PAUL G. ALLEN SCHOOL
OF COMPUTER SCIENCE & ENGINEERING

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Dear Members of the Faculty Search Committee,

I am applying for an Assistant Professor tenure-track Assistant Professor of Computer Science position at Bucknell University. I am completing my Ph.D. in Computer Science & Engineering at the University of Washington and will be defending June 2021. I am co-advised by James Fogarty and Jacob O. Wobbrock. My work focuses on human-computer interaction and accessible computing. I consider the intersection of computing with disability identities and communities and how social and organizational factors impact the accessibility of technology.

My approach to education is driven by my belief that: (1) increasing diversity in technical fields is essential to improving the accessibility of technology, and (2) inclusive education creates economic opportunities for marginalized groups. I focus on understanding and mitigating barriers faced by women and people with disabilities in higher education. In my service, I address this through undergraduate research mentorship and creating inclusive professional environments. In my teaching, I use techniques such as moderated discussions, multimodal communication, and adapted activities to create environments where all students can learn and contribute.

I have taught seminar-, lecture-, and project-based courses. I have developed lectures on human-centered design and accessibility, and guided students in design processes and open-ended research thinking. I am excited to teach introductory and advanced courses on human-computer interaction (e.g., CSCI 358, 475), accessible computing, and computing in society (e.g., CSCI 359, 245, 187). I am also well-prepared to teach qualitative and quantitative research methods (e.g., CSCI 202) and programming courses (e.g., CSCI 203, 340). I especially look forward to creating courses on population-scale, ecosystem approaches to technology for underserved groups and guiding students in individual studies and capstone courses. I additionally would be interested in integrating accessibility into existing technical and human-centered design courses.

My research seeks to characterize and improve mobile app accessibility for people with disabilities using a mixed-methods approach. I approach app accessibility as a systemic and multi-faceted problem; I have published a conceptual epidemiology-inspired framework to structure this approach that frames accessibility barriers as *diseases* within a *population* of apps. I performed an automated accessibility analysis of 10,000 mobile apps, the largest such assessment published to date. Using data-driven and user-centered design, I investigate *environmental factors* that impact app accessibility (e.g., developer education, company structure, social influences) and create development and testing tools for improving app accessibility.

My future work will focus on longitudinal large-scale analyses and tools for supporting app designers, developers, and testers in collaboratively creating accessible apps within organizations. I am currently surveying professional app accessibility testers and the developers they work with; I will broaden that work to include designer perspectives. To connect with professionals in app creation, I am working with app developer, testing, and accessibility teams at Google, and am cultivating connections with a central accessibility team at IBM.

Though my population-scale, multi-factor lens that integrates social and organizational factors, I envision a more holistic and actionable approach to app accessibility than work focused on identifying barriers in individual apps alone.

I have eight publications in peer-reviewed conferences and journals in human-computer interaction and accessible computing (e.g., ACM Conference on Human Factors in Computing--CHI, ACM SIGACCESS Conference on Computers and Accessibility--ASSETS, ACM Transactions on Accessible Computing--TACCESS), including three first-author papers, two of which were awarded Best Paper Nominations (top 5%). I am a National Science Foundation Graduate Research Fellow. My research has been instrumental in securing grants from the NSF and Google and contributed to the recent founding of the CREATE center at the University of Washington. In addition to the disclosed impact of my work, multiple companies have informed me they are implementing currently unannounced product features based directly on my research.

My interdisciplinary research on how social context, education, and technology influence accessible design practices provides many opportunities to engage undergraduates in research. I have mentored undergraduate women in computing and human-centered design through summer research internships and workshops. I look forward to continuing that engagement with undergraduates through Bucknell's honors thesis, senior design courses, and undergraduate research initiative.

If you require further information beyond my application materials, please contact me via email or phone or visit my website at www.homes.cs.washingont.edu/~ansross.

Thank you for your consideration.

Sincerely,

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