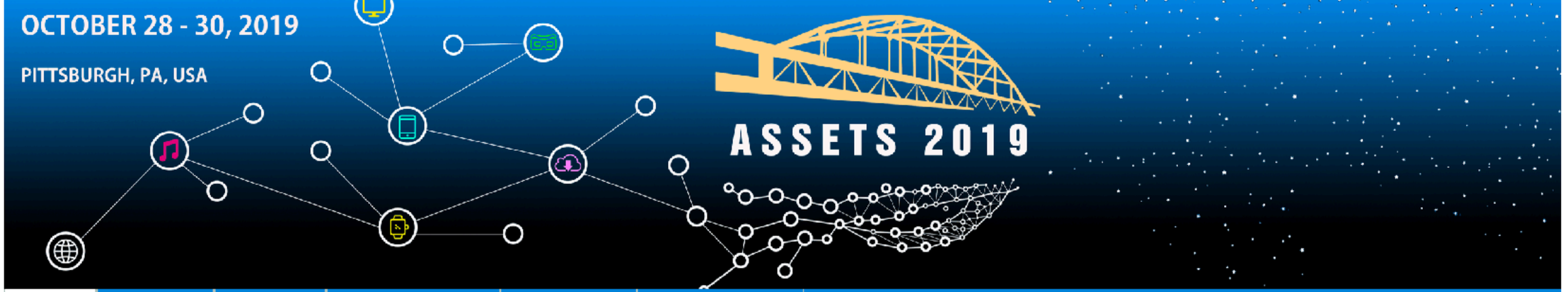
ACCESSIBILITY + HCI RESEARCH

CONFERENCES + COMMUNITIES



Home | Authors | Awards | Committees | Sponsors | Conference

The 21st International ACM SIGACCESS Conference on Computers and Accessibility

The ASSETS conference is the premier forum for presenting research on the design, evaluation, use, and education related to computing for people with disabilities and older adults. We invite high-quality original submissions on topics relevant to computing and accessibility.

For the first time, ASSETS is expanding its scope this year to include original high-quality research on topics related to education of computing accessibility.

All contributions are peer-reviewed by an international Program Committee. Accepted papers and the abstracts for posters and demonstrations, experience reports, and the student research competition will be archived in the ACM Digital Library. Authors of selected papers will be invited to submit extended versions of their papers to a special issue of the **ACM Transactions on Accessible Computing (TACCESS)**.

SIGACCESS
Special Interest Group on Accessible Computing

https://assets19.sigaccess.org/

CHI 2019

Weaving the Threads of CHI
1 of 3

TAKE THE TOUR

TOP KEYWORD TOPICS

▼ INSTITUTIONS PEOPLE ▼

AWARD
- Best Paper
- Honorable Mention
- N/A

Keywords Topics are ranked below by the number of technical papers they appear in. Click a keyword topic in the list to highlight papers in the chart. Each thread represents one keyword topic in a single paper. Click **the very end of lines** for details. INSTITUTIONS and PEOPLE are ranked in descending order based on their OVERALL number of papers in the program (not just the papers with top ranked keyword topics.)

TOP KEYWORDS

in accepted papers*

1	VIRTUAL REALITY
2	ACCESSIBILITY
3	AUGMENTED REALITY
4	PRIVACY
5	DESIGN
6	CROWDSOURCING
7	SOCIAL MEDIA
8	USER EXPERIENCE
9	CHILDREN
10	HAPTICS
11	PARTICIPATORY DESIGN
12	VISUALIZATION
13	3D PRINTING
14	INTERNET OF THINGS
15	MACHINE LEARNING
16	ONLINE COMMUNITIES
17	TRUST
18	CO-DESIGN
19	USER STUDY
20	FABRICATION

◀MORE PAPERS OVERALL FEWER▶

Each thread is an author/keyword/paper combination.
Click the very end of any line to explore connections.

AUTHORS

Highlight AUTHOR

SEARCH INSTITUTIONS

(All)

*Some keyword topics have multiple variations and remain separate. (e.g. Virtual Reality, VR, VR Sickness are separate topics.)

DESIGN AND ANALYSIS: GVU Center at Georgia Tech **DATA:** CHI 2019

Georgia Tech GVU Center

CHI 2019

Weaving the Threads of CHI 1 of 3

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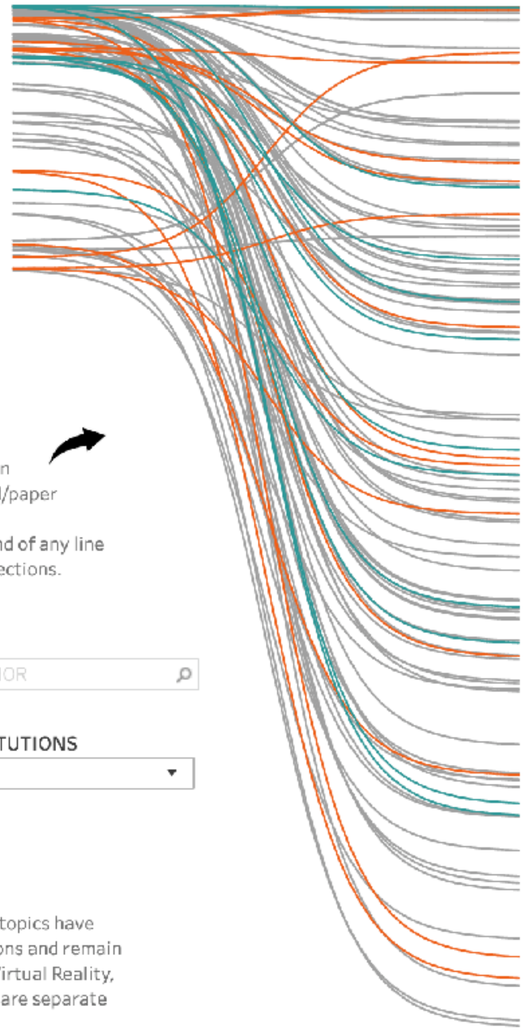

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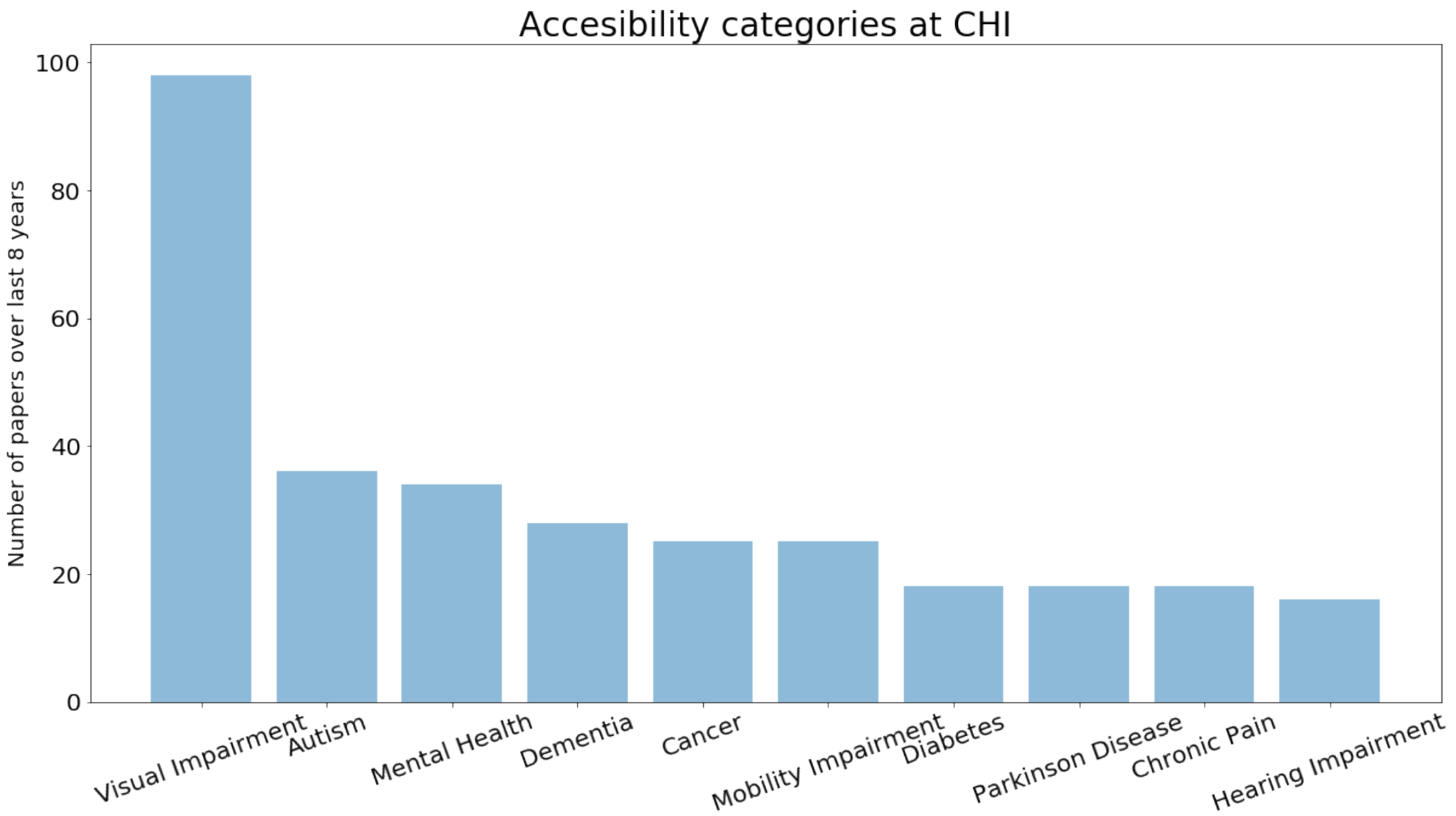


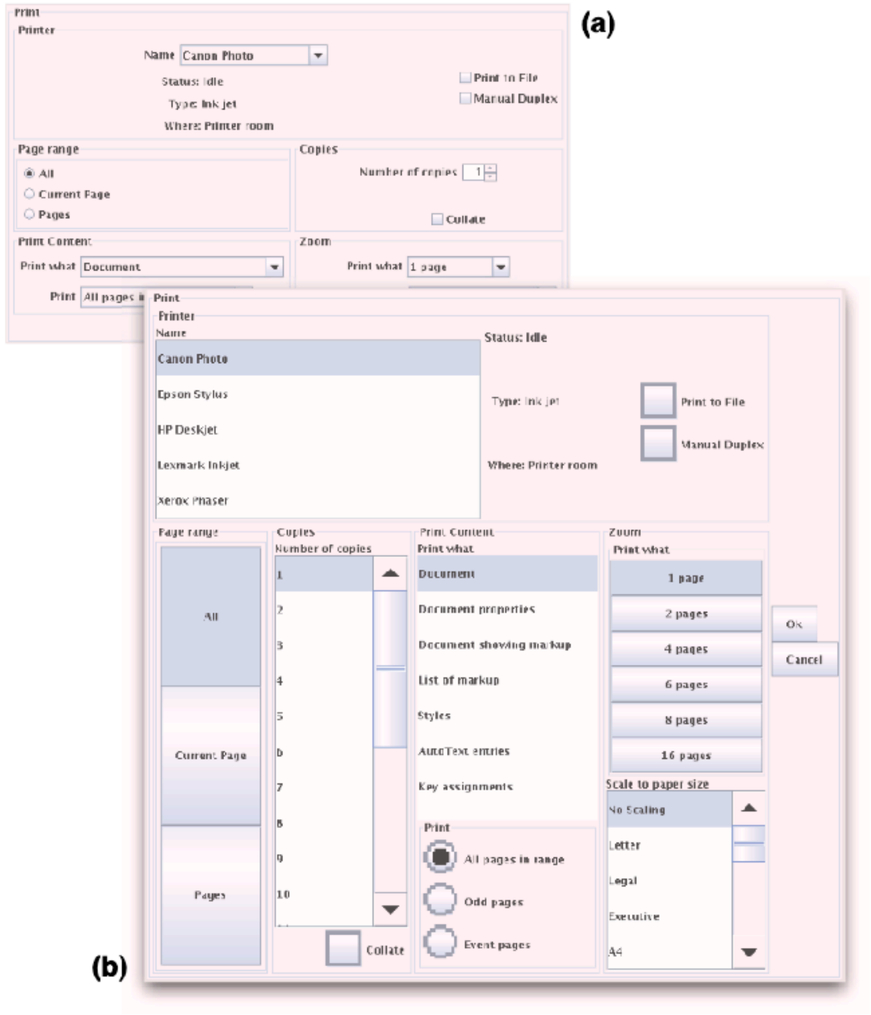
https://dl.acm.org/citation.cfm?id=3300692

TECHNOLOGIES

AI TAILORING OF UIS FOR MOTOR IMPAIRMENTS

1. Model users' motor abilities

2. Automatically adapt UIs (like printer dialog boxes) to better match abilities



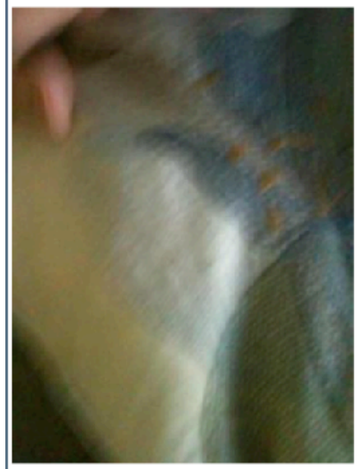
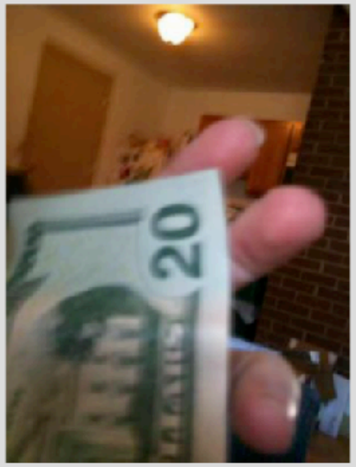
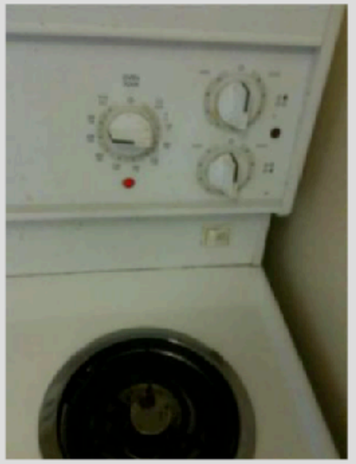
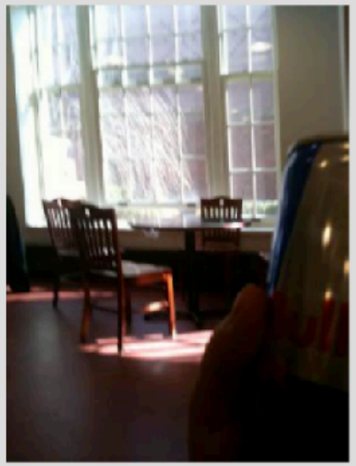
https://dl.acm.org/citation.cfm?id=1357250

CUESEE: VISUAL SEARCH TASKS

Helped guide people with low vision to select the correct item on a shelf with smart glasses

https://dl.acm.org/citation.cfm?id=2971730

VIZWIZ: NEARLY REAL-TIME ANSWERS TO VISUAL QUESTIONS

What color is this pillow?	What denomination is this bill?	Do you see picnic tables across the parking lot?	What temperature is my oven set to?	Can you please tell me what this can is?	What kind of drink does this can hold?
					
(89s) I can't tell. **(105s)** multiple shades of soft green, blue and gold	**(24s)** 20 **(29s)** 20	**(13s)** no **(46s)** no	**(69s)** it looks like 425 degrees but the image is difficult to see. **(84s)** 400 **(122s)** 450	**(183s)** chickpeas. **(514s)** beans **(552s)** Goya Beans	**(91s)** Energy **(99s)** no can in the picture **(247s)** energy drink

Used crowdsourcing to answer visual questions, 1–2 response times by keeping workers on fake tasks until needed

https://dl.acm.org/citation.cfm?id=1866080

Facade: Auto-generating Tactile Interfaces to Appliances

Anhong Guo[1], Jeeeun Kim[2], Xiang 'Anthony' Chen[1], Tom Yeh[2], Scott E. Hudson[1], Jennifer Mankoff[1], Jeffrey P. Bigham[1]

[1]Human-Computer Interaction Institute, Carnegie Mellon University
[2]Department of Computer Science, University of Colorado Boulder

{anhongg, xiangche, scott.hudson, jmankoff, jbigham}@cs.cmu.edu
{jeeeun.kim, tom.yeh}@colorado.edu

Carnegie Mellon

University of Colorado **Boulder**

3D Printed Interactive Board Book for Children with Visual Impairments

The Racing Auditory Display (RAD)

Brian A. Smith Shree K. Nayar

Columbia University

New York, NY, USA

{brian, nayar}@cs.columbia.edu

Editing Spatial Layouts through Tactile Templates for People with Visual Impairments

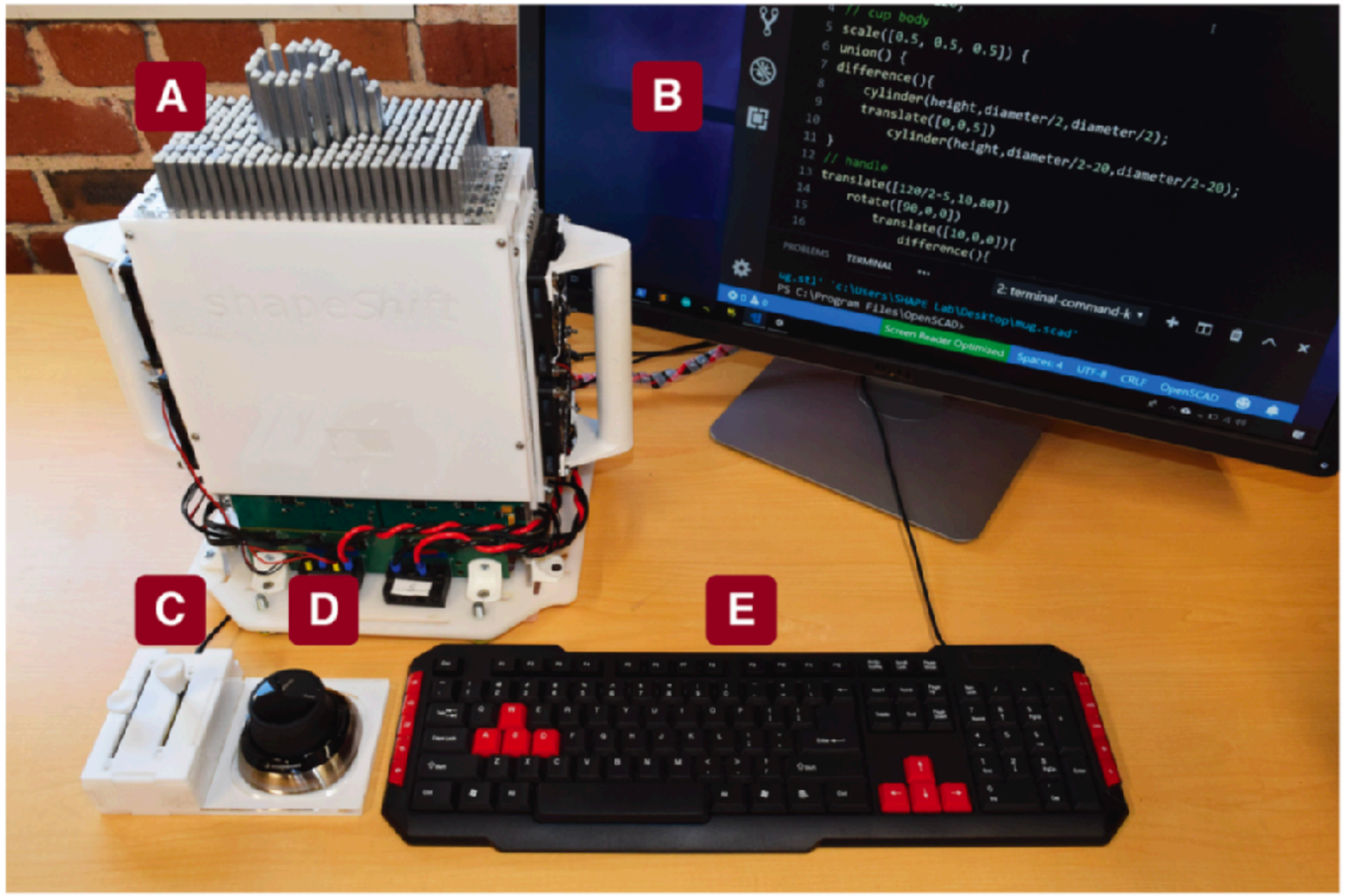
Jingyi Li[1], Son Kim[2], Joshua A. Miele[3], Maneesh Agrawala[1], Sean Follmer[1]

[1]Stanford University, [2]Vista Center for the Blind & Visually Impaired,
[3]The Smith-Kettlewell Eye Research Institute

3D MODELING WITH A TACTILE SHAPE DISPLAY

1. Users write 3D modeling code in OpenSCAD

2. Code is rendered tactically on a shape display, with sliders + 3D mouse to zoom or translate or rotate model



http://shape.stanford.edu/research/AccessibleCAD/AccessibleCAD-Poster_ASSETS18.pdf

METHODOLOGIES

QUALITATIVE RESEARCH METHODS

- Data Collection: Semi-structured interviews + contextual inquires
- Data Analysis: Grounded theory approach (making a codebook)
  - Sometimes, this fieldwork and these insights are enough for a paper, eg *How Teens with Visual Impairments Take, Edit, and Share Photos on Social Media* https://dl.acm.org/citation.cfm?id=3173650
  - Other times, these insights inform building some technology...
- Designing: co-design, participatory design
- Evaluation: need real users

HCI AND AFFECTIVE HEALTH

- Looked at papers about depression, anxiety, and bipolar disorder
- 52% of papers published in the last 2 years
- Most papers focus on automated diagnosis and self tracking
- Over-emphasis on data production without design implications
- Only 16 (out of 139) papers evaluated technologies in a clinical context

https://dl.acm.org/citation.cfm?id=3300475

RAPID PROTOTYPING FOR THE CLINIC

- Investigated role of consumer fabrication technologies in *clinical* settings
- 4 month observation where authors worked as expert fabricators (3d printing prosthetics, etc) for two different clinics
- Turns out, rapid prototyping does not align with clinical practice and its "do no harm" ethos -> We should focus on *adaptive design* instead

(a) The Orthoplast grip

(b) Non-ergonomic design

(c) Modular flexible insert

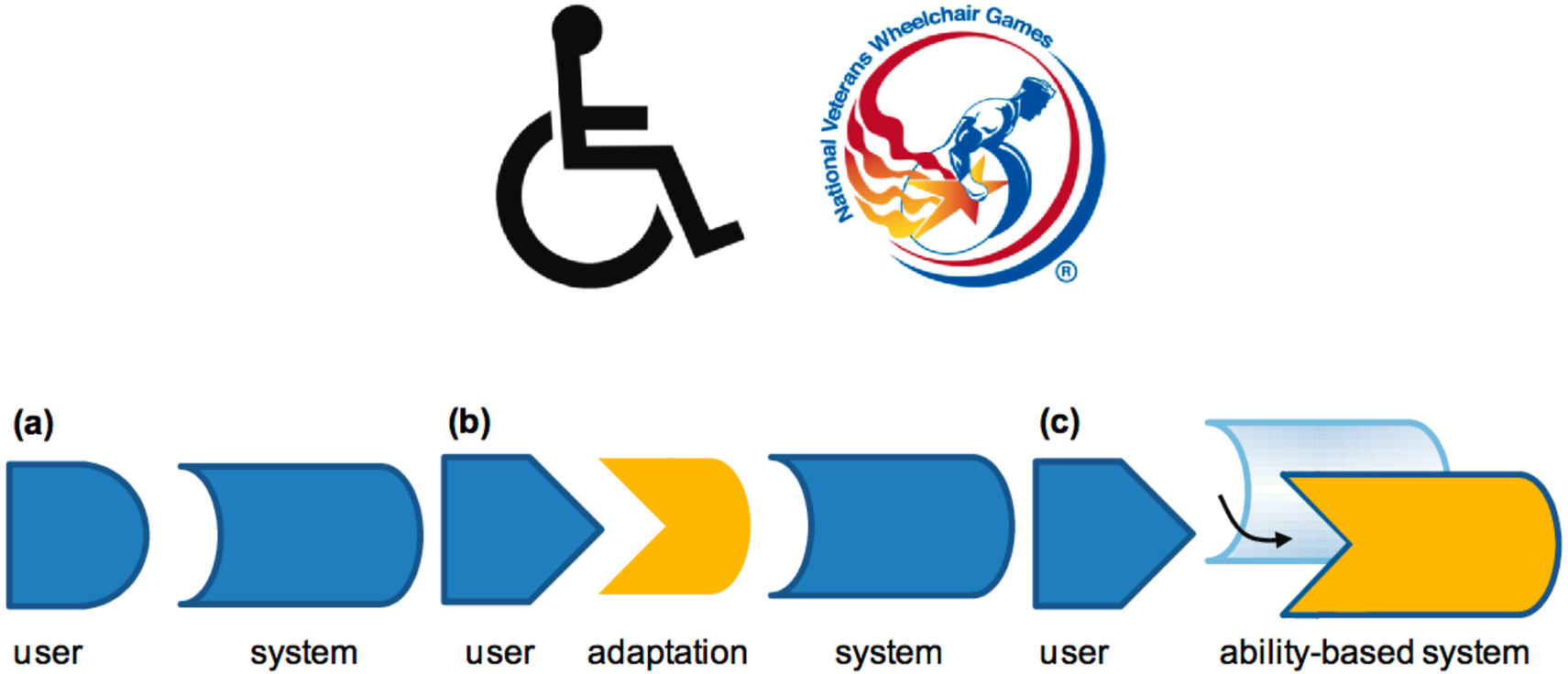
(d) Final knife set

https://dl.acm.org/citation.cfm?id=3300544

PERSPECTIVES

ABILITY-BASED DESIGN

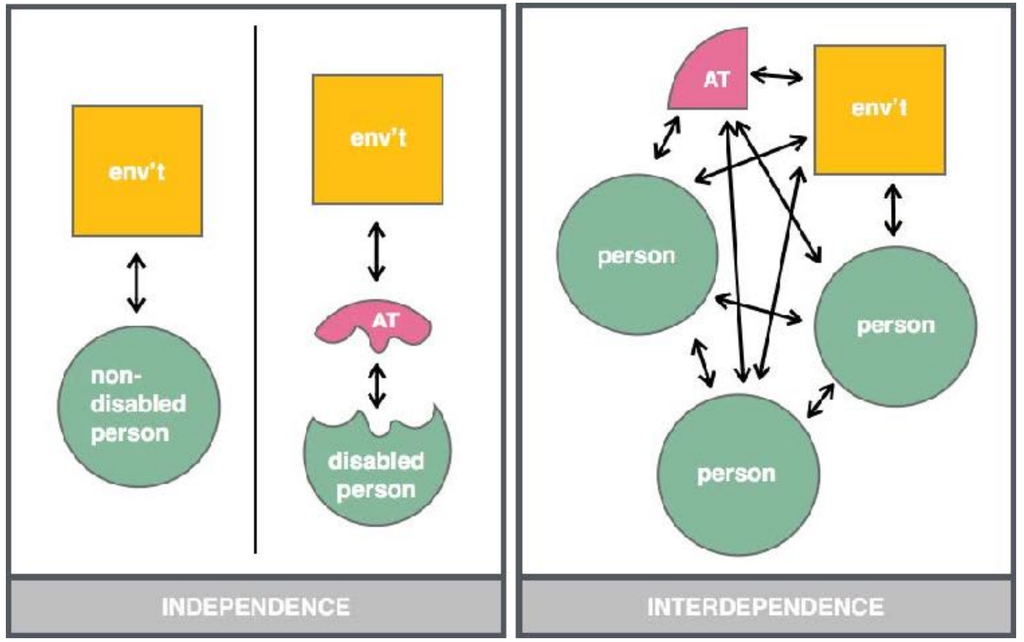
When designing accessible technologies, the question to ask is not "What disability does a person have?", but rather, "What can a person *do*?"



Wobbrock, J. O., Kane, S. K., Gajos, K. Z., Harada, S., & Froehlich, J. (2011). Ability-based design: Concept, principles and examples. ACM Transactions on Accessible Computing (TACCESS)

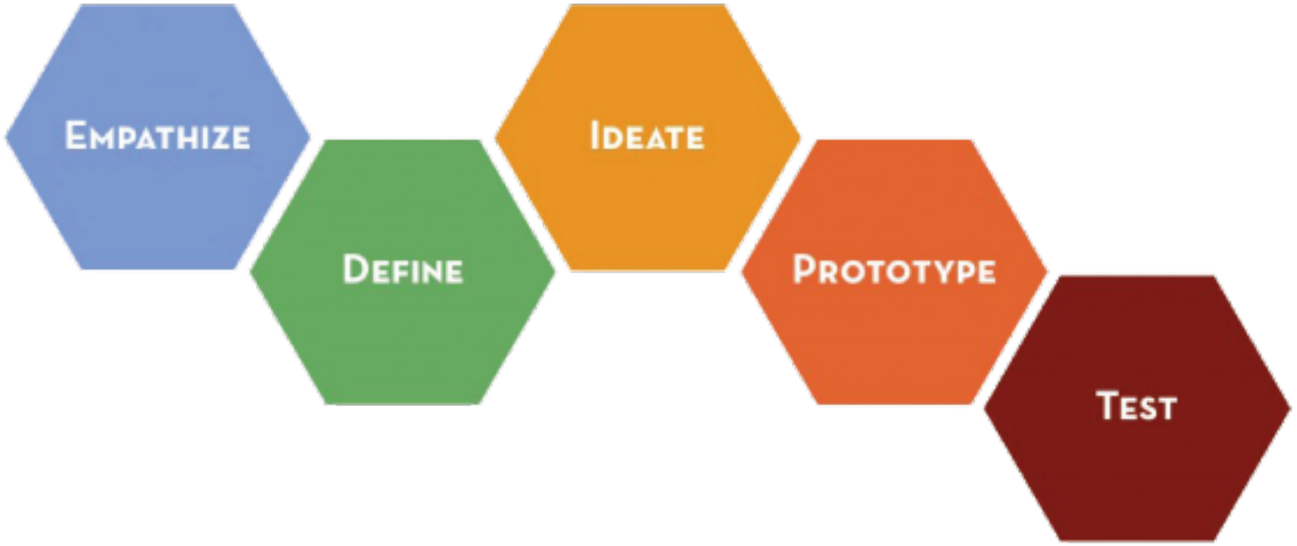
INTERDEPENDENCE AS A LENS FOR ASSISTIVE TECHNOLOGY DESIGN

Interdependence as a way of thinking allows us to see relationships, simultaneous forms of assistance, reveals often-represented contributions of people with disabilities, and destablizes traditional power hierarchies.



Bennett, Cynthia L., Erin Brady, and Stacy M. Branham. "Interdependence as a frame for assistive technology research and design." *Proceedings of the 20th International ACM SIGACCESS Conference on Computers and Accessibility*. ACM, 2018.

THE PROMISE OF EMPATHY: DESIGN, DISABILITY, AND KNOWING THE "OTHER"



- Empathy excercises (e.g., simulations, personas) may reinforce existing power structures between designer and non-designer, disabled and nondisabled

Bennett, Cynthia L. and Daniela Rosner. "The Promise of Empathy: Design, Disability, and Knowing the "Other"." *CHI 2019*.

CRITIQUES OF EMPATHY

- Empathy design exercises are a slippery slope that
  - denies the authority of the disabled experience
  - differenitates disabled and designing bodies
  - treats the empathized as spectacle

SUGGESTIONS GOING FORWARD

- Empathy allows us to imagine what it is to be “like” the other, but not to be “with” the other
    - Rather than seek to represent another's experience, we seek partnerships in imagining the design encounter
    - Rather than achieve an understanding, we seek a process of ongoing attunement
    - Rather than attempt symmetry, we recognize and work with asymmetry

CS 376 — Human-Computer Interaction Research Fall 2018

This course is a broad graduate-level introduction to HCI research. We cover seminal work on interactive systems, moving through recent contributions in interaction, social computing, and design.

This is a 4-unit course. For undergraduates or masters students in CS or SymSys, earning an A- or better in CS147 or CS247 is a prerequisite. All graduate and PhD students from other departments are welcome. Graduate students with a unit cap may enroll for 3 units; the workload is the same. Students registered for the class will receive a letter grade — the "credit/no credit" option is not available.

Students in this course are encouraged to attend CS547, the HCI seminar; Fridays 12:50-2:05pm.

Syllabus

Topics include ubiquitous computing, social computing, design tools, design methods, programming user interfaces, crowdsourcing, visualization, and creativity tools.

Reading commentaries

We read two papers per class. You will submit paper commentaries by 11:59pm the night before each class, to prepare for our discussion.

Leading a discussion

Once during the quarter, you will co-lead a class discussion on that day's readings. Read all student commentaries before class and integrate them into the discussion. On discussion day, submit your discussion materials instead of your commentary using the online submission system. Grade all student commentaries.

Project

In this course, you and two partners will complete a research project with the goal of submitting it to a top-tier HCI venue.

Schedule

Tuesday and Thursday, 4:30pm to 5:50pm
Littlefield 107

Course Staff

Michael Bernstein
Office Hours: Th 3:00-4:30pm, Gates 384

Geza Kovacs (TA)
Office Hours: Tu 2:00-3:00pm and 4:00-4:30pm, Gates 368

Questions?

Email cs376@cs.stanford.edu.