Access

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CS 376
THANKS TO JEFF BIGHAM
Announcements

- Stats tutorial by Geza on Thursday
- Project Fair Round Two on the Thursday after Thanksgiving
- CS 547 seminar on AR and Accessibility this Friday
CSCW 2018
End online harassment

“HeartMob... aims to be the place where those facing harassment can easily report abuse across social networks and find support from others who know what they’re going through” — The Washington Post

Want to take action?

Join the HeartMob!

We’re fighting fire with water, and working step by step to assist victims, end online bullying, and stop harassment.

Classification and Its Consequences for Online Harassment [Blackwell 2018]

Experiencing harassment?

You are not alone!

HeartMob lets you report and take action across platforms and get the help from the community.
Making sense of group chat

[Zhang and Cranshaw 2018]
Online harassment and content moderation: blocklists

- Blocklists (e.g., on Twitter): lists of accounts that are shared by harassed individuals — you block all of them.
- Qualitative investigation of users of blacklists found:
  - They don’t adequately protect users, and...
  - The blocked individuals feel unfairly blocked, due to disagreements on what constitutes harassment.
How do we manage trolls?
[Chandrasekharan et al., CSCW 2017–2018]

- Question: does banning bad behavior help, or just relocate the behavior?

- Dataset: Reddit banned /r/CoonTown and /r/FatPeopleHate as violating its hate speech policy

- Result: many accounts left; those that stayed, did not introduce hate speech into other subreddits they migrated into
Hive: collective design through network rotation [Salehi and Bernstein 2018]
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The future is not evenly distributed

- The systems we’ve been discussing so far have targeted those who join the digital revolution

- However, this revolution leaves many behind, either by virtue of their design or the infrastructure required to use them
Today: access

- Terribly, excruciatingly brief introductions of two fields that intersect substantially with HCI: accessibility and ICT for Development
  - Each has an intense acronym: A11Y and ICT4D

- Each examines how technology design can be rethought in the context of truly universal access
Accessibility
Why?

- 19% of the US population is disabled [US Census Bureau 2012]

- This takes many forms: [Jenny Lay-Flurrie]
  - Visual: colorblind, low vision, blind
  - Hearing: loss, deaf
  - Cognitive: dyslexia, seizure, learning disabilities, autism
  - Speech: speech impediment, unable to speak
  - Mobility: arthritis, quadripilegia
  - Neural: bipolar, anxiety, PTSD, depression

- Research projects often target one or more of these groups
Web page screen reader
[Asakawa and Itoh 1998]

- The first interface for reading the web out loud
- Explains: why is it hard to provide audio access to two-dimensional, complex web designs?
VizWiz
[Bigham et al., UIST ’10]

• Visual question answering for the blind

- What color is this pillow?
  - I can’t tell.
  - multiple shades of soft green, blue and gold
  - 89s

- What denomination is this bill?
  - 20
  - 24s

- Do you see picnic tables across the parking lot?
  - no
  - 13s

- What temperature is my oven set to?
  - it looks like 425 degrees but the image is difficult to see.
  - 69s

- Can you please tell me what this can is?
  - chickpeas.
  - 183s

- What kind of drink does this can hold?
  - no can in the picture
  - 91s

• 1 to 2 minute responses by keeping workers on fake tasks until needed
3d-printed tactile picture books

[Stangl, Kim and Yeh 2014]

• The pictures in picture books remain inaccessible to blind children

• 3D printing might allow us to make books that convey the contents of the pictures in a tactile channel
Google Street view accessibility
[Hara, Le, and Froehlich 2013]

- Crowdsourced effort to label Google Street view images for accessibility issues
How do blind users interact with touchscreen phones?

A “scrubbing”-style interface for voiceover
AI tailoring of user interfaces

[Gajos et al. 2008]

- Step one: model the user’s motor abilities
- Step two: customize the user interface to match those abilities
Ability-based design

[Gajos et al. 2010]

- Stop thinking about “dis”-ability, and think about ability-based interaction

Vision

That anyone, anywhere, at any time, can interact with technologies ideally suited to their specific situated abilities, and that our technologies do the work to achieve this fit.

CHI 2017 talk: https://vimeo.com/218330703
ICT4D
Why?

• Much of the world’s population cannot access the iPhone Xs… much less 4G networks

• This area’s goals:
  • Work with local populations to solve their problems
  • When appropriate, help extend network, power and other access to people in developing regions
  • Develop design solutions within challenging technical constraints
Mobile Q&A for farmers

[Patel et al. 2010]

- Forum for asking questions and browsing others’ questions and responses about farming
- All voice-based!
- For every user, this was their first online community
Village Base Station

[Heimerl et al. 2010]

• “How successful would bottom-up cellular networks be?”
• Local cellular network, utilizing existing infrastructure (e.g., power, network, and people) to operate at much lower cost
Digitizing paper forms
[Dell et al. 2012]

- Most records in low-resource settings are still captured and retained on paper; however, it can be difficult to aggregate and analyze paper data
- mScan: a CV-augmented system to help digitize multiple-choice forms
Do MOOCs help?
[Dillahunt, et al. 2014; 2016]

- MOOCs advertised global access, but most participants are already employed and have post-secondary degrees
- What happens to MOOC learners who cannot afford a formal education?
  - Lower rates of completion
  - Lots of optimism that this will improve employability, but little evidence that it does
After a decade designing ICT4D technologies, Kentaro Toyama argues that transformative change cannot rely on tech alone.

A reflective book: the technologies that Toyama and his team created were most effective for high-capacity organizations, not their intended users.

His argument: invest effort in people, not tech