Mahika Phutane

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Research interests

Human-Computer Interaction, Accessibility, Natural Language Processing

Education

2020 – Present   **Cornell University**
PhD, Computer Science
Committee: Dr. Aditya Vashistha, Dr. Nicola Dell, Dr. Tapo Bhattacharjee

2015 – 2020   **University of Toronto**
BSc, Computer Science
Additional Major: Communication, Culture, Information, and Technology (CCIT)
Mentors: Dr. Cosmin Munteanu, Dr. Rhonda McEwen, Dr. Daniel Zingaro

2018   **Nanyang Technological University** – Singapore
Summer in Communication, Design, & Film Studies

Publications

2024   Jiang L., Jung C., **Phutane M.**, Stangl A., Azenkot S. *"It's Kind of Context Dependent": Understanding Blind and Low Vision People's Video Accessibility Preferences Across Viewing Scenarios.*
ACM Conference on Human Factors in Computing (CHI '24) [link]

2023   **Phutane M.**, Chen N., Jung C., Azenkot S. *Speaking with My Screen Reader: Using Audio Fictions to Explore Conversational Access to Interfaces.*
ACM Conference on Computers and Accessibility (ASSETS '23) [link]

2023   Jiang L., **Phutane M.**, Azenkot S. *Beyond Audio Description: Exploring 360° Video Accessibility with Blind and Low Vision Users Through Collaborative Creation.*
ACM Conference on Computers and Accessibility (ASSETS '23) [link]

2023   Zhao Y., **Phutane M.**, Singh S., Lepecki F., Zhou W., McEwen R., Zihayat M. *Bridging the Divide: A Comparative Analysis of the Discourse on Anxiety in Academic Research, Social Media, and Blogging Platforms* [In Review].

2022	**Phutane M.**, Wright J., Castro B., Shi L., Stern S., Lawson H., Azenkot S. *Tactile Materials in Practice: Understanding the Experiences of Teachers of the Visually Impaired.* ACM Transactions on Accessible Computing, 15(3), 1-34. (TACCESS '22). [link]
2022	Heung S., **Phutane M.**, Azenkot S., Marathe M., Vashistha A. *Nothing Micro About It: Examining Ableist Microaggressions.* ACM Conference on Computers and Accessibility (ASSETS '22). [link]
2021	Singhal T., **Phutane, M.** *Elevating Haptics: An Accessible and Contactless Elevator Concept with Tactile Mid-Air Controls.* ACM Extended Abstracts on Human Factors in Computing (CHI EA '21). [link]
2021	Hartel, J., **Phutane, M.**, Posa, S., Shi, S., Xu, A., & Bradshaw, S. *Somewhere Over the Rainbow: The Use of Color in the Draw-and-Write Technique.* Visual Methodologies, 8(1), 16 - 36. [in press]

Teaching experience

Spring 2023 Spring 2022	**Cornell Tech.** Teaching Assistant. INFO 5305: User Experience and User Research Methods. Held office hours, created supplemental lecture materials, led grading sessions *Prof: Dr. Shiri Azenkot*
Spring 2020 – Spring 2016	**University of Toronto.** Teaching Assistant. CSC263: Data Structures and Analysis CSC236: Introduction to Computational Theory CSC148: Introduction to Computer Science *Profs: Dr. Daniel Zingaro, Dr. Andrew Petersen, Dr. Arnold Rosenbloom*

Honors and Fellowships

2023	Digital Life Initiative Doctoral Fellowship. *$5000 in research funding*
2023	Siegel Public Interest Tech Impact Fellowship. *$10,000 in stipend*
2020	Dennis Washington Graduate Fellowship. *$120,000* *Awarded for academic excellence and strength of character in face of adversity* *Full support for 5 years, including tuition, health insurance, and stipend* Appeared in Wall Street Journal
2020	Cornell Computer Science Department Fellowship. *$36,750* *First year support awarded for outstanding application & exceptional promise*

2017	Jackman Humanities Institute Scholar-in-Residence. *$1,000* *Intensive summer residence fellowship for social science research* *Curated an Art Exhibition to share research findings*
2017	Hacking Arts: First Place. MIT Media Lab. *$2,500*
2016	Horatio Alger Scholarship. *$5,000*

Professional experience

2024 – Present	**Microsoft Research India.** Bengaluru, India *PhD Research Intern*
2023 – 2024	**NYC Mayor's Office of People with Disabilities.** New York, NY *Academic Fellow* Creating an interactive AI assistant/chatbot to facilitate communication between the NYC government website and individuals with disabilities.
2018 – 2019	**Modiface, L'Oreal Group.** Toronto, Canada *AR Software Engineer*

Mentorship

2024	Ananya Seelam, Research Assistant, *Cornell*
2024	Krystal Ohuabunwa, Milstein Scholar, *Cornell*
2024	Joy Alemu, Milstein Scholar, *Cornell*
2022	Cyrus West, Research Assistant, *Cornell*
2021	Ayush Srinivas, Lumiere Research Scholar
2021	Michael Ye, NSF Research Experience for Undergraduates, *Cornell Tech*
2019 – 2020	Felipe Lepecki, Research Assistant, *U Toronto*

Service and Leadership

2024	**Milstein Program in Technology and Humanity,** Research Mentor Advised Milstein undergraduate scholars on independent research projects and collaborations with local NGOs.
2021	**NSF Undergraduate Research Program,** Research Mentor Supported a NSF REU Site with Dr. Shiri Azenkot (Cornell Tech), Dr. Steven Fiener (Columbia), and Dr. Brian Smith (Columbia), led a lecture series of good research practice and methods, and mentored upcoming undergraduate researchers.
2021	**XR Access Research Seminar**, Co-Organizer
2021 – 2023	**CS PhD Admissions Committee**, Application Reviewer

Reviewing

2024	ACM Computing and Sustainable Societies (COMPASS)
2024	ACM SIGCHI Conversational User Interfaces (CUI)
2024	ACM SIGCHI Designing Interactive Systems (DIS)
2021 – 2024	ACM Human Factors in Computing Systems (CHI)
2022	ACM Interaction Design and Children (IDC)
2022	ACM Conference on Computer Supported Cooperative Work (CSCW)
2021 – 2022	Journal of Transactions on Accessible Computing (TACCESS)

Media & Press

2022	Online microaggressions strongly impact disabled users. *Cornell Chronicle.* [link]
2021	Maestro: An AI-guided vocal coach. *Google Magenta.* [link]
2020	An accessibile solution to slowing the spread of COVID. *U Waterloo News* [link]
2020	A Touchless 2020. *Yahoo News.* [link]
2020	Scholarship gives former UTM student the push to strive … *U Toronto News* [link]
2020	Richmond student wins top North American scholarship. *Richmond News* [link]

Technical Skills

Programming:
Python, Java, C++, Objective C (iOS), R, Full-Stack Development, Unity

Research Methods:
Interviews, Survey, Contextual Inquiry, Ethnography, Diary Studies, Wizard-of-Oz, Thematic Analysis, Speculative Research, User-Centered Design

Design & Prototyping:
Storyboarding, Wireframing, Sketching, Photoshop, Illustrator, Premiere, Audition, Sound Engineering

AI Topics and Tools:
Data Mining, Feature Extraction, Topic Modelling, TensorFlow, PyTorch, Numpy, Pandas, Jupyter, Natural Language Toolkit, Hugging Face