

Niharika Mathur

Human-Centered Computing (HCC) PhD Student,
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Research Interests: Human-Centered AI; Aging and Accessibility in Computing; Human-Centered Explainable AI (HCXAI); Design Research in AI; Inclusive and Participatory Design Methods

Education

Georgia Institute of Technology (Georgia Tech)

P.h.D in Human-Centered Computing (HCC)

Specialization: Human-Computer Interaction (HCI)

Advisors: Dr. Elizabeth Mynatt and Dr. Sonia Chernova

2021 - present

Atlanta, Georgia, US.

Georgia Institute of Technology (Georgia Tech)

M.S. in Human-Computer Interaction (HCI)

Advisor: Dr. Elizabeth Mynatt

2019 - 2021

Atlanta, Georgia, US.

Vellore Institute of Technology

B.Tech. in Computer Science and Engineering (CSE)

Thesis Project: Exploring Neutrality as a Sentiment in Online Social Justice Movements on Twitter

Advisor: Dr. Ilanthenral Kandasamy

2015 - 2019

Vellore, India.

Publications

Peer-reviewed Conference Publications

[C6] **Niharika Mathur**, Tamara Zubatiy, Elizabeth D. Mynatt. A Research Through Design Study on AI Explanations for Collaborative Everyday Tasks. In *ACM International Conference on Supporting Group Work (GROUP Companion) 2025*.

[C5] **Niharika Mathur**, Tamara Zubatiy, Agata Rozga, Elizabeth D. Mynatt. "Why did you say that?": Recommendations for Understanding Explainability in Conversational AI systems for Older Adults with MCI. In *International Conference on Ubiquitous Computing and Ambient Intelligence, UCAmI 2023*.

[C4] Tamara Zubatiy, **Niharika Mathur**, Larry Heck, Kayci Vickers, Agata Rozga, Elizabeth D. Mynatt. "I don't know how to help with that" - Learning from Limitations of Modern Conversational Agent Systems. In *ACM Conference On Computer-Supported Cooperative Work and Social Computing (CSCW) 2023*.

[C3] Tamara Zubatiy, Kayci Vickers, Jessica Saurman, Felicia Goldstein, Amy Rodriguez, **Niharika Mathur**, Elizabeth D. Mynatt. A Distributed Cognition Approach to Understanding Compensatory Calendaring Cognitive Systems of Older Adults with MCI and Their Care Partners. In *International Conference on Ubiquitous Computing and Ambient Intelligence, UCAmI 2023*.

[C2] **Niharika Mathur**, Kunal Dhodapkar, Tamara Zubatiy, Jiachen Li, Brian Jones, Elizabeth Mynatt. A collaborative approach to support medication management in older adults with mild cognitive impairment using conversational assistants (CAs). In *ACM SIGACCESS Conference on Computers and Accessibility (ASSETS) 2022*.

🏆 **Best Paper Award at ACM ASSETS 2022**

[C1] Tamara Zubatiy, **Niharika Mathur**, Kayci L. Vickers, Elizabeth Mynatt. Empowering dyads of older adults with MCI and their care partners using conversational agents. In *ACM Conference on Human Factors in Computing Systems (CHI) 2021*.

Workshops

[W1] **Niharika Mathur** and Elizabeth D. Mynatt. Categorizing Sources of Information for Explanations in Conversational AI Systems in the Home for Older Adults Aging in Place. In *Workshop on Human-Centered Explainable AI (HCXAI) at ACM Conference on Human Factors in Computing Systems (CHI) 2024*.

Journal Contributions

[J1] Zhenrui Liao, **Niharika Mathur**, Vidur Joshi, Shailendra Joshi. The Promise of Artificial Intelligence in Neuroanesthesia: An Update. *In Journal of Neuroanaesthesiology and Critical Care* 2024.
(Contributed to writing on patient data for AI inputs)

Book Chapters

[B1] Ilanthenral Kandasamy, WB Vasantha, **Niharika Mathur**, Mayank Bisht, Florentin Smarandache. Sentiment analysis of the #MeToo movement using neutrosophy. *In Optimization Theory Based on Neutrosophic and Plithogenic Sets* 2020.

Works under review or in preparation

[U1] **Niharika Mathur** and Elizabeth D. Mynatt. "It Feels Like Hard Work Talking to It": Examining Conversational Breakdowns in AI Systems in Interactions with Older Adults with Cognitive Impairment. *In Preparation*.

[U2] **Niharika Mathur**, Alisha Pradhan, Elizabeth D. Mynatt, Masatomo Kobayashi, John Vines, Katie Seaborn, Erin Buehler, Agata Rozga, Jenny Waycott, John Rudnik and Tamara Zubatiy. Technology Mediated Caregiving For Older Adults Aging in Place. *Under Review at ACM CHI* 2025.

Research and Work Experience

Georgia Tech, School of Interactive Computing

2021 - present

Graduate Researcher in the Everyday Computing Lab (ECL) advised by Dr. Elizabeth Mynatt
Conducting research on the use of Assistive AI technologies by older adults with early-stage dementia and caregivers.

Georgia Tech, Office of Information Technology (OIT)

Summer 2020

User Experience Research Intern advised by David Lacy
Conducted user research (interviews and surveys) with 36 incoming freshmen students and designed the 2020 "Welcome Home to Georgia Tech" website. Conducted usability evaluations on the website with 17 incoming freshmen students. Website gathered 543 visits in the first week.

Georgia Tech, School of Interactive Computing

Fall 2019

Student Researcher in the Animal-Computer Interaction lab advised by Dr. Melody Moore-Jackson
Conducted user research (fly-on-the-wall observations and user interviews) with adopters at Atlanta Humane Society and provided design recommendations for instrumented dog toys for quantifying dog behavior to build better adoption profiles.

Tika Data Services

Summer 2018

User Research Intern (Bangalore, India)
Implemented privacy-by-design framework to design prototypes for a machine learning annotation tool and tested outcome efficiency using Monte Carlo Simulation. Conducted usability evaluations with 15 non-expert data annotators and developed concrete design guidelines for crowdsourced annotation tools to preserve annotator privacy.

The Upside Story (Design Agency)

Summer 2017

Design Research Intern (Jaipur, India)
Conducted needs analysis (interviews and contextual inquiry) and co-design sessions for 3 upcoming brands and contributed to crafting brand design strategy including website design, user research guidelines and content writing.

Awards and Recognition

2024 **Top 10 Selected Papers** | ACM CHI HCXAI Workshop
2023 **Special Recognition for Outstanding Review** | ACM CHI
2022 **Best Paper Award** | ACM ASSETS
2022 **Innovation in Health Systems Fellowship** | George Family Foundation
2022 **Travel Scholarship** | ACM Award
2020 **GVU Travel Award** | Georgia Tech
2015-2019 **Academic Scholarship (Undergraduate)** | VIT Vellore, India

Teaching Experience

Graduate Teaching Assistant (GTA) | Georgia Tech

- 2023 Course: Explainable AI | Instructor: Dr. Sonia Chernova
- 2022 Course: Digital Health Equity | Instructor: Dr. Andrea G. Parker
- 2021 Course: Human-Computer Interaction | Instructor: Dr. Elizabeth Mynatt
- 2020 Course: Human-Computer Interaction | Instructor: Dr. Elizabeth Mynatt

Skills

Research Methods and Analysis

Human-Centered Design, Qualitative Research study and analysis, User Interviews, Accessibility Research, Survey design, Contextual Inquiry, Think aloud studies, Design Research Methods for AI (Research through Design), Participatory and Co-Design, Inferential Statistical Analysis, Data Visualization.

Languages, Design Tools, Libraries and Technologies

Python, C/C++, R, HTML, Javascript, PyTorch, Pandas, Google Cloud, MongoDB, Figma, Photoshop, Tableau.

Relevant Coursework

HCI Foundations, Empirical Research Methods in HCI, Human-Centered Computing, Prototyping Interactive Systems, Human-Robot Interaction, Digital Health Equity, Explainable AI, Ubiquitous Computing.

Service

Leadership

- 2024 - **Chair** | Graduate Student Council for the School of Interactive Computing, Georgia Tech
- 2023-2024 **Academic Chair** | Graduate Student Council for the School of Interactive Computing, Georgia Tech
- 2023 **Student Representative** | HCC PhD Qualifying Exam Reworking Committee, Georgia Tech
- 2021-2024 **Student Council Member** | NSF AI Institute (AI-CARING)
- 2023 **Accessibility Volunteer Lead** | ACM ASSETS 2023
- 2022 **Student Volunteer (SV)** | ACM CHI 2022
- 2018 **Area Director** | Toastmasters International (TMI), VIT Vellore
- 2018 **Lead Editor** | Students for the Exploration and Development of Space (SEDS-VIT), India

Reviewer

- 2025 Springer Personal and Ubiquitous Computing (PAUC)
- 2024 ACM Transactions on Accessible Computing (TACCESS)
- 2024 ACM CSCW, ACM/IEEE HRI Pioneers, ACM DIS, ACM CUI
- 2023-2025 ACM CHI

Invited Talks

- 2024 AI Interventions in Medication Adherence | Drug Safety and Fall Prevention Task Force, Emory University, Atlanta.
- 2024 Doctoral Consortium | Summit on Responsible Computing, AI and Society (RCAIS), Georgia Tech, Atlanta.
- 2024 LLMs for older adults | GT OMSCS 8001: LLMs
- 2024 Conversational AI for Older Adults | Robotic Caregiving and Human Interaction Lab (RCHI), CMU, Pittsburgh.
- 2024 Explainable AI for Older Adults Aging in Place | ACM CHI Human-Centered Explainable AI Workshop, Honolulu.
- 2023 Alumni Panel | MS-HCI, Georgia Tech, Atlanta.
- 2020 Pivoting Mid-Process during User Research | World Information Architecture (IA) Day, Atlanta.

Student Mentoring

- 2024 - present Sangha (Ellie) Park | M.S. Human-Computer Interaction (Georgia Tech)
- 2021-2023 Josey Benandi | M.S. Human-Computer Interaction (Georgia Tech; now PM in the U.S. Digital Corps)
- 2021-2023 Lukas Schmid | M.S. Human-Computer Interaction (Georgia Tech; now UX Researcher at Microsoft)
- 2021-2022 Jiachen Li | M.S. Digital Media (Georgia Tech; now PhD student at Northeastern University)