A11yFutures: Envisioning the Future of Accessibility Research

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ABSTRACT

The future of accessibility research is a topic we take up every day as researchers; yet it is important also to step back and ask ourselves about the most important, and overlooked, areas for inquiry in our field. With the rapid pace of change in both computational capabilities and the environmental, social, and political context in which disability plays out, we believe this is a critical time for such inquiry. This is even more important given the relatively narrow set of topics that accessibility research has focused on for most of our field's history. We invite our community to come together to define what the next generation of accessibility research should engage with.

KEYWORDS

accessibility

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1 INTRODUCTION AND BACKGROUND

As accessibility research continues to grow in popularity, recent work has called on the field to reflect on its current trajectory [25]. Specifically, in this workshop, we aim to think about what groups and topics are currently excluded from or underrepresented in current accessibility research and ideate about how to engage with them. To understand our past and future trajectory in accessibility research, we offer three waves of accessibility research, inspired by discussions of "waves" of Human Computer Interaction Research [7, 20].

The vast majority of accessibility research, over the first few decades of our field's existence, focused on a few very important topics such as increasing the ability to use digital devices by people with disabilities (*e.g.,* [4, 10, 27, 32]); increasing understanding of the role technology plays in disabled people's daily lives, or the role they would like it to play (*e.g.,* [23, 35]); and increasing access in the world at large with technology (*e.g.,* [1, 29, 34]). This research was crucial to establishing the basis for how to make graphical user interfaces and websites (GUIs) (*e.g.,* [30, 32]), and more recently mobile devices [22, 27], a central experience of almost all end-user technology use that legally and morally must be made accessible. We term this *first wave accessibility*, and it is almost entirely technology focused.

As technology has extended into new realms, so has our field, including new organizations such as XR Access and topics such as VR/XR accessibility (*e.g.,* [5]); AI and accessibility (*e.g.,* [14, 28]); computer vision for accessibility (*e.g.,* [6]); accessibility through fabrication (*e.g.,* [15, 24]) and accessibility of speech-based in-home agents (*e.g.,* [31]). We think of this as *second wave accessibility*, and it extends to new domains of computing; and begins to leverage computing to make the world more accessible.

Most recently, we have begun to see accessibility research tackle a much wider variety of application areas driven by the observation that people with disabilities are present in (and often over- or under-represented in) all of the same spaces as people without disabilities. We think of this as *third wave accessibility.* In today's world, technology is similarly present in all of those spaces; and this raises new types of access questions. Examples of recent work in these domains include spaces where people with disabilities are under represented (such as in higher education, *e.g.,* [26, 33, 36]) or under studied (*e.g.,* research into the experiences of forced migrants with disabilities [17, 18]; and research that looks at intersectional identities such as race and disability [19]). However, many relevant domains remain to be explored, including domains where people with disabilities are over-represented (such as in unhoused populations [12, 16] and in the carceral system [8, 9]) or are at higher risk of harm (such as during disaster response [2, 11]). Further, it is imperative that we engage in positive aspects of disability culture such as mutual aid; disabled joy; sports (*e.g.,* [3, 21]); hobbies (*e.g.,* knitting [13]); and family life. This workshop aims to explore and develop goals for *third wave accessibility*, in which our field broadens its concept of relevant topics in the important work of studying and developing technology that supports and empowers people with disabilities.

The goals of this workshop are to develop this agenda and launch a virtual speaker series to explore these topics over the course of the next year. We plan to rotate the time of these talks to accommodate different time zones. We also plan to work together to write a position paper that can inspire, and empower, our community to encourage, engage in, and support the work of extending our field into new and under studied domains.

We expect the workshop and follow-up activities to result in more connections and synergies between participants interested in creatively exploring new areas of accessibility research with potential long-term impact in opening up new research under explored research directions relevant to the ASSETS and other related communities in the future.

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2 WORKSHOP PLANS

The workshop will be structured around invited position papers, which will have a very loose structure and allow previously published formal and informal writing or videos. We will distribute these submissions to participants. Participants will also be asked to spend a week thinking about situations, news articles, and encounters in their daily life that pertain to the intersection of accessibility and technology in a wide variety of circumstances. We will have an active asynchronous conversation server (Slack or Discord) where we will ask them to upload one photo, audio snippet, or text comment per day for the week before ASSETS (including and overlapping their travel to ASSETS if they are attending in person). We will also encourage participants to brainstorm about which areas of accessibility research are lacking attention to further guide our selection of topics in the structured discussions.

In addition, we plan to hold two hybrid, two-hour discussions overlapping this photo collection period. We will hold a "West Coast discussion" at the start of the week before the conference, hosted at the University of Washington, for those who can attend in person. We will hold an "East Coast discussion" the weekend before the ASSETS conference at NYU for those who can attend in person.

The structure of the two two-hour discussions will be approximately as follows:

- 15 minutes: Introductions
- 10 minutes: Presentation highlighting themes in workshop submissions and more general topics for 3rd wave research
- 40 minutes: Small group discussions focused around different shared topics of interest. We will encourage participants to first write answers to three discussion questions in a shared Google document and then talk about them as a group:

(1) What are some important research questions at the intersection of technology, disability, and [topic]?
(2) How can we best center the perspectives of people with disabilities who live at this intersection? For example, are there community-based organizations we could collaborate with?
(3) What are the risks and opportunities of engaging with this topic?

- 10 minutes: Break
- 30 minutes: Group share out
- 15 minutes: Discussion of next steps

To make this more inclusive, we plan to ask participants about accessibility needs and arrange for CART and/or ASL interpretation if requested. We would appreciate ASSETS' help with the costs for this if possible. We also hope that our attention to time zones and hybrid participation will help to increase inclusion.

Outcomes. It is our hope that the outcomes of this workshop will be (1) a speaker series that explores similar topics over the course of the year, and (2) a position paper that summarizes and reflects on ideas from the workshop and can inspire, and empower, our community to expand the set of domains of studies as part of accessibility work.

3 ORGANIZERS

Kirk Crawford is a Ph.D. student in the Human-Centered Computing (HCC) program at the University of Maryland, Baltimore County (UMBC). His research interests center around accessibility and inclusivity considerations for marginalized communities, particularly the LGBTQIA+ community, people of color, people with disabilities, and those at the intersection of these identities. He is particularly interested in exploring how the use and non-use of assistive technology (AT) impact community access to resources and spaces, as well as ways to improve the design and implementation of AT to meet the needs of these communities.

Foad Hamidi is an Assistant Professor in Information Systems, and faculty in the Human-Centered Computing (HCC) program at the University of Maryland, Baltimore County (UMBC). His work focuses on the participatory design of assistive technologies with a focus on cultural and contextual factors, and developing equity-based approaches for technology-rich informal learning programs and community-based infrastructures. He is particularly interested in experiences at the intersection of multiple dimensions of vulnerability, such as forced migration and disability.

Kelly Avery Mack is a final year PhD Candidate in the Paul G. Allen School of Computer Science and Engineering at the University of Washington. Their work focuses on increasing representation of disability in digital technologies (*e.g.,* avatars, AI systems) and broadening who is represented in accessibility research. They seek to often merge these goals in their work, intentionally recruiting people with chronic illnesses, people with mental health conditions, and neurodiverse people in their work, as well as people with multiple marginalized identities like disabled people of color and queer disabled people. They are also chronically ill and disabled.

Jennifer Mankoff (main contact person) is a Professor in the Paul G. Allen School of Computer Science and Engineering at the University of Washington. Her research is focused on accessibility through giving people the voice, tools and agency to advocate for themselves; and she herself identifies as disabled. She strives to bring both structural and personal perspectives to her work. For example, her recent work in fabrication of accessible technologies considers not only innovative tools that can enable individual makers but also the larger clinical and sociological challenges to disseminating and sharing designs. Similarly, her work in the intersection of mental health and discrimination uses sensed data to explore how external risks and pressures interact with people's responses to challenging moments.

Jason Wiese is an Assistant Professor in the Kahlert School of Computing University of Utah, where he runs the The Personal Data and Empowerment Lab. His research focuses on empowering end users in their everyday lives with useful access to their personal data and other novel computing experiences. For example, some of his recent work examines the experiences of people who have had spinal cord injuries, seeking to understand their real-world needs and ways that technology might better facilitate their everyday lives. Outdoor recreation is one example, where he has found that people with higher levels of impairment are not afforded the same opportunities to independently control adaptive recreation experiences.

4 WEBSITE

The website for this workshop will host position papers with permission of the authors. It will be located at https://make4all.github.io/a11yfutures/. A draft website is currently available there. We plan to recruit participants through accessibility serving mailing lists and centers (such as the CREATE and TRACE centers) and posts on relevant social media. We will pay special attention to reaching underserved groups. As part of this, we will reach out to groups such as the Society for Disability Studies and to groups such as `@BlkInComputing`; and DO-IT, that have diverse membership. For those who cannot attend in person, we will encourage participation in our planned asynchronous messaging system and ask people who are interested to join our mailing list.

5 CALL FOR PARTICIPATION

Please join us in envisioning the future of accessibility work. As technology has extended into new realms, so has our field. Accessibility research is tackling a wider variety of topic areas driven by the observation that people with disabilities are present in (and often over- or under- represented in) all of the same spaces as people without disabilities.

Examples of recent work in these domains include spaces where people with disabilities are under represented (such as in higher education, or under studied, such as research into the experiences of immigrants with disabilities; and research that looks at intersectional identities such as race and disability. However many relevant domains remain to be explored including domains where people with disabilities are over-represented (such as in unhoused populations and in the carceral system) or are at higher risk of harm (such as during disaster response and sustainability). It is also imperative that we engage in positive aspects of disability culture such as mutual aid; disabled joy; sports; hobbies; and family life.

In today's world, technology is similarly present in all of those spaces; and this raises new types of access questions. This workshop aims to explore and develop goals for a future in which our field broadens its concept of relevant topics in the important work of studying and developing technology that supports and empowers people with disabilities.

The goals of this workshop are to develop this agenda and launch a speaker series to explore these topics over the course of the next year. We plan to rotate the time of these talks to accommodate different time zones. We also plan to work together to write a position paper that can inspire, and empower, our community to encourage, engage in, and support the work of extending our field into new and under studied domains. Participation criteria will be based on submission of a relevant writing sample (we allow new writing, previously published formal and informal writing or videos). Participants can select whether accepted papers should be made public or not. You can learn more at https://make4all.github.io/a11yfutures/.

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