

Accessibility & Aging

**Week 8 - Day 1
Overview**

Isabela Figueira, Alyson Yin, and Zoey Yang

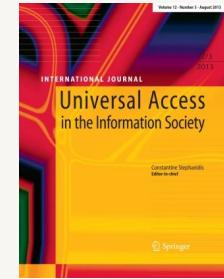
Primary Venues

- CHI → under Accessibility & Aging
- ASSETS (*SIGACCESS Conference on Computers and Accessibility*)
- TACCESS (*ACM Transactions on Accessible Computing*) – Journal



Related Venues

- Conferences supported by SIGACCESS through in-cooperation
 - **W4A** (Web for All)
 - **ICT4AWE** (International Conference on Information and Communication Technologies for Aging Well and e-Health)
 - **HEALTHINF** (International Conference on Health Informatics)
 - **DSAII** (Software Development and Technologies for Enhancing Accessibility and Fighting Info-exclusion)
- **CSCW** → under **Domain-specific Social and Collaborative Applications**. Including applications to healthcare, transportation, design, manufacturing, gaming, ICT4D, sustainability, education, accessibility, global collaboration, or other domains.
- Unaffiliated with ACM:
 - **UAIS** (Universal Access in the Information Society)
 - **HCII** (HCI International)



ASSETS vs CHI

- **Size**
 - CHI is a vast venue, whereas ASSETS is more compact and specialized
 - 2023 Submission (Accepted) → ASSETS: 182 (55), CHI: 3186 (879), CHI Acc.&Ag.: ~200 (unknown)
- **Audiences**
 - **CHI**: a diverse audience from various domains such as computer science, design, and psychology
 - **ASSETS**: a specialized audience interested in accessibility and assistive technologies for people with disabilities and older adults

ASSETS vs CHI

- **Language**
 - ASSETS emphasizes inclusive language use more than CHI
 - We'll see an example of this during next lecture discussion
- **Submission accessibility**
 - ASSETS is super strict on submission accessibility
 - Inaccessible paper will be desk rejected
 - Inaccessible CHI submission will only be reassigned to another reviewer

Core Research Questions or Topics

- Design and Usage of Technology for People with Disabilities
- Technology for Older Adults
- Technology Use and Design for Specific (Health) Needs

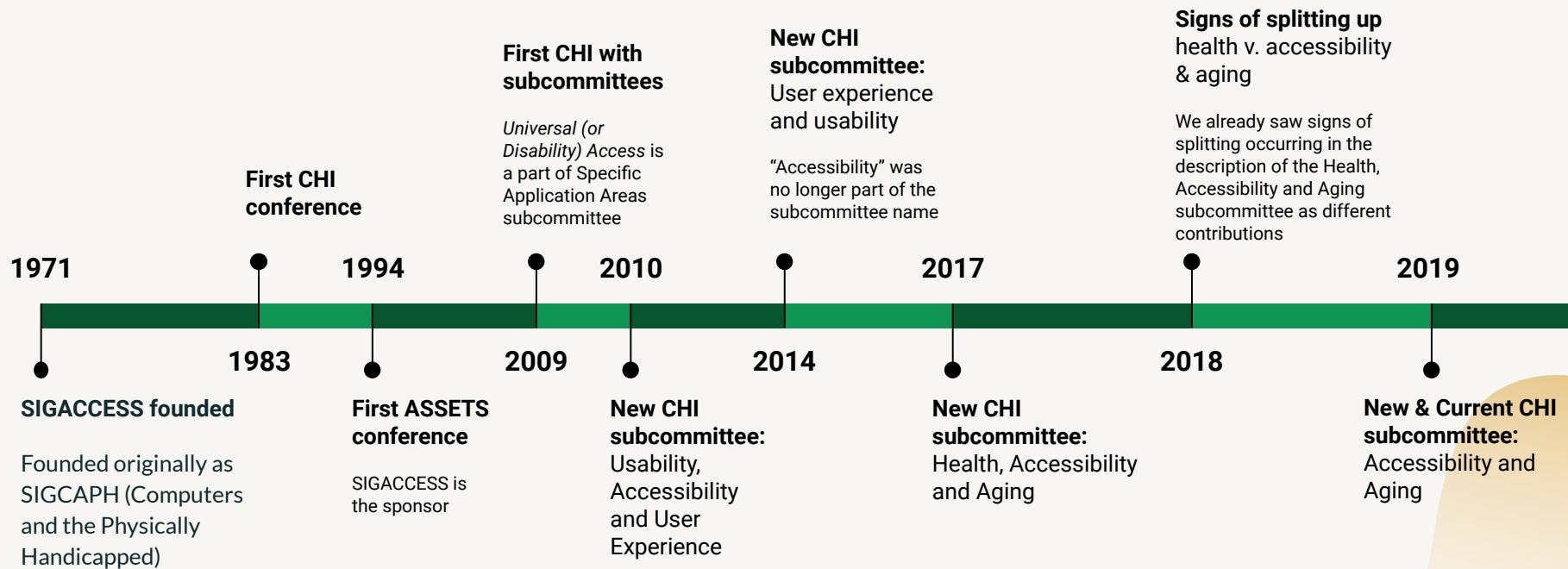
However, works focus on health outcomes or interactions with health data/providers fits better in **Health** subcommittee

The topic extends beyond merely making technology accessible; it encompasses a diverse range of subjects aimed at benefiting relevant user groups.

Accessibility contributions beyond HCI

- **Disability studies**
 - “A study on accessibility in an Old Italian City: when the past is worth more than the present” ([Disability & Society](#))
- **Gerontology** (study of aging)
 - “Risk Factors for Falling Among Community-Based Seniors Using Home Care Services” ([The Journals of Gerontology](#))
- **Urban Planning**
 - “Accessibility planning in American metropolitan areas: Are we there yet?” ([Urban Studies](#))
- **Law/Legal study**
 - “Rethinking Equality and Difference: Disability Discrimination in Public Transportation” ([Yale Law Journal](#))
- **Anthropology**
 - “Anthropology and ableism” ([American Anthropologist](#))
- and more

CHI & ASSETS Timeline



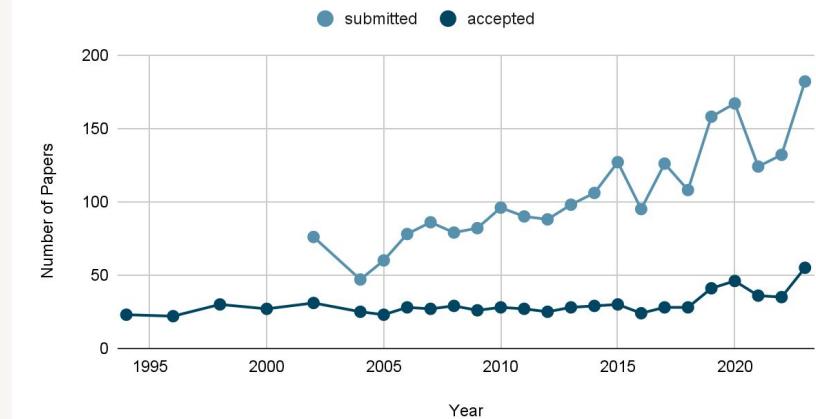
ASSETS Submissions from year to year

| Year | Submitted | Accepted | Rate |
|-------------------|-----------|----------|-------|
| ASSETS '23 | 182 | 55 | 30% |
| ASSETS '22 | 132 | 35 | 26.5% |
| ASSETS '21 | 124 | 36 | 29% |
| ASSETS '20 | 167 | 46 | 28% |
| <u>ASSETS '19</u> | 158 | 41 | 26% |
| <u>ASSETS '18</u> | 108 | 28 | 26% |
| <u>ASSETS '17</u> | 126 | 28 | 22% |
| <u>ASSETS '16</u> | 95 | 24 | 25% |
| <u>ASSETS '15</u> | 127 | 30 | 24% |
| <u>ASSETS '14</u> | 106 | 29 | 27% |
| <u>ASSETS '13</u> | 98 | 28 | 29% |
| <u>ASSETS '04</u> | 47 | 25 | 53% |
| <u>ASSETS '02</u> | 76 | 31 | 41% |
| Overall* | 941 | 264 | 28% |

*based on 02, 04, and 13-19

CHI: 24%

ASSETS submitted vs accepted



Source: ACM DL

Accessibility Papers at ASSETS vs CHI

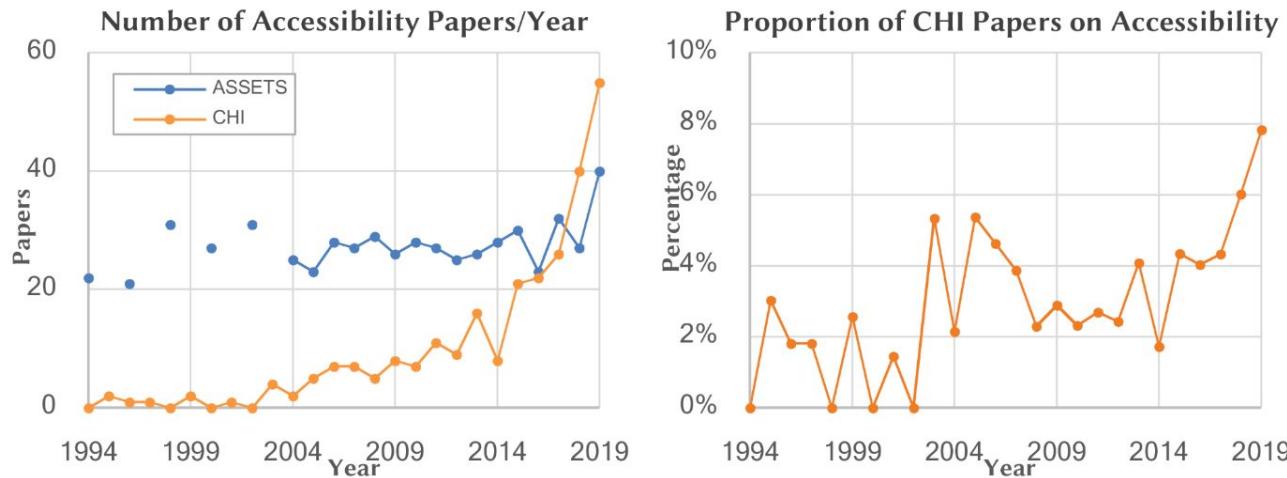


Figure 1: Accessibility paper counts at CHI and ASSETS over time (*left*) show that accessibility is growing as a field, especially the past five years. The percent of CHI papers on accessibility (*right*) shows that accessibility research has grown as a proportion of all CHI papers, reaching nearly 8% of CHI papers in 2019.

Discuss

How do you choose to submit to ASSETS vs CHI?

Framing Papers

- Kelly Mack, Emma McDonnell, Dhruv Jain, Lucy Lu Wang, Jon E. Froehlich, and Leah Findlater. What Do We Mean by “Accessibility Research”? A Literature Survey of Accessibility Papers in CHI and ASSETS from 1994 to 2019. CHI (2021). 
- Jennifer Mankoff, Gillian R. Hayes, and Devva Kasnitz. Disability Studies as a Source of Critical Inquiry for the Field of Assistive Technology. ASSETS (2010).
- Jacob O. Wobbrock, Shaun K. Kane, Krzysztof Z. Gajos, Susumu Harada, and Jon Froehlich. Ability-Based Design: Concept, Principles, and Examples. TACCESS 3, 3 (2011).

Optional resources:

- Shaun K. Kane, Jeffrey P. Bigham, and Jacob O. Wobbrock. Slide Rule: Making Mobile Touch Screens Accessible to Blind People Using Multi-Touch Interaction Techniques. ASSETS (2008).
- Cynthia L. Bennett, Erin Brady, and Stacy M. Branham. Interdependence as a Frame for Assistive Technology Research and Design. ASSETS (2018). 



What Do We Mean by “Accessibility Research”?

A Literature Survey of Accessibility Papers in CHI and ASSETS from 1994 to 2019

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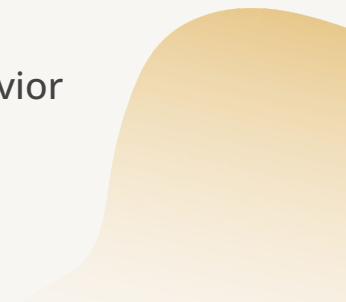
Leah Findlater

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What do we mean by “Accessibility Research”?

- What this paper is:
 - Literature review of 836 accessibility papers in ASSETS and CHI to analyze current state of literature and understand historical context
- Findings highlight
 - Overemphasis on BLV in the literature
 - Median sample size of 13 disabled and older adult groups
 - Research types are paired with typical groups - e.g., supporting communication for d/Deaf people and personal informatics for behavior change for autistic people (although they don't want it)





What do we mean by “Accessibility Research”?

- Tensions in paper methods
 - e.g., access labor of participants in Participatory Design (which also has been “diluted” in HCI)
 - Proxies were used in 8% of papers, usually with children with autism or people with cognitive disabilities - controversial
 - Ability-based comparisons - sets nondisabled as “normal” typically
- Calls for
 - Researcher reflection on research practices
 - Including and engaging with people with disabilities
 - Dismantling ableism, not perpetuating it





What do we mean by “Accessibility Research”?

Table 2: The frequency of applied codes for *community of focus*, *issues addressed*, and *contribution type*.

| Community of Focus | Papers w/ Code | This Code Only | Issue Addressed | Papers w/ Code | This Code Only | Contribution Type | Papers w/ Code | This Code Only |
|--------------------|----------------|----------------|---------------------|----------------|----------------|-------------------|----------------|----------------|
| BLV | 220 (43.5%) | 208 (41.1%) | Digital Access | 186 (36.8%) | 122 (24.1%) | Empirical | 305 (60.3%) | 171 (33.8%) |
| Motor/Physical | 72 (14.2%) | 59 (11.7%) | Understanding Users | 139 (27.5%) | 89 (17.6%) | Artifact | 281 (55.5%) | 182 (36.0%) |
| DHH | 57 (11.3%) | 43 (8.5%) | Physical Access | 105 (20.8%) | 26 (5.1%) | Theoretical | 44 (8.7%) | 6 (1.2%) |
| Cognitive | 46 (9.1%) | 29 (5.7%) | Independence | 93 (18.4%) | 14 (2.8%) | Methodological | 16 (3.2%) | 2 (0.4%) |
| General Disability | 46 (9.1%) | 31 (6.1%) | Communication | 81 (16.0%) | 45 (8.9%) | Dataset | 7 (1.4%) | 2 (0.4%) |
| Older Adult | 45 (8.9%) | 29 (5.7%) | Behavior Change | 39 (7.7%) | 19 (3.8%) | Survey | 3 (0.6%) | 0 (0.0%) |
| Autism | 31 (6.1%) | 21 (4.2%) | Other | 59 (11.7%) | 25 (4.9%) | | | |
| IDD | 14 (2.8%) | 8 (1.6%) | | | | | | |
| Other | 46 (9.1%) | 20 (4.0%) | | | | | | |

Disability Studies as a Source of Critical Inquiry for the Field of Assistive Technology

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Disability Studies as a Source of Critical Inquiry for the Field of Assistive Technology

Advocating for:

- Accessibility and assistive tech researchers to adopt disability studies theory and learnings
- To increase representation of disabled people in accessibility work
- Caution around the medical model which “overemphasizes “fixing” the individual rather than addressing larger-scale societal issues related to access and oppression.”

Disability Studies as a Source of Critical Inquiry for the Field of Assistive Technology

2 case studies

1. Autism

- Balancing goals of autistic children, parents, and teachers.
- Medicalization of disability, “special” education vs “regular” education

2. Computer accessibility

- How design of user interfaces can create access or barriers
- E.g., the web

Ability-Based Design: Concept, Principles and Examples

JACOB O. WOBBROCK and SHAUN K. KANE, University of Washington

KRZYSZTOF Z. GAJOS, Harvard School of Engineering and Applied Sciences

SUSUMU HARADA and JON FROEHLICH, University of Washington

Ability-Based Design: Concept, Principles and Examples

- Shifting focus to ability rather than disability or deficits
- Centering ability when designing assistive technology



Fig. 1. The logo on the left is commonly associated with *dis*-ability, which is focused on something lacking. Contrast this with the logo on the right from the National Veterans Wheelchair Games,¹ which communicates *ability*: strength, speed, power, and determination. (Used with permission of the U.S. Department of Veterans Affairs. The logo is a registered trademark of the U.S. Department of Veterans Affairs.)



Ability-Based Design: Concept, Principles and Examples

- Centering ability when designing assistive technology
- Presents ability-based design as a method

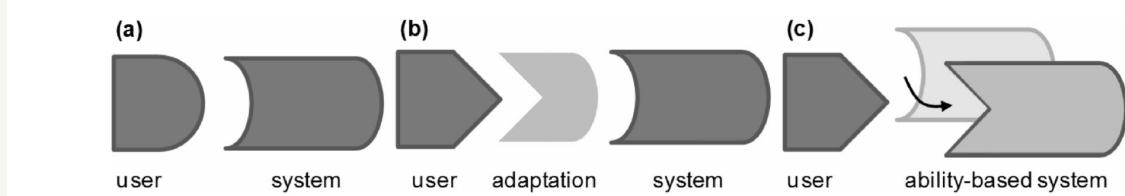


Fig. 2. (a) A user whose abilities match those presumed by the system. (b) A user whose abilities do not match those presumed by the system. Because the system is inflexible, the user must be adapted to it. (c) An ability-based system is designed to accommodate the user's abilities. It may adapt or be adapted to them.

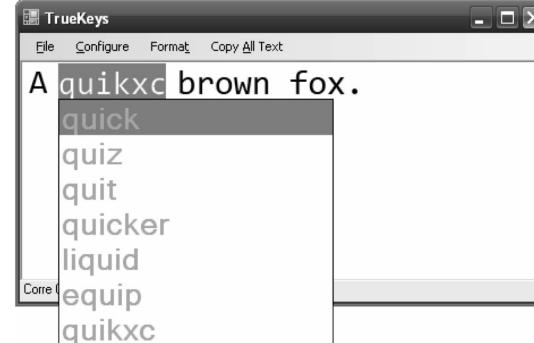


Fig. 3. TrueKeys' N -best list of corrections for the keystrokes "quikxc." Conventional spell checkers would not provide some of the possibilities uncovered by TrueKeys, for example, "liquid" or "equip," as these suggestions are based on more than lexicographic similarity, including, for example, considerations of keyboard geometry.

What's the contribution type?

What Do We Mean by “Accessibility Research”?

A Literature Survey of Accessibility Papers in CHI and ASSETS from 1994 to 2019

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Disability Studies as a Source of Critical Inquiry for the Field of Assistive Technology

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Ability-Based Design: Concept, Principles and Examples

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SUSUMU HARADA and JON FROEHLICH, University of Washington

Framing Papers Contributions



Ways of thinking

- Social model vs medical model
- Ability, not deficit
- Considering other disabilities and not just BLV
- Not centering able-bodiedness as “normal” and disability as not normal



Methodology

- Advocating for people with disabilities
- Including PWD in research & design
- Real participatory design
- Not relying only on proxies
- New methods for creating artifacts centering ability



Theoretical

- Including disability studies in HCI research



Dataset

- Mack et al. CHI 2021 produced a dataset for the research community

Most Cited at ASSETS

2019 SIGACCESS ASSETS
Paper Impact Award winner

2021 SIGACCESS ASSETS Impact
Award Winner

| Downloaded | Cited |
|---|---|
| 1 October 2009 Freedom to roam: a study of mobile device adoption and accessibility for people with... | Assets '09: Proceedings of the 11th international ACM SIGACCESS... Shaun K. Kane, Chandrika Jayant, + 2 Cited 274 times |
| 2 October 2008 Slide rule: making mobile touch screens accessible to blind people using multi-touch interaction... | Assets '08: Proceedings of the 10th international ACM SIGACCESS confer... Shaun K. Kane, Jeffrey P. Bigham, + 1 Cited 271 times |
| 3 October 2010 Disability studies as a source of critical inquiry for the field of assistive technology | ASSETS '10: Proceedings of the 12th international ACM SIGACCESS... Jennifer Mankoff, Gillian R. Hayes, + 1 Cited 202 times |
| 4 July 2002 Designing for dynamic diversity: interfaces for older people | Assets '02: Proceedings of the fifth international ACM conference on... Peter Gregor, Alan F. Newell, Mary Zajicek Cited 191 times |
| 5 October 2011 Empowering individuals with do-it-yourself assistive technology | ASSETS '11: The proceedings of the 13th international ACM SIGACCESS... Amy Hurst, Jasmine Tobias Cited 186 times |
| 6 October 2019 Sign Language Recognition, Generation, and Translation: An Interdisciplinary Perspective | ASSETS '19: Proceedings of the 21st International ACM SIGACCESS... Danielle Bragg, Oscar Koller, Mary Bellard, + 9 Cited 184 times |
| 7 October 2018 Interdependence as a Frame for Assistive Technology Research and Design | ASSETS '18: Proceedings of the 20th International ACM SIGACCESS... Cynthia L. Bennett, Erin Brady, + 1 Cited 166 times |
| 8 October 2011 Supporting blind photography | ASSETS '11: The proceedings of the 13th international ACM SIGACCESS conferen... Chandrika Jayant, Hanjie Ji, Samuel White, + 1 Cited 129 times |

Most Downloaded at ASSETS

Downloaded Cited

| | | | |
|--|---|---|--|
| 1 October 2019 Sign Language Recognition, Generation, and Translation: An Interdisciplinary Perspective <i>ASSETS '19: Proceedings of the 21st International ACM SIGACCESS...</i>  Danielle Bragg ,  Oscar Koller , + 10 <i>Total Downloads 7,286</i> | 2 July 2002 Designing for dynamic diversity: interfaces for older people <i>Assets '02: Proceedings of the fifth international ACM conference on...</i>  Peter Gregor ,  Alan F. Newell ,  Mary Zajicek <i>Total Downloads 5,902</i> | 3 October 2005 Research-derived web design guidelines for older people <i>Assets '05: Proceedings of the 7th international ACM SIGACCESS...</i>  Sri Kurniawan ,  Panayiotis Zaphiris <i>Total Downloads 5,502</i> | 4 October 2020 Living Disability Theory: Reflections on Access, Research, and Design <i>ASSETS '20: Proceedings of the 22nd International ACM SIGACCESS...</i>  Megan Hofmann ,  Devva Kasnitz , + 2 <i>Total Downloads 4,693</i> |
| 5 October 2008 Slide rule: making mobile touch screens accessible to blind people using multi-touch interaction... <i>Assets '08: Proceedings of the 10th international ACM SIGACCESS...</i>  Shaun K. Kane ,  Jeffrey P. Bigham , + 1 <i>Total Downloads 4,436</i> | 6 October 2014 Technology to reduce social isolation and loneliness <i>ASSETS '14: Proceedings of the 16th international ACM SIGACCESS conferen...</i>  Ron Baecker ,  Kate Sellen ,  Sarah Crosskey , + 2 <i>Total Downloads 4,413</i> | 7 October 2013 Good fonts for dyslexia <i>ASSETS '13: Proceedings of the 15th International ACM SIGACCESS...</i>  Luz Rello ,  Ricardo Baeza-Yates <i>Total Downloads 4,391</i> | 8 October 2018 Interdependence as a Frame for Assistive Technology Research and Design  <i>ASSETS '18: Proceedings of the 20th International ACM SIGACCESS...</i>  Cynthia L. Bennett ,  Erin Brady , + 1 <i>Total Downloads 4,168</i> |

As of February 2024

Discuss

Why are over 43% of accessibility papers in ASSETS and CHI about accessibility for BLV people?

Discuss

Do you see deficit discourse in other venues?

Discuss

Is there a correlation between the rise of the social model of accessibility and the split of the accessibility and aging subcommittee from health?

Accessibility & Aging

**Week 8 - Day 2
Discussion**

Isabela Figueira, Alyson Yin, and Zoey Yang



How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

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How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

Overview

- An interview study exploring **how online test support people with cognitive and mental disabilities**, and **challenges and opportunities** of using online test for them



How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

Method

- Interview with 17 participants who are *diagnosed with mental disabilities* (13) or who *suspect they may have a condition* (4)
- Thematic analysis

| ID | Gender | Age | Disability/Disorder | Diagnosed |
|-----|------------|---------|---|-----------|
| P1 | M | 18 - 30 | Autism | Y |
| P2 | F | 40 - 50 | ADHD, Autism | Y |
| P3 | M | 50 - 60 | ADD, Asperger's Syndrome, schizoid personality disorder | Y |
| P4 | F | 40 - 50 | Autism, learning disorder, generalized anxiety disorder | Y |
| P5 | F | 18 - 30 | Borderline personality disorder | Y |
| P6 | M | 18 - 30 | Borderline personality disorder | Y |
| P7 | M | 50 - 60 | Bipolar disorder, generalized anxiety disorder, social phobia | Y |
| P8 | F | 18 - 30 | Bipolar disorder, major depressive disorder | Y |
| P9 | F | 30 - 40 | Dyslexia | Y |
| P10 | M | 18 - 30 | Dyslexia | Y |
| P11 | F | 18 - 30 | Dyscalculia | Y |
| P12 | M | 50 - 60 | Traumatic brain injury | Y |
| P13 | M | 30 - 40 | Traumatic brain injury | Y |
| P14 | M | 30 - 40 | Autism | N |
| P15 | F | 30 - 40 | Autism | N |
| P16 | F | 30 - 40 | Dyscalculia | N |
| P17 | Non-binary | 18 - 30 | Dyscalculia | N |

So, what does the online test exactly mean here?

"These tests assess **behavioral** and **cognitive** traits using either **behavioral tasks or survey questions**, followed by a **results page** that tells participants where they stand."

Online Text Examples in the paper →

(A) The Aspie-Quiz — evaluates **neurodiverse** traits in adults. It "can be used to give a reliable indication of autism spectrum traits prior to eventual diagnosis"

(B) Several **cognitive assessment** tests (cognitive style, visual reasoning, etc.), with an example task from "cognitive snapshot" test

ASPIE-QUIZ

Final version 4

Disclaimer: This questionnaire should not be taken as a substitute for a professional evaluation.

Some of the questions in this quiz are phrased so that a neurodiverse (Aspie) answer is 'yes,' and some so that a neurodiverse answer is 'no'.

121 MIXED QUESTIONS

? - DON'T KNOW
0 - NO/NEVER
1 - A LITTLE
2 - YES/OFTEN

1 Would you quickly become impatient and irritated if you could not find a solution to a problem?

0 understand and communicate with odd people than with ordinary people? ? 0 1 2

for you than for others to keep friends? ? 0 1 2

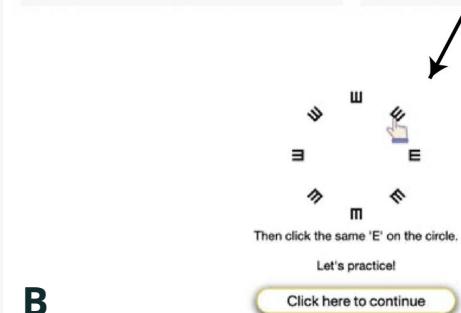
as often misunderstand you? ? 0 1 2

difficult to take notes in lectures? ? 0 1 2

have extra sensitive hearing? ? 0 1 2

The screenshot shows a grid of four cognitive assessment tests:

- Cognitive Style:** Estimated Time: 8 minutes, 471 brains completed. Question: What is your cognitive style? Buttons: Go!, Share, Tweet.
- Famous Faces:** Estimated Time: 8 minutes, 200 brains completed. Question: How well can you identify faces? Buttons: Go!, Share, Tweet.
- Visual Reasoning:** Estimated Time: 5 minutes, 1178 brains completed. Question: Spot the pattern to complete the puzzle. Buttons: Go!, Share, Tweet.
- Cognitive Snapshot:** Estimated Time: 12 minutes, 2231 brains completed. Question: What are your cognitive skills? Buttons: Go!, Share, Tweet.



B

A



How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

Why this is worth study (according to the authors)?

- **Prevalence:** 20% of the US population and 1/3 of people worldwide have experienced a cognitive or mental disability at some point in their lives
- **Barriers:** diagnosing these conditions are difficult
- **Online Tests** are often used by people with suspected or known cognitive or mental disabilities to understand and connect over the conditions
- **Research gap exist:** we don't know whether and how effectively online tests contribute to healthcare and general support systems for people with diagnosed or suspected conditions.



How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

Literature Review/Areas of inquiry

- This paper **draws largely from health**, especially psychology and psychiatry
 - Diagnosis and its barriers
- Within HCI – **Accessibility and Health**
 - Assistive technologies & Design
 - Online Resources & Collaboration → cites a lot of CSCW papers
 - Online Tests



How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

Findings (1/4)

- **Online tests can support** people who **suspect** they have a cognitive or mental disability
 - by removing **barriers** to professional diagnosis
 - lack of access (costs, processes, available providers, etc.)
 - family resistance
 - by **fostering an acceptance** of their disability
 - providing ways of understanding and coping with potential disabilities
 - without risks associated with professional diagnosis



How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

Findings (2/4)

- **Online tests can supplement** professional diagnoses
 - by providing more **support**
 - participants with prior diagnoses felt **under-supported** and **uninformed**
 - online tests could provide **more specific information** about their disability
 - *taking tests as being “part of the awareness of knowing myself”*
 - online test as a **tracking** tool of mental state
 - can help **forming** new **identities**
 - helped self-understanding and form a disability identity
 - an important step in adapting to a disability





How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

Findings (3/4)

- **Online tests provide a basis of connection** with other people
 - by providing opportunities to **connect** and **share experiences**
 - Sharing test results on disability-specific online forums made online tests valuable **conversation starting point**
 - Receiving **encouragement** from the discussions of test results
 - feel more positive about their disability
 - Create a **sense of community**
 - allowing comparison of results



How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

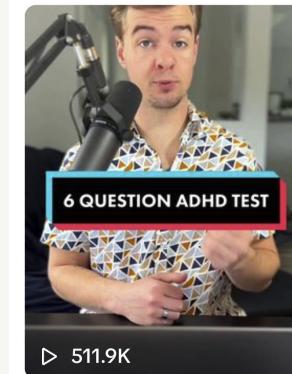
Findings (4/4)

- **Challenges** of online tests
 - Reliability and Privacy
 - Over-interpretation of results
 - consolidate the result with their assumptions
 - Do not provide a way forward
 - fall into the same pitfall as professional diagnosis



Are You Emo? Take This Quiz to See If You're Emo at Heart!

sonate with the emo



6 QUESTION ADHD TEST

▷ 511.9K

ADHD Test - Do You Have ADHD? #adhdtest...

 usamedical  13.5K



How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

Takeaways for HCI research community, and beyond

1. **Integrating high-quality online tests that assess cognitive and mental disabilities **into professional healthcare systems****
 - o include pointers to healthcare resources
2. **Standardized guidelines for test design and result communication are essential **before public promotion** of verified tests.**
3. Online tests should use baseline data to **offer nuanced condition insights** and **comparisons** to specific groups.

Consider therapy.

If you're concerned about your ability to rebound from feeling low or maintain a positive outlook, a professional could help.

Next Steps

Speak to your primary care physician or contact one of our therapists to determine if you would benefit from therapy.

Marriage & Family Therapist, LMFT
Verified
Irvine, CA 92620

My name is [REDACTED] and I am a Licensed Marriage and Family Therapist. My approach to therapy is one of learning the most I can about a person in order to better fit treatment to the individual. I believe that no matter how similar symptoms may be, each person ca...

Email (949)

Example 1



How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

Takeaways for HCI research community, and beyond

1. **Integrating high-quality online tests that assess cognitive and mental disabilities **into professional healthcare systems****
 - include pointers to healthcare resources
2. **Standardized guidelines for test design and result communication are essential **before public promotion** of verified tests.**
3. Online tests should use baseline data to **offer nuanced condition insights and comparisons** to specific groups.

Source

Adult ADHD Self-Report Scale (ASRS)
v1.1

Kessler et al. (2005). **The World Health Organization Adult ADHD Self-Report Scale** (ASRS): a short screening scale for use in the general population. *Psychological medicine*, 35(2), 245–256. <https://doi.org/10.1017/s0033291704002892>

Example 2



How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

Takeaways for HCI research community, and beyond

1. **Integrating high-quality online tests that assess cognitive and mental disabilities into professional healthcare systems**
 - o include pointers to healthcare resources
2. **Standardized guidelines for test design and result communication are essential before public promotion of verified tests.**
3. Online tests should use baseline data to **offer nuanced condition insights and comparisons** to specific groups.

The **Camouflaging Autistic Traits Questionnaire (CAT-Q)** is a self-report measure of **social camouflaging behaviours** in adults. It may be used to identify autistic individuals who do not currently meet diagnostic criteria due to their ability to mask their autistic proclivities.

Basic information

Statements: 25

Duration: 5–10 minutes

Type: screening tool

Authors: Laura Hull et al.

Publishing year: 2018

Seminal paper: [Development and Validation of the Camouflaging Autistic Traits Questionnaire \(CAT-Q\) \(Hull et al., 2018\)](#)

Example 3



How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

Takeaways for HCI research community, and beyond

4. Online tests should **facilitate result sharing and discussions** by linking to relevant online communities and specific test-related threads.
5. Online tests should follow the **affirmative disability**, emphasizing participants' strengths and sharing positive resources.

The affirmative disability model frames disability as a **non-tragic aspect of human diversity**, emphasizing the positive social identities and benefits of disabled individuals' lifestyles and experiences †

Where can I get help?

We would always recommend starting out with your medical doctor and asking what support is available in your local country. Following that we recommend reaching out to local Autism and Asperger's support groups where possible. There are also a couple of forums that we can recommend such as www.wrongplanet.net, where there is a lot of peer support from the community.

Example 4



How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

Embrace Autism

I can **EMBRACE** who I am — or I can **REJECT** who I am

I can see myself having **SUPER POWERS** — or I can see myself having **SYMPTOMS**

I can **TAME** my Kryptonites — or I can **DROWN** in my challenges

I can **CHERISH** my uniqueness — or **DISOWN** my peculiarities

I can **UTILIZE** my cognitive abilities — or let my sensitivities **OVERPOWER** me

I can see what is **GREAT** about me — or I can **LOATHE** who I am

How I choose to perceive myself
affects my life, other autistic people,
and people's perceptions of autism



Example 5

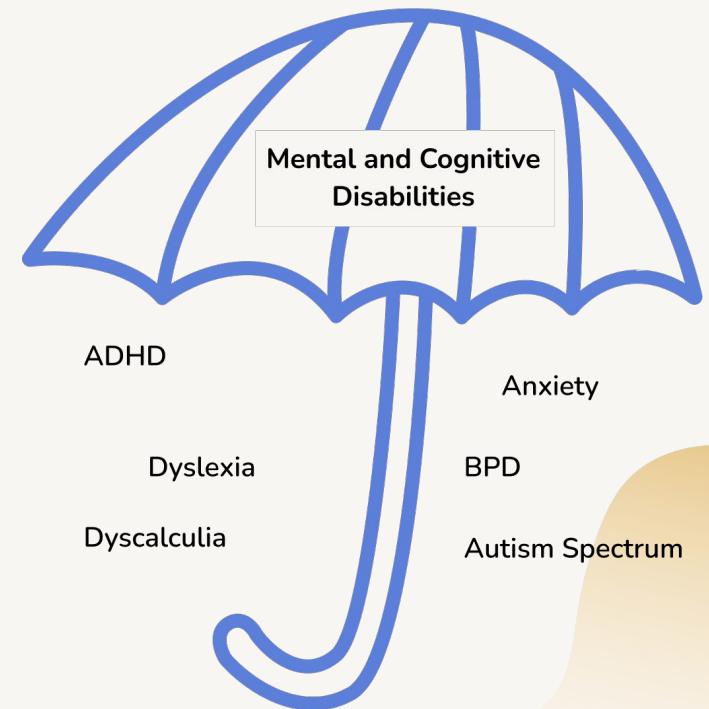


How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

Language use

This paper has a “terminology” subsection discussing its use of inclusive terms

- Use of the **umbrella term** “mental and cognitive disabilities”
 - rather than “psychiatric disorders,” which is used in medical field



Discuss

What is the contribution type of this paper?

Discuss

If submitted to CHI, would this paper fit better in Accessibility & Aging or Health?

Discuss

In what ways is this an accessibility contribution?



“It’s Kind of Like Code-Switching”: Black Older Adults’ Experiences with a Voice Assistant for Health Information Seeking

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"It's Kind of Like Code-Switching": Black Older Adults' Experiences with a Voice Assistant for Health Information Seeking

Overview

- Qualitative study to understand
 - how Black older adults from lower-income neighborhoods ask health-related questions to conversational assistants and
 - their **experiences** with and **perceptions** of conversational assistants to support health information seeking.
- 30 participants who are Black older adults
 - Inclusion criteria age
 - Ages 50 to 89
 - Actual participant age range
 - 60 - 84
 - 25 women, 5 men



"It's Kind of Like Code-Switching": Black Older Adults' Experiences with a Voice Assistant for Health Information Seeking

Method

Phase 1

5-day Diary study for eliciting health-related questions

Phase 2

Semi-structured interviews with low-tech probes of (non)conversational online health information resources to elicit preferences and opinions

Phase 3

Scenario-based feasibility testing with the Google Home and co-design of ideal features



"It's Kind of Like Code-Switching": Black Older Adults' Experiences with a Voice Assistant for Health Information Seeking

How does this paper argue that its topic is worthy of study?

- The population is understudied
- There is promise for voice assistants (VAs) to be instrumental in making healthcare more accessible
- We don't know how black older adults interact with and experience VAs



"It's Kind of Like Code-Switching": Black Older Adults' Experiences with a Voice Assistant for Health Information Seeking

- Areas of inquiry within HCI
 -  Health informatics
- Areas of inquiry outside of HCI
 -  Linguistics, Sociolinguistics
 -  Anthropology
- Uses linguistics to make their analysis of the data regarding code-switching



"It's Kind of Like Code-Switching": Black Older Adults' Experiences with a Voice Assistant for Health Information Seeking

Findings

- Participants were interested in making health-related queries to the VA

| Health Information Want | Example | Count |
|---|--|-------|
| Information about managing an existing chronic illness or condition | <i>"What precautions can I take to lower my blood pressure?"</i> | 39 |
| Information about medication dosage, interactions, or side effects | <i>"Could you help me about a medication Lasix?"</i> | 39 |
| Understanding or detecting chronic illness including definitions and symptoms | <i>"Could you tell me more about bronchitis?"</i> | 35 |
| Diet and nutrition information | <i>"How much sugar do I need?"</i> | 30 |
| Acceptable range of vital signs | <i>"What number is safe for a pre-diabetic?"</i> | 19 |
| COVID or vaccine information | <i>"How many people are infected with the coronavirus and how many of them are people of color?"</i> | 15 |
| General health and fitness tips | <i>"I just stubbed my toe and it really hurts what should I do?"</i> | 13 |
| Disease and illness prevention | <i>"What can I do to prevent myself from catching the flu?"</i> | 5 |
| Home remedies | <i>"Can you tell me whether you can drink eucalyptus oil internally?"</i> | 5 |
| Total | | 200 |

Table 3: Health information wants and count.



"It's Kind of Like Code-Switching": Black Older Adults' Experiences with a Voice Assistant for Health Information Seeking

Findings

- Participants were interested in making health-related queries to the VA

VA often didn't understand how to contextualize queries including race and gender



"Are my *vital signs* within normal range for a black older male compared to acceptable ranges?"



"It's Kind of Like Code-Switching": Black Older Adults' Experiences with a Voice Assistant for Health Information Seeking

Findings

2. Communication breakdowns and repairs when using VAs
 - Hard to initiate interaction with VA
 - Getting cut off by the VA when the question wasn't done yet
 - VA didn't understand the participant



"It's Kind of Like Code-Switching": Black Older Adults' Experiences with a Voice Assistant for Health Information Seeking

Findings

3. Feelings of Code-switching

- Participants felt VA couldn't understand their communication style
- Feeling like they needed to speak clearer or in "standard english"

"I think that there could be a tendency to speak a little more clearer than your actual conversational dialect. . . Or you might change words, **it's kind of like a code-switching. . . We do it all the time. . .**" (P11).



"It's Kind of Like Code-Switching": Black Older Adults' Experiences with a Voice Assistant for Health Information Seeking

Some Takeaways for the HCI research community from the Findings

- Code-switching is not like recognizing a foreign language
- Having to code-switch makes using the VA more time consuming and burdensome
 - → thus less accessible
- Issues with VAs were **less about Age, more about cultural code-switching**
 - Older black adults have had to code-switch for a lot longer than other people



"It's Kind of Like Code-Switching": Black Older Adults' Experiences with a Voice Assistant for Health Information Seeking

Main Takeaways for the HCI research community

- Header: 6.2 *What does this mean for design?* → Obvious header name! :)
- Bolded Takeaways:

Studies should recognize dialects like AAVE in the design of voice technologies.

Shift view of older adults & racially minoritized groups as being deficit-based users of these technologies.

Incorporate Black older adults in the design of the conversational dynamic to make non-technological conversation more natural.

"there is a need for designers of voice assistants to engage in the long-term process of cultural and linguistic divesting of colonial power"



"It's Kind of Like Code-Switching": Black Older Adults' Experiences with a Voice Assistant for Health Information Seeking

Main Takeaways for Other research communities

Health

Calling for including those at the margins in designing health interventions

Computer Science/Engineering

Including AAVE when training natural language machine learning models to recognize black speech.

Discuss

What's the contribution?

Discuss

In what ways is this an accessibility contribution?

Discuss

Is this paper actually about older adults? Or is it more about class and race?

Discuss

At what age is someone considered an “older adult”?

Discuss

Why are accessibility and aging combined?

Is this ok? Can this be problematic?

Discuss

How could these two papers be framed to go to the Health subcommittee rather than the Accessibility and Aging subcommittee?

How Online Tests Contribute to the Support System for People With Cognitive and Mental Disabilities

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“It’s Kind of Like Code-Switching”: Black Older Adults’ Experiences with a Voice Assistant for Health Information Seeking

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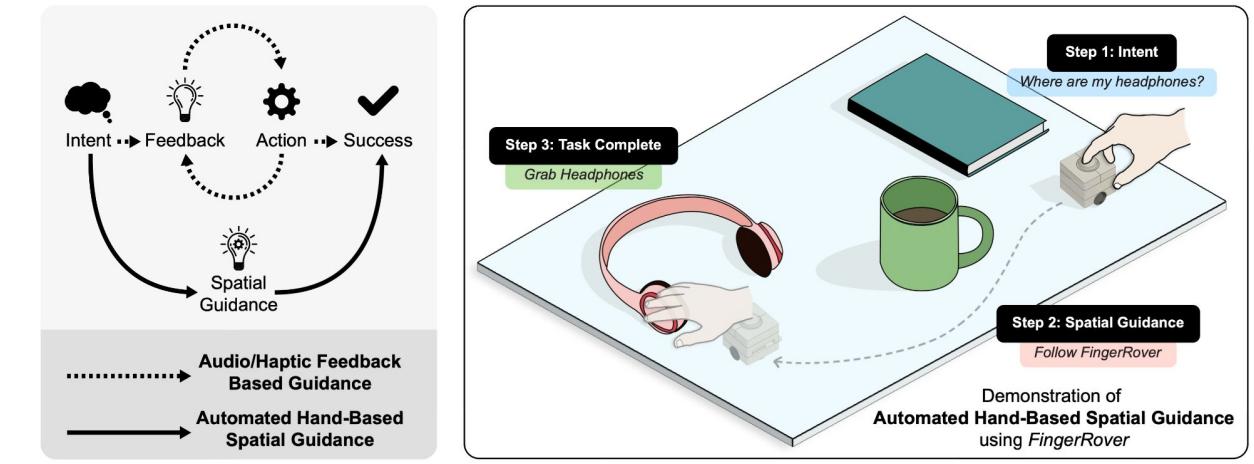
Take My Hand: Automated Hand-Based Spatial Guidance for the Visually Impaired

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Take My Hand: Automated Hand-Based Spatial Guidance for the Visually Impaired

FingerRover

An on-finger miniature robot that carries the user's finger to target points



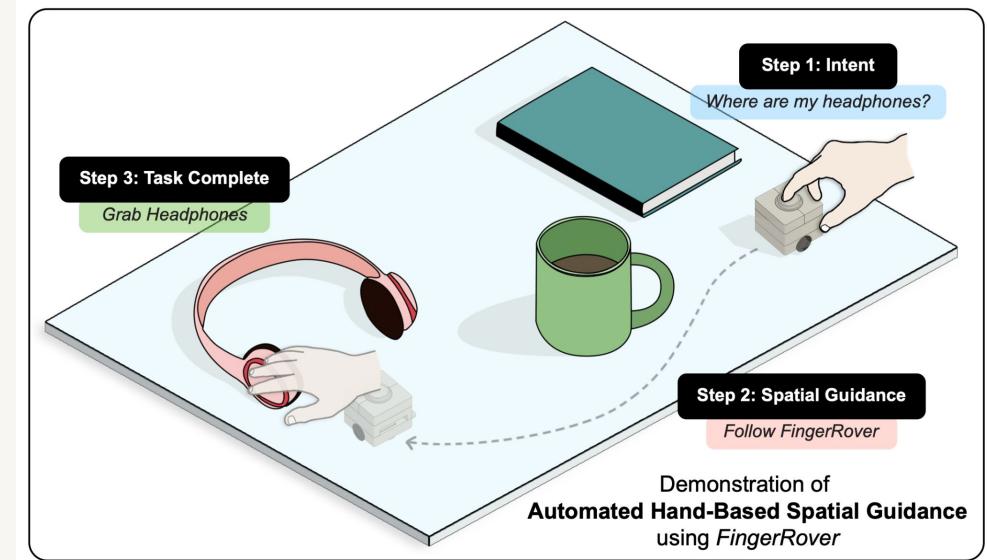


Take My Hand: Automated Hand-Based Spatial Guidance for the Visually Impaired

Problem to solve:

Spatial navigation - Finding items in the space but in an automated way!

For example, grabbing a cup on the desk, touch the screen of a PC





Take My Hand: Automated Hand-Based Spatial Guidance for the Visually Impaired

Control system

- The central server serves as the main controller for the entire system.
- FingerRover is connected to the central server via Bluetooth.
- The smartphone running the AR pipeline is connected to the central server via WiFi.
- FingerRover is autonomously controlled by the main computer using API endpoints provided by the central server.

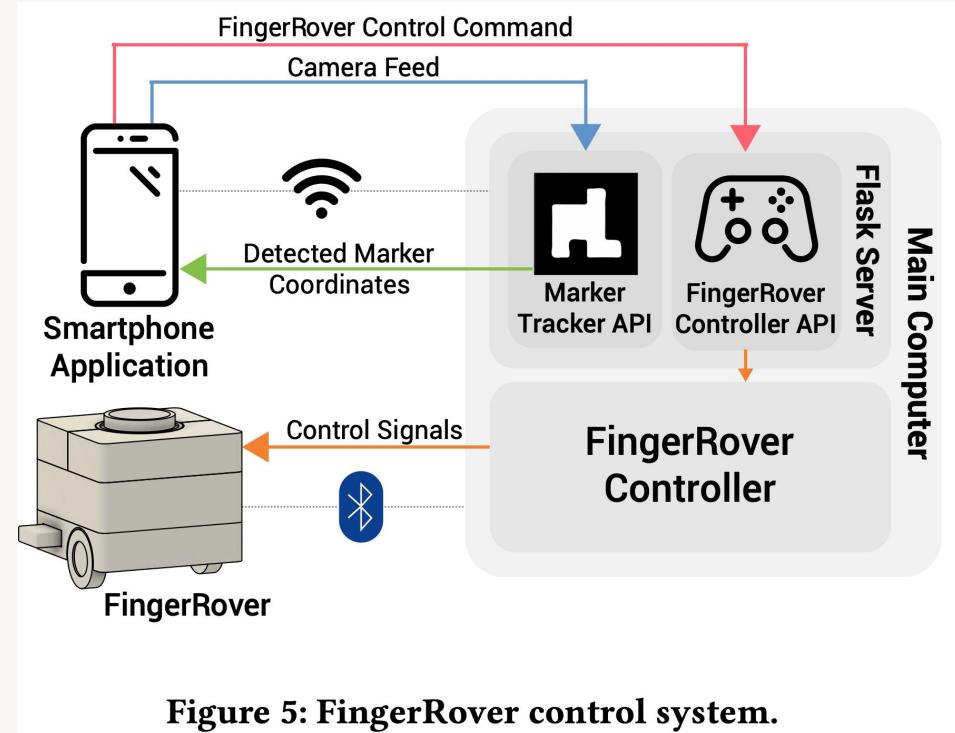


Figure 5: FingerRover control system.



Novelty

The authors argue their novelty is in that prior works are based on **auditory and haptic aids**



Take My Hand: Automated Hand-Based Spatial Guidance for the Visually Impaired

Preliminary Study to “validate” the system

- “we first conducted an IRB-approved preliminary study with blindfolded participants having normal vision to validate FingerRover’s ability in facilitating automated hand-based spatial guidance ...”
- 12 participants with “normal” vision
- The preliminary results revealed flaws in the system design





Take My Hand: Automated Hand-Based Spatial Guidance for the Visually Impaired

User Study with Target Population

- “We recruited 7 participants (4 female, 3 male) from local communities for the visually impaired [...]. Three participants were completely blind, while four participants suffered from low vision, three of whom were categorized as legally blind.”





Take My Hand: Automated Hand-Based Spatial Guidance for the Visually Impaired

User Study with Target Population

- **Simulating total blindness**
 - “participants with low vision were requested to remove visual aids.”
 - “For two participants with low vision (P5, P6), studies were conducted in dim light conditions since they reported that they were able to vaguely perceive objects in normal lighting conditions, but had considerably less visual perception in low-light conditions.”
- This user study (target population) also had fewer participants than the preliminary study...





Result

Run 4 different test cases twice

- Once with auditory guidance
- Once with FingerRover

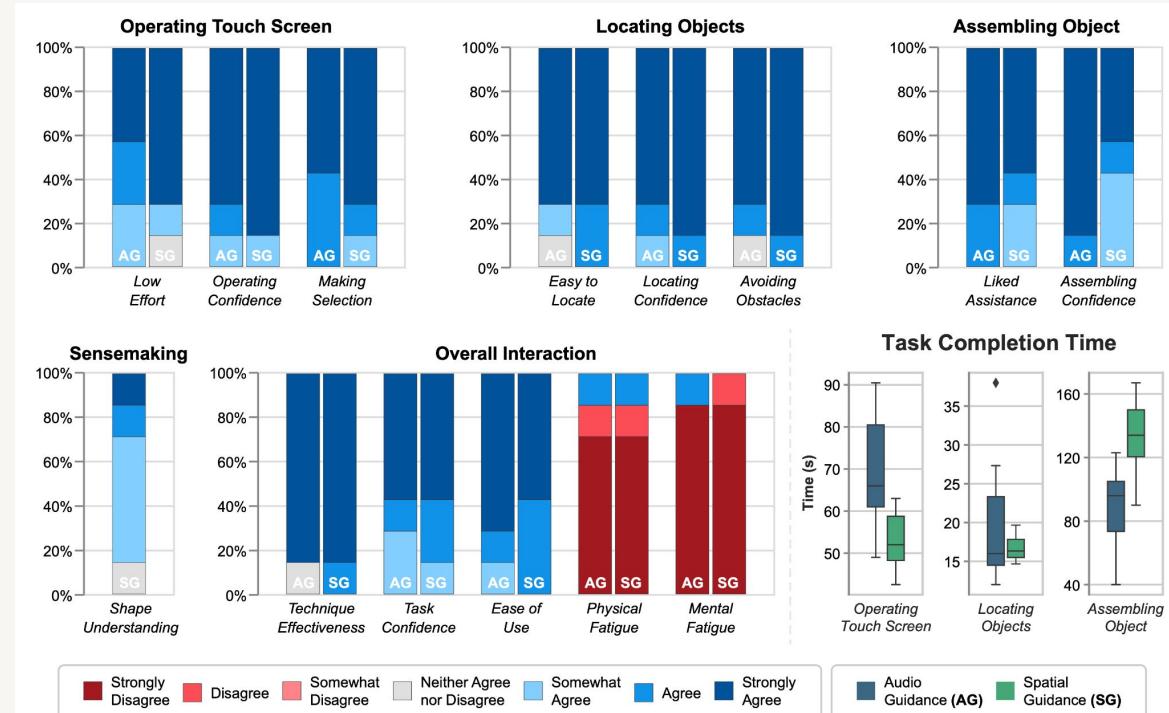


Figure 11: Visually impaired participants' qualitative assessment and completion time for each interaction.



Take My Hand: Automated Hand-Based Spatial Guidance for the Visually Impaired

Motivation/Framing

First sentence in the introduction:

"Hand-based spatial navigation has been a long-standing and **pervasive problem** for people with visual impairments. What appears to be a simple task of picking up a phone from a desk involves heavy cognitive processing that we perform subconsciously - detecting the phone in the environment, estimating its location relative to us, planning the optimal path to reach the phone, and finally, moving the hand along the planned path to pick the phone up. **The lack of visual modality** makes performing **even such simple tasks extremely challenging.**"

proof?

Ability-based comparison with no proof?

proof?



- There is no data to show this as a real problem
- Assuming that blind people have this problem, in order to solve the problem

Controversy!



- Issues with inclusion of blind and low vision people in the user study
 - Issues with language use
 - Issues with framing
-
- Supposedly, the authors of this work did apologize for the language use.



Frank ~
@FrankElavsky

...

Okay, I want to be as gentle as possible with a review of this now-award-winning work but there are some serious problems we need to make sure we don't repeat.

Our technical HCI class yesterday *just* talked about [@elizejackson's](#) "disability dongle" and problematic access work.



Adil Rahman [@adildsw](#) · Apr 4, 2023

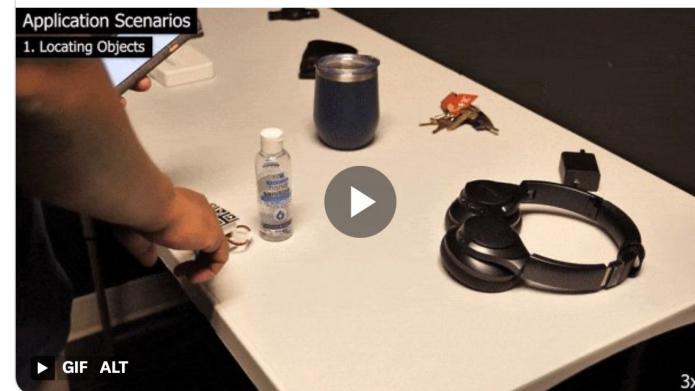
🏆 So, our #CHI23 paper received a Best Paper Award, which is absolutely insane! [@seongkook](#) [@aashikazim](#)

This work explores how hand auto-pilot can help enrich the interaction capabilities of individuals with visual impairment.

[Show more](#)

Application Scenarios

1. Locating Objects



7:52 AM · Apr 5, 2023 · 73.1K Views

21 Reposts 6 Quotes 165 Likes 49 Bookmarks

Discuss

Is this paper motivated by a sighted assumption that blind people are bad at spatial awareness?

Discuss

Why have a preliminary user study at all? Does it add to the contribution of the paper?

Discuss

Would we see this language use at ASSETS?

Should the language be more neutral when talking about disability in research?

SIGACCESS Accessible Writing Guides

ASSETS always has a link to its [guidelines for inclusive writing](#) in CFP since 2010, while CHI had not

Authors should refer to the [General Writing Guidelines for Technology and People with Disabilities](#) when preparing submissions.

← [ASSETS 2022](#)



Accessible Writing Guides

The guidelines linked to and included on this page reflect current thinking on language for writing in the academic accessibility community. Certain words or phrases can (intentionally or unintentionally) reflect bias or negative, disparaging, or patronizing attitudes toward people with disabilities and in fact any identifiable group of people. Choosing language that is neutral, accurate, and represents the preference of the groups to which it refers can convey respect and integrity.

Acknowledging Various Perspectives

Using respectful language is a priority for the SIGACCESS community. There are, however, wide ranging views on how best to achieve this, with perspectives changing over time and among various communities. The standpoint of SIGACCESS is that it is a professional responsibility of computing researchers and professionals to be informed about best-practices for using language to refer to topics related to disabilities and accessibility.

The links below provide some perspectives and guidance on how to choose language for writing in the academic accessibility community. We encourage members of the SIGACCESS community to familiarize themselves with these different viewpoints as they determine the best language choices for their work:

Strong submissions to this subcommittee will engage, as appropriate, with ongoing dialogues around ethical research praxis regarding representation of people from minoritized populations in the work. For example, papers that rely on data from non-disabled people should consider discussions around so-called "simulation studies" and how to avoid pitfalls of these methods. Your paper should also use inclusive language. Avoid characterizing an entire population using phrases that represent outlier positions for individuals, like "suffering from" (negative) or "inspirational" (positive). When comparing across characteristics or experiences, avoid referring to some people as "normal" implying others are not, or broadly characterizing one group's experiences as categorically better or worse than others. We also recommend avoiding terms like "vulnerable," "special needs," and "X challenged." We understand there may be exceptions (e.g., medical vision classification systems define a visual acuity as "normal"), but such usage should be footnoted for clarity, and these measures should be relevant to the described work. We expect that authors will review the language in their papers before each submission (initial submission, camera ready), and AC's, SC's, and other organizing committee members may request changes to language deemed to be non-inclusive as a condition of acceptance.



ASSETS 23 also emphasized avoiding non-inclusive terms (after this paper is published)

Please be sure that your use of language regarding older adults and people with disabilities follows up-to-date community guidance. Specifically, avoid terms such as "vulnerable," "special needs," "suffering from," "normal," or "X challenged," etc., and focus language to be inclusive. Authors should refer to the [General Writing Guidelines for Technology and People with Disabilities](#) or the [SIGACCESS Accessible Writing Guide when preparing submissions](#).

An extra paragraph about language use from CHI 24 Accessibility & Aging subcommittee description (after this paper is published)



Discuss

Should technology like this be designed in the first place when it was designed *for* blind people and not *with* blind people?

Is there benefit?

Discuss

Is there an issue with putting papers on blast on social media?
How should we have conversations around problematic papers?