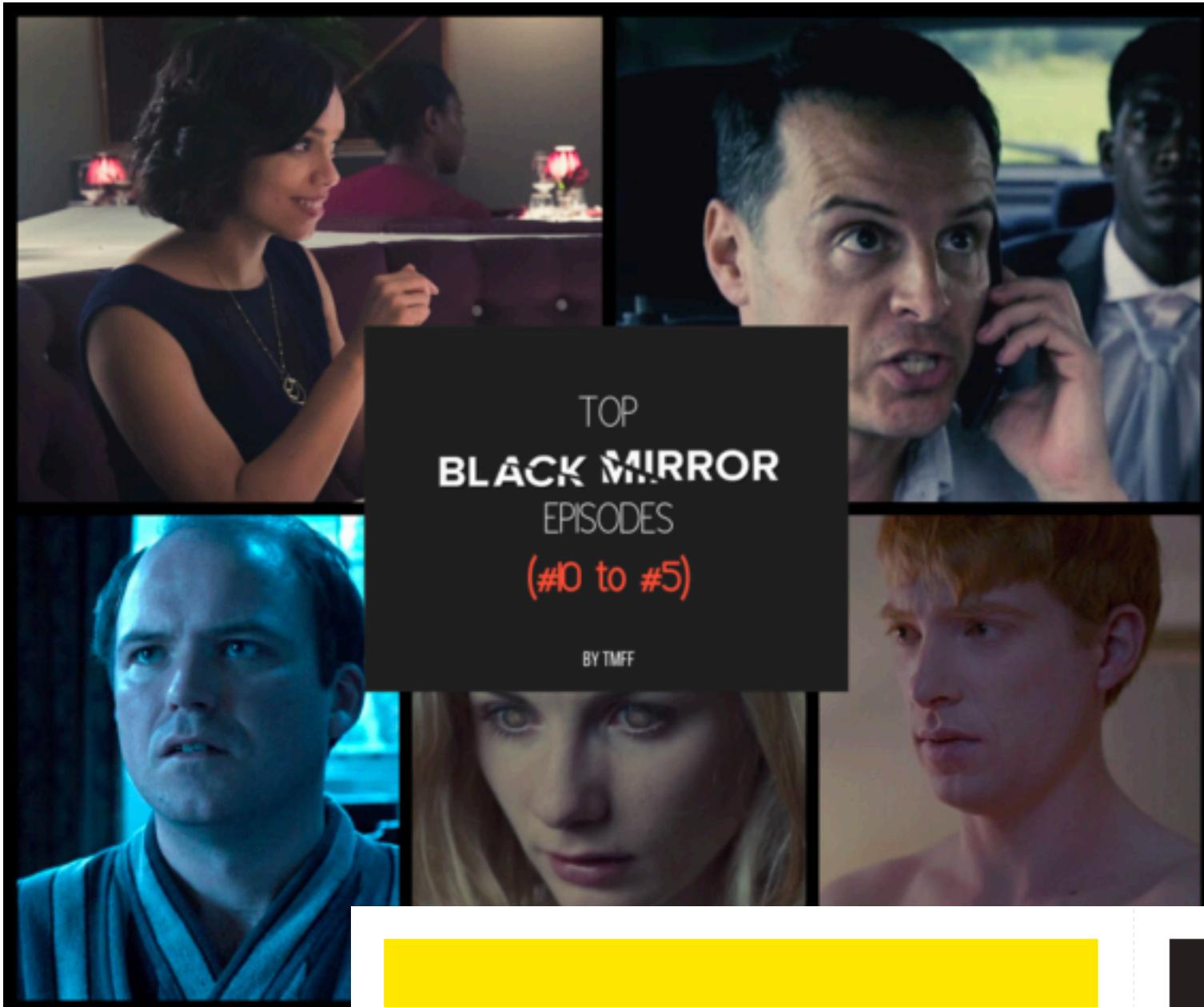
Alex Kantrowitz
BuzzFeed News Reporter

4) Basic values

Your values lead you to emphasize certain outcomes over others

unchanged. BuzzFeed News has learned the company continues to evaluate and compensate product managers based mostly on their ability to grow its products, with little regard to the impact of those products on the world. In fact, for Facebook, the very word “impact” is often defined by internal growth rather than external consequences and it uses growth metrics as key criteria for evaluating performance and determining compensation changes.

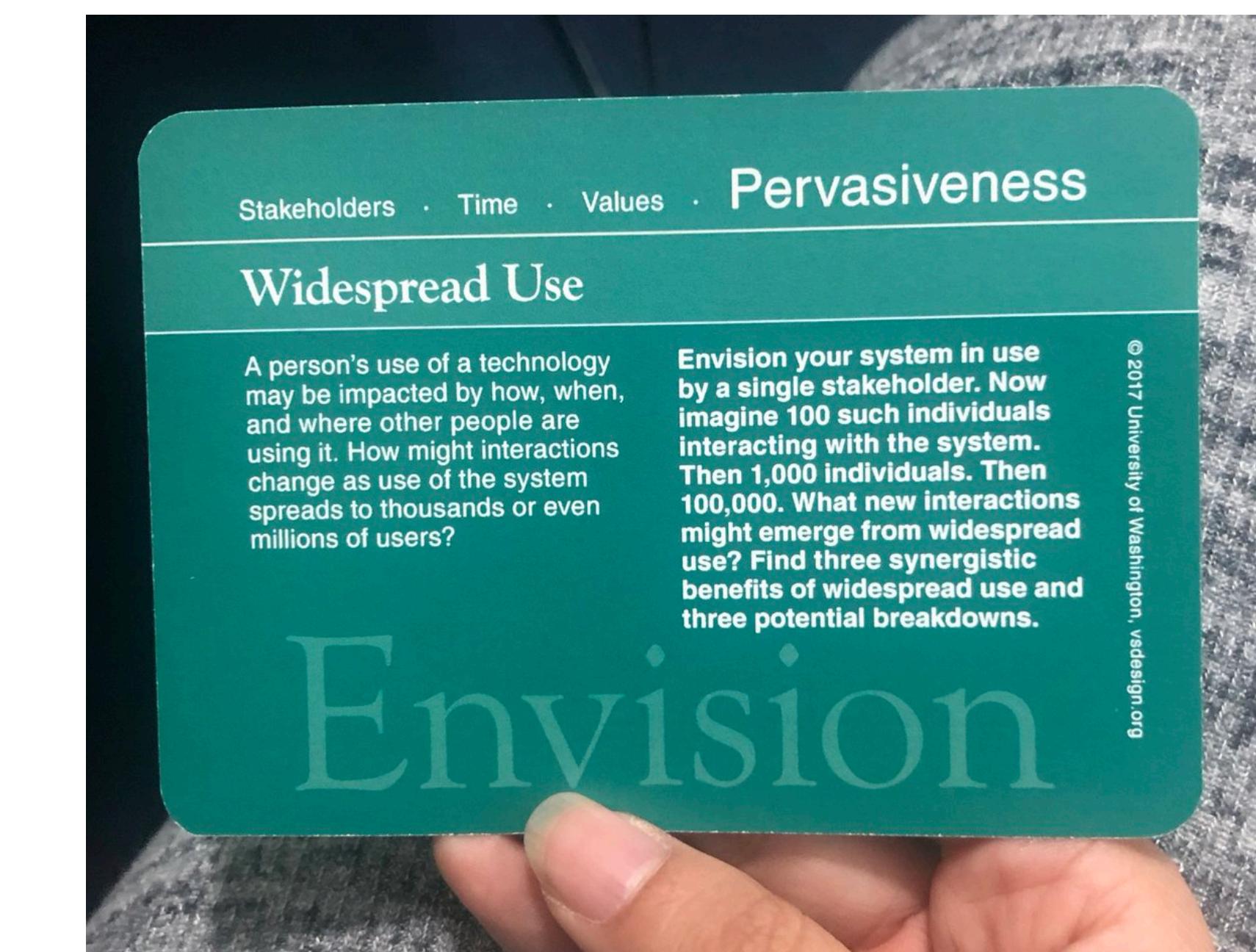
**How can we guard against
negative societal impacts?**



Actually think (speculate) about the potential negative impacts of your design!

Some ways to do so:

- Speculative fiction (a.k.a. Black Mirror!)
- Tarot Cards of Tech
- Value-Sensitive Design cards (by Batya Friedman in the iSchool)



Start thinking about it early and often.

If you do it too late, there may be too much momentum to stop the release of a product.

When shouldn't we build something?



Ask yourself if the negatives outweigh the positives.

ALL new technologies have some negative potential consequences. But some have little upside and lots of downside. Some negative consequences can be mitigated while others are inherent to the technology.

Hundreds of Silicon Valley engineers are pledging not to help Trump build a Muslim database

Rob Price Dec 14, 2016, 3:08 AM



Hundreds of engineers are [publicly pledging to refuse to help build a Muslim database in America](#), amid speculation that Donald Trump might ask Silicon Valley for help in monitoring America's Muslim population.



Chicago students protest Trump. Scott Olson/Getty Images

Amazon Workers Demand Jeff Bezos Cancel Face Recognition Contracts With Law Enforcement

By Kate Conger | 6/21/18 9:22PM | Comments (27)

Technology

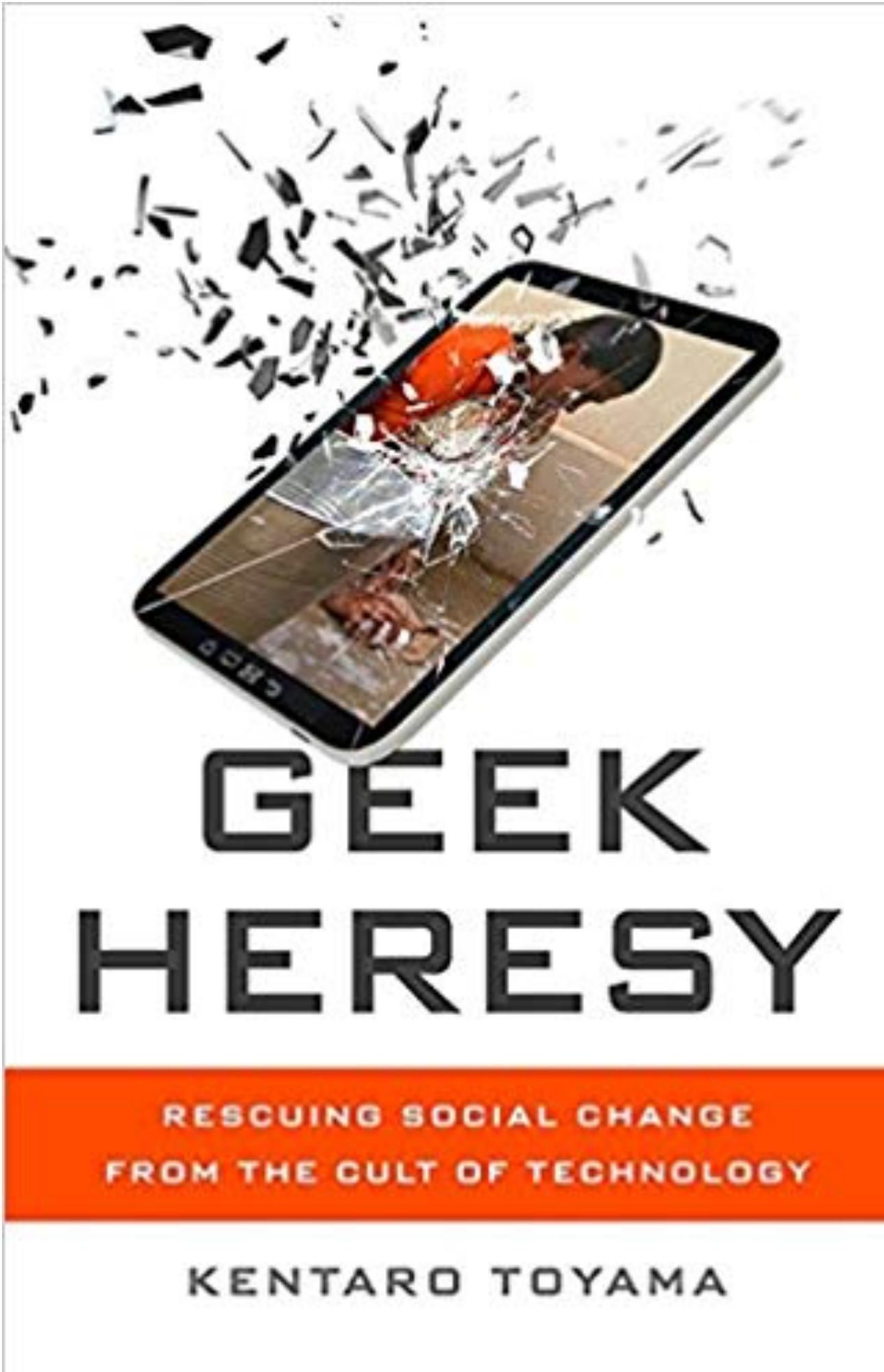
Amazon extends ban on police use of its facial recognition technology indefinitely

<https://catalog.archives.gov/id/6250638>

<https://gizmodo.com/amazon-workers-demand-jeff-bezos-cancel-face-recognition-1827037509>

<https://www.washingtonpost.com/technology/2021/05/18/amazon-facial-recognition-ban/>

Tech produces differential impacts.



Sometimes only parts of the population, such as those already marginalized, experience the negative consequence.

Sometimes the positive outcomes only go to certain privileged groups.

All of this can result in increased societal inequality.

3 minute stretch break!

Designing for Diversity and Accessibility

Easy to design for ourselves but what about designing for “all”?

- Design is fundamentally about **power**: granting ease of access to certain functions
- When you design for one population only and neglect others, you are **reconfiguring power**—increasing access for one population while setting up barriers for another
- When replicated at large, this can have the effect of exacerbating inequality.



Ruha Benjamin:
interdisciplinary scholar of
technology and society

Designing for “all”

- **WEIRD** problem: when designs are made for people who are Westerners, Educated, Industrialized, Rich, and Democratic, which only represents about 12% of the world.

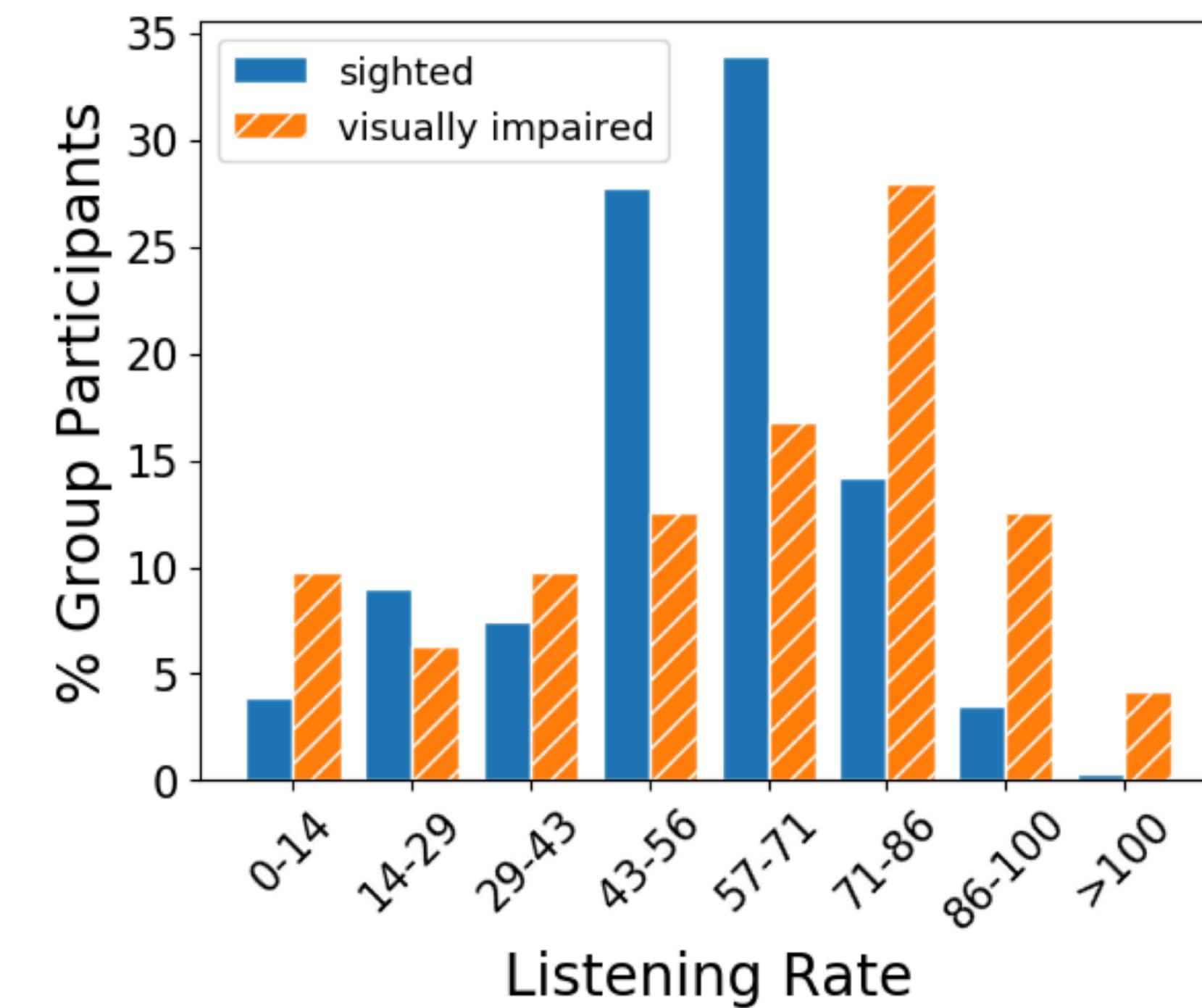
Example: Cultural preferences for websites



Example: Audio preferences for visually impaired



Amazon Alexa devices (left to right): Echo Dot, Echo, Echo Plus



People with Disabilities

Remember:

- 1 billion people worldwide
 - 15% of the world's population
- 50 million people in the U.S.
- This **will** include yourself if you are fortunate to live long enough to develop disabilities one day



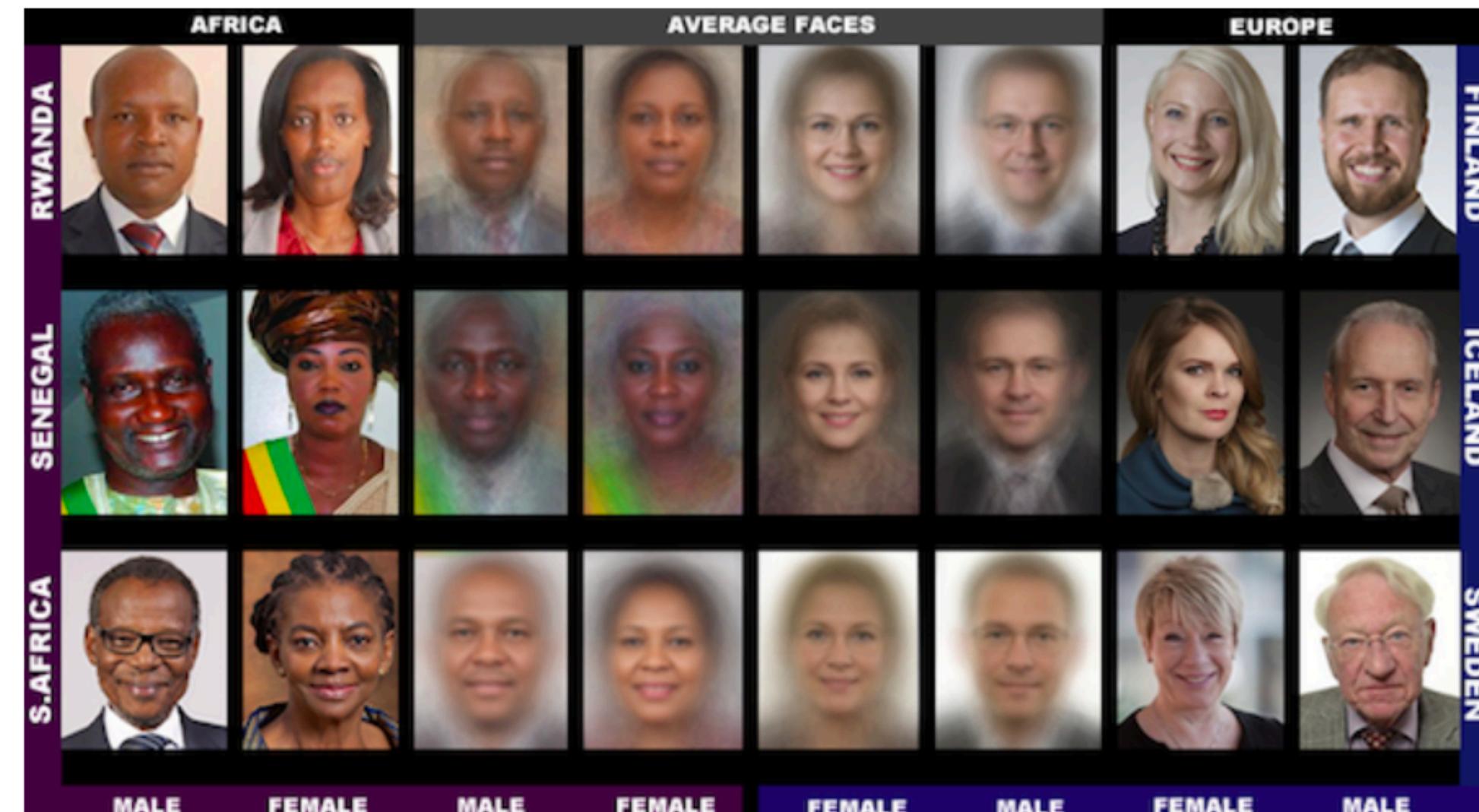
Chukwuemeka Afigbo @nke_ise · Aug 16, 2017

...

If you have ever had a problem grasping the importance of diversity in tech and its impact on society, watch this video



Example: Algorithms and sensors that discriminate based on skin tone or gender



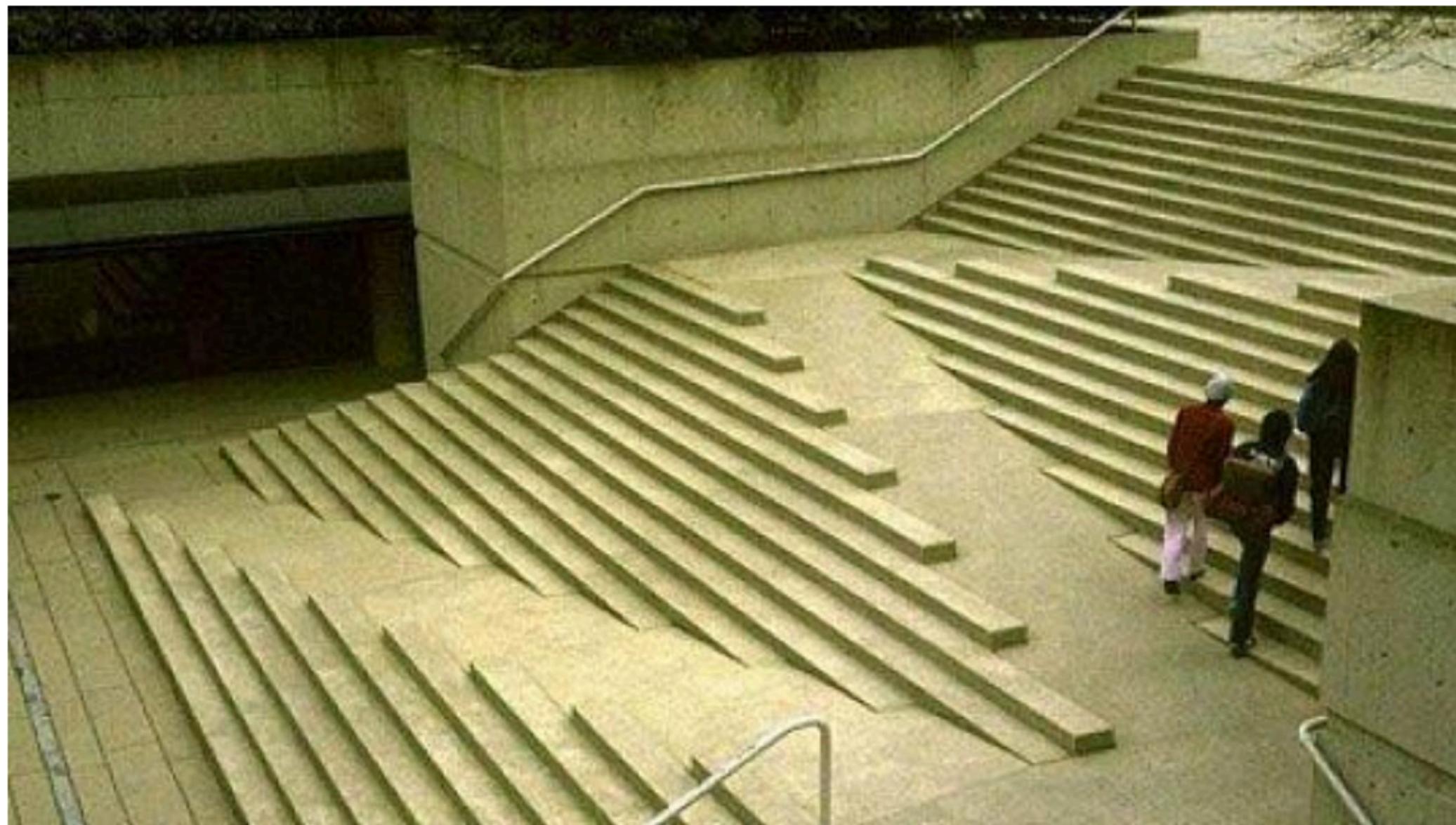
Pilot Parliaments Benchmark

<http://gendershades.org/>

How to better design for diversity and accessibility?

- Study different preferences
- Test with marginalized users
- We've already talked about diversity in the design team
- A design that emphasizes one value/preference will disadvantage some other value
 - We could abandon the notion of one-size-fits-all or a “best” design
 - Instead, we could consider adaptive or malleable software designs that can adjust to match the abilities of the user
 - We could also make more designs that are each customized to a particular context
 - We could focus the design for the most marginalized populations

Universal Design vs. Assistive Technology



One-size-fits-all

Contrast with IDEO



One-size-fits-one

Ways to learn more and get involved in accessible and diverse design

CSE 490D: Designing Technology for Resource-Constrained Environments

CSE 482A: Accessibility Capstone

More here: <https://create.uw.edu/join-us-accessibility-related-uw-courses/>

Jen Mankoff's Make4All Lab

Katharina Reinecke's LabintheWild

Jon Froehlich's Makeability Lab

Richard Ladner's AccessComputing Alliance

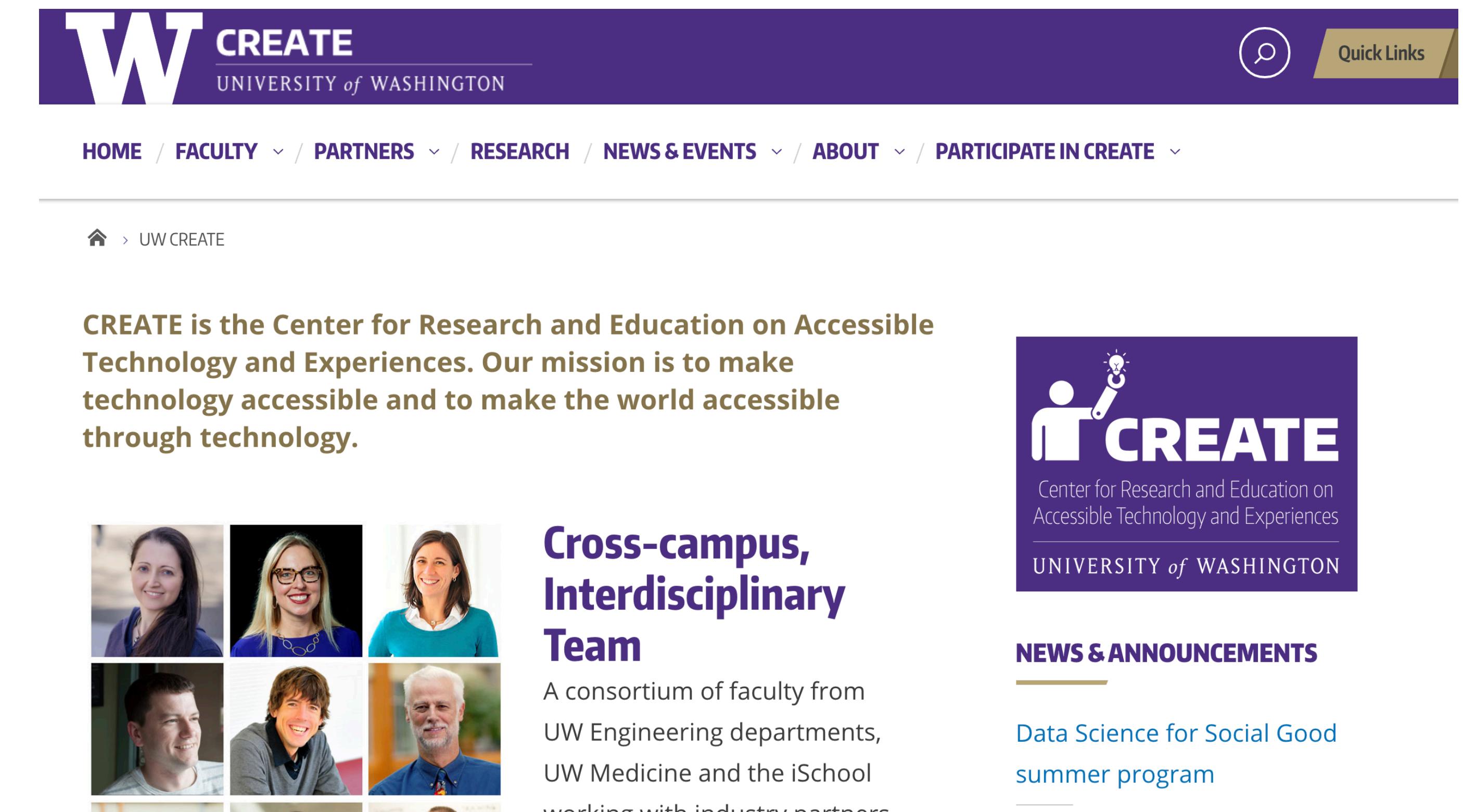
Jacob Wobbrock's ACE Lab

Leah Findlater's Inclusive Design Lab

...so much more!

CREATE Center

Taskar Center



The screenshot shows the UW CREATE website. At the top is a purple header bar with the UW logo, the word "CREATE", and "UNIVERSITY of WASHINGTON". To the right are a search icon and a "Quick Links" button. Below the header is a navigation menu with links for HOME, FACULTY, PARTNERS, RESEARCH, NEWS & EVENTS, ABOUT, and PARTICIPATE IN CREATE. A breadcrumb trail shows the user is at the "UW CREATE" page. The main content area features a large text block about the mission of making technology accessible. Below this are six portrait photos of team members arranged in two rows of three. To the right, a purple sidebar contains the "CREATE" logo, the full name "Center for Research and Education on Accessible Technology and Experiences", and "UNIVERSITY of WASHINGTON". At the bottom of the sidebar is a section titled "NEWS & ANNOUNCEMENTS" with a link to "Data Science for Social Good summer program".

CREATE
UNIVERSITY of WASHINGTON

HOME / FACULTY / PARTNERS / RESEARCH / NEWS & EVENTS / ABOUT / PARTICIPATE IN CREATE

UW CREATE

CREATE is the Center for Research and Education on Accessible Technology and Experiences. Our mission is to make technology accessible and to make the world accessible through technology.



Cross-campus, Interdisciplinary Team

A consortium of faculty from UW Engineering departments, UW Medicine and the iSchool working with industry partners

NEWS & ANNOUNCEMENTS

Data Science for Social Good summer program

Learn more about ethics in tech:

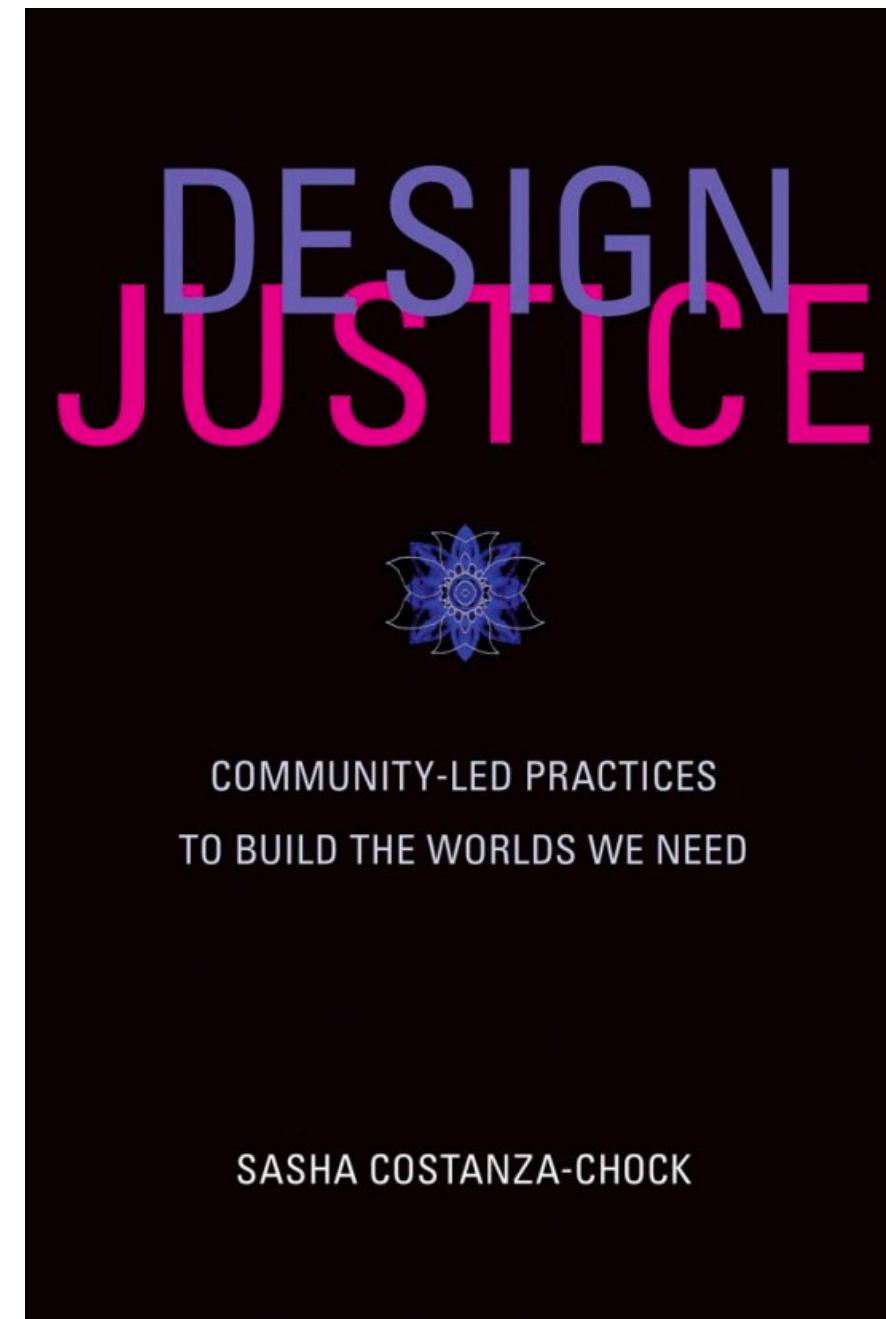
Computer Ethics CSE 492e
seminar class

<https://courses.cs.washington.edu/courses/cse492e/21wi/>

today
administrative
description
objectives
schedule
[Back to top](#)

| |
|--|
| <p>labor and automation gender and sexuality theory</p> <p>Fri, Oct 23</p> <p>Critical Perspectives</p> |
| <p>Latent Identity and Privacy</p> <p>control and power data and classification surveillance and privacy</p> <p>Wed, Oct 28</p> <p>Critical Perspectives</p> |
| <p>Reimagining</p> <p>narrative reimagining systems theory</p> <p>Fri, Oct 30</p> <p>Critical Perspectives</p> |
| <p>Platform or Publisher?</p> <p>control and power society of tech</p> <p>Wed, Nov 04</p> <p>Misinformation and Platforms</p> |
| <p>Content Moderation Algorithms and Free Speech</p> <p>emerging technologies narrative sociotechnical systems</p> <p>Fri, Nov 06</p> <p>Misinformation and Platforms</p> |
| <p>Constructing a Political Argument</p> <p>politics reflection and practice</p> <p>Fri, Nov 13</p> |
| <p>Experiences of Injustice in Computing</p> <p>control and power society of tech equity</p> <p>Wed, Nov 18</p> <p>Computing and Racial Equity</p> |
| <p>Critiques and Suggestions</p> |

Specifically ethics as it relates to design:



Design Justice: Community-Led
Practices to Build the Worlds We Need
Book by Sasha Costanza-Chock

Jenny L. Davis

Free online: <http://design-justice.pubpub.org/>



How Artifacts Afford: The
Power and Politics of
Everyday Things
Book by Jenny Davis

The Power and Politics
of Everyday Things

Other HCl-related Courses at UW

Other HCI-related Courses at UW

- **HCDE 308** Visual Design, **HCDE 318** (similar to 440)
- **INFO 360** (also similar to 440)
- **CSE 340** Interaction Programming, **CSE 442** Data Visualization, **CSE 490** Physical Computing
- **CSE 481** Social Computing Capstone (taught by Amy this winter!), **CSE 441** HCI Capstone (not available this year)
- **Design 265** Topics in Design
- **CSE 590** Research seminars! HCI, ICTD, Accessibility, DUB, Ubicomp, Security

Looking ahead...

- Pair-share of 2f in tomorrow's Section
- This is it! This is the culmination of Assignment 2: Getting the Right Design. The design you land on for 2f is the design you're going to focus on from now on as we move into serial prototyping for Assignment 3.
- Released 2g already, in your best interests submit next Monday!
 - We will grade after Wed 11am.
 - This is a public blog post summarizing all you've done in Assignment 2 that will get posted on Medium!

Activity + Group work time

We're about to put you in your groups for work time. Spend the first ~5-10 minutes on the following activity:

Randomly "draw" one tarot card from each row (so three cards in total). <http://tarotcardsoftech.artefactgroup.com/>

Record your answers to the following questions in this form (submit one per person please!): <https://tinyurl.com/3xmhp9ts>

- Discuss your answers to the questions on the cards for your group's product.
- What insights have you gained from thinking through these questions? Anything that surprised you or challenged your thinking?
- How would these considerations impact your product design (whether just the tasks you focus on for the course or thinking ahead to if a fully-featured product was launched widely)

