Kelly Mack

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Education

2019–Present **University of Washington, Seattle, WA**.
Ph.D. in Computer Science
Advised by Jennifer Mankoff

2014–2019 **University of Illinois at Urbana-Champaign, Urbana, IL**.
B.S. in Computer Science; Mathematics and Business minors

Interests

Accessibility of Higher Education.
I want to make higher education more accessible to students with disabilities. My current projects involve using optimization techniques and machine learning to make slideshow presentations more accessible to a wide variety of disabilities and creating tools to support better communication around accommodations.

Publications

- *Anticipate and Adjust: Cultivating Access in Human-Centered Methods (CHI '22)*— **K. Mack**, E. McDonnell, V. Potluri, M. Xu, J. Zabala, J. Bigham, J. Mankoff, C. Bennett.
- *Making a Medical Maker's Playbook: An Ethnographic Study of Safety-Critical Collective Design by Makers in Response to COVID-19 (CSCW '22)*— M. Hofmann, U. Lakshmi, **K. Mack**, R. Arriaga, S. Hudson, J. Mankoff.
- *Mixed Abilities and Varied Experiences: a group autoethnography of a virtual summer internship (ASSETS '21)*— **K. Mack**, E. Cutrell, B. Lee, M. Morris. **(Honorable mention).**
- *Designing Tools for High-Quality Alt Text Authoring (ASSETS '21)*— **K. Mack**, M. Das, D. Jain, D. Bragg, J. Tang, A. Begel, E. Beneteau, J. Davis, A. Glasser, J. Park, V. Potluri. **(Honorable mention).**
- *What Do We Mean by "Accessibility Research"? A Literature Survey of Accessibility Papers in CHI and ASSETS from 1994 to 2019 (CHI '21)*— **K. Mack**, E. McDonnell, D. Jain, L. Wang, J. E. Froehlich, L. Findlater. **(Honorable mention).**
- *The Right to Help and the Right Help: Fostering and Regulating CollectiveAction in a Medical Making Reaction to COVID-19 (CHI '21)*— M. Hofmann, U. Lakshmi, **K. Mack**, R. Arriaga, S. Hudson, J. Mankoff. **(Honorable mention).**
- *Medical Maker Response to COVID-19: Distributed ManufacturingInfrastructure for Stopgap Protective Equipment (CHI '21)*— U. Lakshmi, M. Hofmann, **K. Mack**, S. Hudson, J. Mankoff, R. Arriaga. **(Honorable mention).**
- *Stitching Together the Experiences of Disabled Knitters (CHI '21)*— T. Gotfrid, **K. Mack**, K. Lum, E. Yang, J. Hodgins, S. Hudson, J. Mankoff.
- *Social App Accessibility for Deaf Signers (CSCW '20)*— **K. Mack**, D. Bragg, M. Ringel Morris, M. W. Bos, I. Albi, A. Monroy-Hernández.
- *Benchmarking Spreadsheet Systems (SIGMOD '20)*— S. Rahman, **K. Mack**, M. Bendre, R. Zhang, K. Karahalios, A. Parameswaran.
- *HomeSound: An Iterative Field Deployment of an In-Home Sound Awareness System for Deaf or Hard of Hearing Users (CHI '20)*— D. Jain, **K. Mack**, A. Amrous, M. Wright, S. Goodman, L. Findlater, and J. E. Froehlich.
- *Anti-Freeze for Large and Complex Spreadsheets: Asynchronous Formula Computation (SIGMOD '19)*— M. Bendre, T. Wattanawaroon, **K. Mack**, K. Chang, and A. Parameswaran.
- *Faster, higher, stronger: Redesigning spreadsheets for scale. (ICDE '19)*— M. Bendre T. Wattanawaroon, S. Rahman, **K. Mack**, Y. Liu, S. Zhu, Y. Lu et al.

- *Characterizing Scalability Issues in Spreadsheet Software using Online Forums (CHI EA '18)*— **K. Mack**, J. Lee, K. Chang, K. Karahalios, and A. Parameswaran.

Awards

1 Dennis Lang Award in Disability Studies (2021)
2 Google Lime Scholar (2020)
3 NSF Graduate Research Fellowship Recipient (2019)
4 ARCS Foundation Scholar (2019-2021)
5 Wilma Bradley Endowed Fellowship in Computer Science & Engineering (2019)
6 UIUC Bronze Table (2019)- top 3% of class
7 Boeing Women in Engineering Scholarship (2018)
8 NVIDIA John Nickolls Memorial Scholarship (2018)
9 Snap Inc. Research Scholar (2018)
10 CRA Outstanding Undergraduate Researcher Award Honorable Mention (2018)

Industry Experience

Jun '20 – Sep '20 **Microsoft Research**.
Research Intern: Ability Team; Advised by Meredith Ringel Morris

- Created interface designs in React.js to encourage engagement with and quality of alternative text for images in PowerPoint
- Performed interviews with alternative text authors and screen reader users to verify the validity of designs and further improve them
- Compiled and presented a final set of alternative text design considerations to the PowerPoint team to allow for future implementation

May '19 – Aug '19 **Microsoft**.
Software Engineering Intern: Interaction for Everyone Team

- Added additional functionality to Narrator, Microsoft's screen reader software, to improve the reading of math using C++ and interacting with the COM framework
- Won second place in the company-wide hackathon and first place in the M365 hackathon (project details under NDA)

Aug '18 – Nov '18 **Snap Inc**.
Research Intern: App Platform Team; Accessibility Evangelist

- Led an accessibility-themed research project looking at how deaf and hard of hearing users interact on social media
- Created an interview protocol and survey to answer our research questions
- Learned how to perform statistical analysis techniques on survey data to explore the results and performed open coding on qualitative interview responses
- Developed and delivered a presentation related to the importance of accessibility to team members, executives, and the CEO of Snap Inc.
- Instigated Snap Inc.'s first disability-focused employee resource group

May '18 – Aug '18 **Microsoft**.
Software Engineering Intern: Platform Health Team

- Built a web application using the ASP.NET MVC framework to correlate user feedback with available data to help diagnose the root cause of issues on Windows devices
- Applied basic natural language processing techniques to link the text from user feedback to concrete scenarios we can further investigate
- Participated in a hackathon project with members of Microsoft Research to create a novel experience for Narrator screen reader users
- Created and delivered a presentation to my team explaining the importance and benefits of making all of our content and applications accessible

May '17 – Aug '17 **Facebook**.
Software Engineering Intern: Accessibility Team

- Improved the quality of using the Facebook Android app for users with dyslexia and also the experience of newsfeed for those who use screen readers
- Updated an algorithm that determines the best alternate text for images to be read by screen readers

Teaching

Spring '21 - Winter '22 **CREATE Accessibility Seminar Facilitator**.

Fall '20 - Spring '21 **DUB HCI Seminar Facilitator**.

Invited Talks

Oct '21 **Introduction to Disabilities- University of Washington**.

Service

Fall '19 – Present **Department Service**.
Facilitator

- Fall 2019-present: served as a graduate student coordinator who supports all other graduate student volunteers and organizes a quarterly lunch with the department head.
- Fall 2020-present: served as a mentor for first year students, teaching them about the department and helping them acclimate to graduate school.
- Spring 2022: hosted an event at student visit days to support prospective students who qualify for LEAP Fellows.
- Spring 2020-2022: hosted a gender inclusion event at student visit days.
- Fall 2020-2021: served as a peer-application mentor for applying students. This involved providing feedback on statements and meeting with students weekly about their application goals.
- Winter-Fall 2020: served on G5PAC, the graduate student service committee. Contributed to the development of a teaching certification from our department.

Aug '17 – Present **Girls Who Code**.
Facilitator

- Organize and run weekly chapter meetings for up to 30 girls from grades 6 through 12 by creating lesson plans and helping girls one-on-one with activities that teach them how to code
- Created and taught a workshop that educated members about what accessibility is, how to think about inclusive design, and how to design artifacts so they are accessible for people with a wide range of abilities
- Developed a series of web lectures to teach members about web accessibility including how to properly nest content, CSS guidelines, how to properly create links, and more

Jan '21 – July '21 **UW Changemakers in Computing**.
Facilitator

- Developed curriculum to teach high schoolers basic python programming, AI, and tech ethics
- Mentored a group of 5 students closely throughout a summer curriculum and final project
- Taught students lectures on python basics and ran office hours to help unblock students on assignments
- Organized and hosted the programs final Hackathon