

Arpit Mathur

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PROFILE

Ph.D. student in Human-Computer Interaction at Carnegie Mellon University with expertise in Machine Learning for Healthcare, Human-AI Collaboration, and Data Visualization. Interested in building useful, responsible AI tools that address real world problems in healthcare and improve patient outcomes.

SKILLS

Research Methods: Systematic literature reviews; think-aloud studies; Semi-structured interviews; self-assessment surveys; user studies; thematic analysis; Mechanical Turk; Prolific; hypothesis testing

Programming Languages: Python, Swift, Javascript, Java, C++, C#

Techniques: Deep Learning, Data Visualization, NLP, UI Design, Computer Graphics

Tools: Adobe Creative Suite, Sketch, Figma, Invision, Tableau, Matlab

EDUCATION

Carnegie Mellon University

Ph.D. - Human-Computer Interaction

Advisor: Adam Perer

Pittsburgh, PA

Aug 2024 - Present

Georgia Institute of Technology

Master of Science - Human-Computer Interaction

Atlanta, GA

Aug 2019 - May 2021

Indian Institute of Technology, Guwahati

Bachelor of Design - Design

Minor in Mathematics

Guwahati, India

Aug 2015 - May 2019

PUBLICATIONS

Conference Papers

Shapiro, B. R., Hall, R., **Mathur, A.**, & Zhao, E. (2024). [Turn Charts for Interaction Analysis: Visually Mapping the Conversation Floor](#). In Lindgren, R., Asino, T. I., Kyza, E. A., Looi, C. K., Keifert, D. T., & Suárez, E. (Eds.), Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024 (pp. 43-50). International Society of the Learning Sciences.

Mathur, A. & Shapiro, B.R. (2022). [Interactive Transcription Techniques for Interaction Analysis](#). In Proceedings of the 16th International Conference of the Learning Sciences (ICLS). International Society of the Learning Sciences, pg. 19-26. Hiroshima, Japan: International Society of the Learning Sciences.

Fulfagar, L., Gupta, A., **Mathur, A.**, Shrivastava, A. (2021). [Development and Evaluation of Usability Heuristics for Voice User Interfaces](#). In: Chakrabarti, A., Poovaiah, R., Bokil, P., Kant, V. (eds) Design for Tomorrow—Volume 1. ICoRD 2021. Smart Innovation, Systems and Technologies, vol 221. Springer, Singapore.

Mathur, A., Bhowmick, S., Sorathia, K. (2019). [A Study of Outbound Automated Call Preferences for DOTS Adherence in Rural India](#). In: Lamas, D., Loizides, F., Nacke, L., Petrie, H., Winckler, M., Zaphiris, P. (eds) Human-Computer Interaction – INTERACT 2019. INTERACT 2019. Lecture Notes in Computer Science(), vol 11748. Springer, Cham.

Poster Presentation

Mathur, A., Bruce, C. (2021). [A Study of Motivation, Preferences, and Pain Points Regarding Participation in Career Related Mentorship](#). In: Stephanidis, C., Antona, M., Ntoa, S. (eds) HCI International 2021 - Posters. HCII 2021. Communications in Computer and Information Science, vol 1419. Springer, Cham.

INDUSTRY EXPERIENCE

The MathWorks

User Experience Designer

Natick, MA

Jun 2021 - Jun 2024

- Supported multiple MATLAB and Simulink products, including MATLAB fixed-point workflows, Simulink Studio, and System Composer.
- Led 10+ collaborative design events, developed wireframes, and iteratively prototyped high-fidelity designs using Figma.

SAS Research and Development

User Experience Design Intern

Pune, India

May 2018 - Jul 2018

- Redesigned the SAS Analytics Credit Scoring Tool. Conducted Contextual Interviews with Risk Analysts in Indian banks, and used those insights to create high-fidelity sketch mockups.

RESEARCH EXPERIENCE

Carnegie Mellon University

Pittsburgh, PA

Doctoral Research Assistant

Aug 2024 - Present

- Conducting research at the intersection of Human-Computer Interaction, Machine Learning, Healthcare, and Human-AI Collaboration, focusing on developing innovative solutions in healthcare using advanced data visualization techniques.

Georgia Institute of Technology

Atlanta, GA

Graduate Research Assistant

Jan 2020 - May 2021

- Designed and Developed Interactive web based visualizations as course material for EC 3040 Semiconductor Devices.
- 4 interactive chapters were used by 100 students enrolled in EC 3040 over the fall semester 2020, to facilitate remote learning.

Indian Institute of Technology, Guwahati

Guwahati, India

Undergraduate Research Assistant.

Aug 2018 - May 2019

- Worked with the Govt. of Assam to Design and Test an IVR based Information Dissemination solution in 3 Rural districts of Assam, with 2000+ Patients.
- The IVR system was used to measure and improve adherence to the Tuberculosis (TB) Directly Observed Therapy (DOTS).

Usability Engineering and Human-Computer Interaction Lab, IITG

Guwahati, India

Undergraduate Research Intern.

Aug 2017 - Dec 2017

- Designed an iOS app for health and battery management of electric vehicles.
- Used Surveys and Semi-Structured Interviews for data collection
- Conceptualized User Flows, Low and High-Fidelity mockups for the app

TEACHING EXPERIENCE

The MathWorks

Atlanta, GA

Lead Instructor

Aug 2023

- Led the Try Design Workshop, a two day event to teach design methods to a multi-disciplinary group of contributors.

Georgia Institute of Technology

Atlanta, GA

Graduate Teaching Assistant

Aug 2020 - Dec 2020

- Facilitated remote learning by leading online lab sessions, virtual office hours, and offering project support via discussion boards and video calls.
- Developed additional online resources and recorded tutorials to help students with d3.js visualizations in a fully remote setting.

Georgia Institute of Technology

Atlanta, GA

Graduate Teaching Assistant.

Jan 2020 - May 2020

- Provided in-person support, guiding students through projects using d3.js and assisting with lab sessions, office hours, and project evaluations.
- Collaborated with the instructor to create course materials and grading rubrics, ensuring fair and consistent assessments.

HONORS AND AWARDS

HackGT Winner (2020)

Ranked among the top 8 out of 1,500 teams in HackGT 7: Reimagine Reality.

ICoRD'21 2021 - Most Distinguished Paper

Development & Evaluation of Usability Heuristics for Voice User Interfaces.

IndiaHCI 2018 - Winner, Student Design Consortium

First prize at the IndiaHCI 2018 Student Design Consortium.

EXTRACURRICULAR

Volunteer - Guwahati Half Marathon

Helped Organize the Guwahati Half Marathon - Run for a Tobacco Free India, as a student volunteer.

Secretary - Coding Club IIT Guwahati

Led the student organized coding club. Helped conduct hackathons, student lectures, and projects for the student community.

Head Organizer - TechExpo 2018

TechExpo 2018 - The largest student organized technical competition in India.