
EDUCATION

University of Wisconsin–Madison

Sept 2021 – Present

Ph.D. in Computer Science *NSF Graduate Research Fellow*

University of Idaho

May 2019

B.S. in Computer Engineering

TECHNICAL & RESEARCH SKILLS

Programming: Python; C++; Java; R; MATLAB; Swift; Kotlin

AI & ML Tools: Apple CreateML; Azure OpenAI; Google Gemini; YOLO; Whisper

Systems & Hardware: iOS/iPadOS app development; Raspberry Pi; Embedded/tangible hardware integration; Android app development

Research Methods: Accessible qualitative user study design; Research through design; Participatory design; PRISMA-ScR systematic review; Thematic, content, and behavioral analysis

RESEARCH EXPERIENCE

People and Robots Laboratory, University of Wisconsin–Madison

May 2022 – Present

Research Assistant — Advisor: Dr. Bilge Mutlu

- Building an LLM-driven accessibility overlay for Android that detects security and privacy notifications via AccessibilityService, generates plain-language risk explanations through Azure OpenAI, and delivers them through an on-screen overlay with synchronized text-to-speech.
- Prototyping a multimodal socially assistive robot (Reachy Mini) for workplace support, integrating real-time speech generation, hand-tracked gesture recognition, and expressive display feedback, with escalation logic.
- Designed and instrumented an accessible usability study evaluating how adults with intellectual and developmental disabilities interpret security and privacy notifications across custom-built web and mobile task environments.
- Designed and developed three technology probes to support money management: an AR iPad app using a custom object-detection model trained in Apple CreateML on a self-built Roboflow dataset for real-time bill recognition, a gamified Swift iPad app, and a tangible dual-device interface built on two networked Raspberry Pi 4Bs with touchscreens and physical controls.
- Conducted an accessible qualitative interview study to understand how adults with Down syndrome use technology in daily life, establishing the empirical foundation for my subsequent research.

SELECTED PUBLICATIONS

- **Johnson, H. L.**, Nonnenkamp, J., Mutlu, B., & Chatterjee, R. (2026). “I’m trying not to get hacked:” How Adults with Intellectual and Developmental Disabilities Navigate Security and Privacy Notifications. *ASSETS 2026*, ACM.
- **Johnson, H. L.**, Spalitta, H., Kim, C. Y., & Mutlu, B. (2026). Supporting Money Management among Adults with Down Syndrome: A Multi-Technology Probe Study. *CHI 2026*, ACM.
- **Johnson, H. L.** & Mutlu, B. (2025). Accessible Technology for Adults with Down Syndrome: A Scoping Review. *ACM Transactions on Accessible Computing*, 18(3), Article 12.
- **Johnson, H. L.**, Sterling, A., & Mutlu, B. (2024). “It Is Easy Using My Apps”: Understanding Technology Use and Needs of Adults with Down Syndrome. *CHI 2024*. ACM.

GRANTS & AWARDS (SELECTED)

ACM ASSETS Doctoral Consortium, *ACM SIGACCESS*

2024

NSF Graduate Research Fellowship (GRFP), *National*

2023

UW–Madison Fall Competition Grant, *Institutional*

2023

ADDITIONAL EXPERIENCE

Industry: DCS Corp, Computer Engineer II / Lab Manager *2019-2021* (Qt/C++ and Unreal/C++ research prototypes for human-agent teaming research). HP, Firmware Engineering Intern *2018-2019* (developed automation scripts and unit tests, and debugged embedded printer firmware to fix defects and reduce memory footprint)

Teaching: Teaching Assistant (CS640 Networking; CS220 Python; CS770 HCI); Accessibility guest lectures to ~300 students; Mentorship to undergraduate and graduate students