Maitraye Das

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Research Summary

My research interest sits broadly at the intersection of Human-Computer Interaction (HCI), Computer-Supported Cooperative Work (CSCW), and Accessible Computing, with a focus on enhancing accessibility in collaboration, creativity, and learning. Methodologically, I take a community-centered research approach that involves in-depth qualitative studies (e.g., contextual interviews, observations, long-term fieldwork) followed by the iterative design, development, and evaluation of new systems. As a researcher and educator, my broader goal is to cultivate a culture of access and inclusion in computing and contribute towards reducing equity gaps in education, employment, and creative work.

Appointments

Northeastern University, Boston, MA, USA
- *Assistant Professor* — Staring in Jan 2024
  Khoury College of Computer Sciences
  Department of Art + Design, College of Arts, Media and Design (CAMD)
- *Senior Research Fellow* | Khoury College of Computer Sciences — Sep – Dec 2023
- *Visiting Assistant Professor* | Khoury College of Computer Sciences — Oct 2022 – Aug 2023

University of Washington, Seattle, WA, USA
- *Postdoctoral Research Fellow* — Sep 2022 – Aug 2023
  Center for Research and Education on Accessible Technology and Experiences (CREATE)
  Paul G. Allen School of Computer Science and Engineering

Education

PhD in Technology and Social Behavior — 2022
(Dual degree in Computer Science & Communication)
Northwestern University, Evanston, IL, USA
Dissertation: Designing for Accessible Collaborative Content Creation in Ability-Diverse Teams
Committee: Darren Gergle (chair), Anne Marie Piper (co-chair), Marcelo Worsley, and Cynthia Bennett

MS in Technology and Social Behavior — 2021
Northwestern University, Evanston, IL, USA

BS in Computer Science and Engineering (CSE) *with Honors* & *Magna cum laude* — 2015
Bangladesh University of Engineering and Technology (BUET)
Thesis: Protecting Genomic Privacy in Medical Tests using Distributed Storage
Advisor: Tanzima Hashem

Peer-Reviewed Publications

[Top-tier venues in Human-Computer Interaction include extensively peer-reviewed conferences such as CHI and CSCW. These highly selective conferences are intended for archival papers and comparable to journals in visibility, selectivity, and impact. Directly mentored students are marked with an asterisk (*).]

P12. **Maitraye Das**, Darren Gergle, Anne Marie Piper. 2023. Simphony: Enhancing Accessible Pattern Design Practices among Blind Weavers. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI '23)*. [acceptance rate: 28.39%]

P11. **Maitraye Das**, *Thomas McHugh, Anne Marie Piper, and Darren Gergle. 2022. Co11ab: Augmenting Accessibility in Synchronous Collaborative Writing for People with Vision Impairments. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI '22)*. [first-round acceptance rate: 12.5%]

P10. **Maitraye Das,** Anne Marie Piper, and Darren Gergle. 2022. Design and Evaluation of Accessible Collaborative Writing Techniques for People with Vision Impairments. In *ACM Transactions on Computer-Human Interaction (TOCHI)*, Vol. 29, 2, Article 9 (April 2022). [Impact Factor: 4.11]

🏆P9. **Maitraye Das,** John Tang, Kathryn E. Ringland, and Anne Marie Piper. 2021. Towards Accessible Remote Work: Understanding Work-from-Home Practices of Neurodivergent Professionals. In *Proceedings of the ACM on Human-Computer Interaction,* Vol. 5, CSCW1, Article 183. [Impact Factor: 4.57]
Best Paper Award (top 1% of submissions)
Recognition for Contribution to Diversity & Inclusion

⚥P8. Kelly Mack, **Maitraye Das,** Dhruv Jain, Danielle Bragg, John Tang, Andrew Begel, Erin Beneteau, Josh Urban Davis, Abraham Glasser, Joon Sung Park, and Venkatesh Potluri. 2021. Mixed Abilities and Varied Experiences: A Group Autoethnography of a Virtual Summer Internship. In *Proceedings of the ACM Conference on Computers & Accessibility (ASSETS '21)*. [acceptance rate: 29%]
Best Paper Nomination
Invited article in Communications of the ACM Research Highlights

P7. Katya Borgos-Rodriguez, **Maitraye Das,** and Anne Marie Piper. 2021. Melodie: A Design Inquiry into Accessible Crafting through Audio-Enhanced Weaving. In *ACM Transactions on Accessible Computing (TACCESS),* Vol. 14, 1, Article 5 (March 2021). [Impact Factor: 3.20]

⚥P6. **Maitraye Das,** Katya Borgos-Rodriguez, and Anne Marie Piper. 2020. Weaving by Touch: A Case Analysis of Accessible Making. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI '20)*. [acceptance rate: 24.3%]
Best Paper Honorable Mention (Top 5% of submissions)**.**

⚥P5. **Maitraye Das,** Darren Gergle, and Anne Marie Piper. 2019. "It doesn't win you friends": Understanding Accessibility in Collaborative Writing for People with Vision Impairments. In *Proceedings of the ACM on Human-Computer Interaction*, Vol. 3, CSCW, Article 191. [Impact Factor: 4.57]
Best Paper Honorable Mention (Top 5% of submissions)

P4. **Maitraye Das,** Brent Hecht, and Darren Gergle. 2019. The Gendered Geography of Contributions to OpenStreetMap: Complexities in Self-Focus Bias. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI '19)*, Paper 563. [acceptance rate: 23.8%]

P3. *Nusrat Jahan Mazumder, **Maitraye Das,** Tanzima Hashem, Sharmin Afrose, and *Khandaker Ashrafi Akbar. 2019. Towards Privacy-preserving Authenticated Disease Risk Queries. In *Journal of Information Processing*, Vol. 27 (September 2019).

P2. Moushumi Sharmin, Monsur Hossain, Abir Saha, **Maitraye Das,** Margot Maxwell, and Shameem Ahmed. 2018. From Research to Practice: Informing the Design of Autism Support Smart

Technology. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI '18)*. [acceptance rate: 25%]

🏆 P1.   **Maitraye Das,** *Nusrat Jahan Mazumder, Sharmin Afrose, *Khandaker Ashrafi Akbar, and Tanzima Hashem. 2018. A Novel Secret Sharing Approach for Privacy-Preserving Authenticated Disease Risk Queries in Genomic Databases. In *Proceedings of the 42nd IEEE International Conference on Computers, Software, & Applications (COMPSAC '18)*. [acceptance rate: 24%]
Best Paper Award

Book Chapter

B1.   **Maitraye Das,** Katya Borgos-Rodriguez, and Anne Marie Piper. 2023. A Case Study of Skilled Craftwork among Blind Fiber Artists. In Elizabeth Guffey ed. *After Universal Design: The Disability Design Revolution.* Bloomsbury.

Doctoral Consortium

D1.   **Maitraye Das.** 2020. Designing for Collaborative Content Creation for People with Vision Impairments. In the *Conference Companion Publication on Computer Supported Cooperative Work & Social Computing (CSCW '20).*

Workshop Co-organized

W1.   Maryam Bandukda, Giulia Barbareschi, Aneesha Singh, Dhruv Jain, **Maitraye Das,** Tamanna Motahar, Jason Wiese, Lynn Cockburn, Amit Prakash, David Frohlich, Catherine Holloway. 2022. A Workshop on Disability Inclusive Remote Co-Design. In *Proceedings of the ACM Conference on Computers & Accessibility (ASSETS '22).*

Short Papers, Posters, and Presentations

S15.   **Maitraye Das.** 2021. Augmenting Ability-Diverse Collaboration. In *MIT EECS Rising Stars Workshop*.

S14.   **Maitraye Das.** 2021. Designing for Accessible Collaborative Content Creation for People with Vision Impairments. In *Human-Computer Interaction Consortium (HCIC '21).*

S13.   **Maitraye Das.** 2021. Rethinking Power and Politics in Care Work within Ability-Diverse Maker Communities. In the *Workshop on The Future of Care Work at the ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW '21).*

S12.   **Maitraye Das,** Katya Borgos-Rodriguez, and Anne Marie Piper. 2020. Rethinking Power and Politics in Accessible Making. In the *Workshop on Investigating the Role of Critical Disability Studies in HCI at the ACM Conference on Human Factors in Computing Systems (CHI '20).*

S11.   **Maitraye Das.** 2019. Who Can See What: Privacy and Audience Management for People with Vision Impairments on Social Media. In the *Workshop on Addressing the Accessibility of Social Media at the ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW '19).*

S10.   **Maitraye Das.** 2019. Designing for Collaborative Content Creation for People with Vision Impairments. *Microsoft Research PhD Fellowship Finalist Presentation*, Redmond, WA, USA.

S9.   **Maitraye Das.** 2018. Understanding Collaborative Writing Practices of People with Visual Impairments. In the *ACM International Conference on Pervasive & Ubiquitous Computing (UbiComp '18).*

S8.   **Maitraye Das.** 2018. Towards Understanding the Effects of Social Networking on Postpartum Depression in Women. *Grace Hopper Celebration (GHC)*, USA.

S7.   Abir Saha and **Maitraye Das.** 2017. Impact of Social Networking on Post-Partum Depression in Women: An Analysis in the Context of Bangladesh. In *Proceedings of the 20ᵗʰ IEEE International Conference on Computer & Information Technology (ICCIT '17)*.

S6.   **Maitraye Das** and Abir Saha. 2017. An Automated Speech-Language Therapy Tool with Interactive Virtual Agent and Peer-to-Peer Feedback. In *Proceedings of the 4th International Conference on Advances in Electrical Engineering (ICAEE '17)*.

S5.   *Fatema Khan and **Maitraye Das**. 2016. SafeTeens: Supporting Parental Monitoring of Children's Internet Activities. In *the ACM Student Research Competition at the Grace Hopper Celebration (GHC)*, USA.

S4.   *Fatema Khan, **Maitraye Das,** and *Ahiya Ahammed. 2016. PurpleAid: An mHealth Platform to Combat Health Hazards of Women. In *Proceedings of the 2016 International Conference on Medical Engineering, Health Informatics & Technology (MediTec '16)*.

S3.   **Maitraye Das,** Sunandita Sarker, and Syeda Lammim Ahad. 2016. A Novel Health Support System with Biometric Data Acquisition Device. In *Proceedings of the 19ᵗʰ International Conference on Computer & Information Technology (ICCIT '16)*.

S2.   **Maitraye Das,** Sharmin Afrose, and Tanzima Hashem. 2015. Protecting Genomic Privacy in Medical Tests using Distributed Storage. *Grace Hopper Celebration of Women in Computing (GHC)*, USA.

🏆 S1.   **Maitraye Das,** Sunandita Sarker, and Shahina Ferdous. 2014. SpeechAid: A Self-treatment System for Individuals with Speech Disorder. *Grace Hopper Celebration India (GHCI)*.
      Best Technical Poster Award

Magazine Article

M1.   Maria Hamdani, Najma Farrukh Hamdani, **Maitraye Das.** *In Press.* How to Enhance Productivity of Your Employees with ADHD in the Virtual Workplace. In *MIT Sloan Management Review.*

Awards and Honors

- *Communications of the ACM Research Highlights (CACM-RH) [P8]*   2022
  From <u>ACM's website:</u> "With a readership of over 100,000 from over 100 countries, publication in CACM-RH provides unmatched visibility and is regarded as a significant honor."

- *Advanced Rehabilitation Research and Training (ARRT) Postdoctoral Fellowship*   2022–2023
  UW Center for Research & Education on Accessible Technology & Experiences | Funding: NIDILRR

- *Donald H. and Carolyn E. Ecroyd Fellowship*   2022
  Department of Communication Studies, Northwestern University

- *Rising Star in Electrical Engineering and Computer Science (EECS)*   2021
  Massachusetts Institute of Technology

- *Best Paper Award [P9]*   2021
  ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW)

- *Recognition for Contribution to Diversity & Inclusion [P9]*   2021
  ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW)

- *Best Paper Nomination [P8]*   2021
  ACM Conference of Computers & Accessibility (ASSETS)

- *PhD Student Research Award* | Dept. of Computer Science, Northwestern University   2021

- *Best Paper Honorable Mention Award [P6]*   2020
  ACM Conference on Human Factors in Computing Systems (CHI)

- *Finalist (among top 20 students)* | Microsoft Research PhD Fellowship   2020

- *Best Paper Honorable Mention Award [P5]*   2019
  ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW)

- *Special Recognition for Outstanding Review*
  ACM Conference on Human Factors in Computing Systems (CHI), 5 times   2021–2023
  ACM Conference on Computer-Supported Cooperative Work (CSCW), 2 times   2021, 2019
  ACM Conference on Designing Interactive Systems (DIS)   2022

- *Best Paper Award [P1]*   2018
  IEEE International Conference on Computers, Software, & Applications (COMPSAC)

- *Student Scholarship* | Grace Hopper Celebration USA   2018

- *Best Undergraduate Thesis Award* | Dept. of CSE, Bangladesh U of Engg. & Tech   2015

- *Student Scholarship* | Grace Hopper Celebration India   2014

- *Best Technical Poster [S1]* | Grace Hopper Celebration India   2014

- *Dean's List Award* | Bangladesh University of Engineering & Tech   2011–2015

- *University Merit Scholarship* | Bangladesh University of Engineering & Tech   2011–2014

Grants

- *Postdoc Research Award (sole PI: $10,000)*   2022–2023
  Title: Designing Accessible Technologies for Collaborative Ideation in Ability-Diverse Teams
  Paul G. Allen School of Computer Science & Engineering, University of Washington

- *Graduate Research Grant ($2,999)*   2021–2022
  School of Communication, Northwestern University

- *Dissertation Research Grant ($1,500)*   2021
  Department of Communication Studies, Northwestern University

- *Conference Travel Grant*
  SIGACCESS Diversity & Inclusion Scholarship for ACM ASSETS conference   2020
  Northwestern University (~$6,000)   2018–2022
  ACM International Conference on Pervasive & Ubiquitous Computing ($600)   2018

Teaching Experience

University of Washington | Human-Centered Design & Engineering   Spring - Summer 2023
Lead with Julie Kientz | *HCDE 596 - Directed Research Group (6 students)*

Northwestern University | Dept. of Computer Science / Communication Studies   Winter 2022
Teaching Assistant | *COMP_SCI 314 / COMM_ST 351 – Technology & Human Interaction* (56 students)

United International University (UIU), Dhaka, Bangladesh   Oct 2015 - Mar 2017
Lecturer/Instructor | Department of Computer Science & Engineering (CSE)

- *CSE 313 – Computer Architecture*
  Fall 2015: 29 students

- *CSE 225 – Digital Logic Design*
  Fall 2015: 27 students; Summer 2016: 26 students; Fall 2016: 54 students in two classes

- *CSE 226 – Digital Logic Design Laboratory*
  Fall 2015: 77 students in three classes; Spring 2016: 29 students
  Summer 2016: 49 students in two classes; Fall 2016: 40 students in two classes

- *CSE 236 – Assembly Programming Laboratory*
  Spring 2016: 15 students; Summer 2016: 29 students

- *CSE 113 – Electrical Circuits*
  Spring 2016: 67 students in two classes; Summer 2016: 18 students; Fall 2016: 31 students

Course Designed

Northwestern University | *Accessible Collaboration*   Mar 2021
Computer Science/Communication Studies undergraduate course | Supervised by *Darren Gergle*

Invited Talks, Panels, and Demonstrations

Demo: *Fostering Computational Thinking among Neurodiverse Preschoolers*   June 2023
- University of Washington | Spring Research Showcase by CREATE

Talk: *Designing for Accessible Collaborative Content Creation in Ability-Diverse Teams*
- Carnegie Mellon University Human-Computer Interaction Institute | A11y Lunch   Mar 2023
- University of Washington | Makeability Lab   Dec 2022
- University of Washington | DUB seminar   Nov 2022
- University of Illinois Urbana-Champaign | Department of Computer Science   Apr 2022
- Pennsylvania State University | College of Information Sciences & Technology   Mar 2022
- Virginia Tech | Department of Computer Science   Mar 2022
- University of Utah | School of Computing   Mar 2022
- Johns Hopkins University | Department of Computer Science   Mar 2022
- Indiana University Bloomington | Luddy School of Informatics, Computing, & Engg.   Mar 2022
- Northeastern University | Khoury College of Computer Sciences   Feb 2022
- Georgia Institute of Technology | Department of Interactive Computing   Feb 2022
- Ohio State University | Department of Computer Science & Engineering   Feb 2022
- Arizona State University | School of Computing & Augmented Intelligence   Feb 2022
- George Mason University | Department of Computer Science   Feb 2022
- New Jersey Institute of Technology | Department of Informatics   Feb 2022
- Massachusetts Institute of Technology CSAIL | Visualization Group   Dec 2021
- University of Washington | CREATE   Oct 2021

Talk: *Understanding Accessibility in Collaborative Writing for People with Vision Impairments*
- Microsoft Office and Windows Accessibility Teams   Feb 2021

Guest Lecture: *Understanding Accessibility in Collaborative Writing*
- Input & Interaction Course (INFO 463) | iSchool, University of Washington   Nov 2020

Talk: *Understanding Accessibility in Remote Work for Neurodivergent Professionals*
- New Future of Work Group | Microsoft   Sep 2020

Talk: *Designing for Accessible Interaction*
- Bangladesh HCI and ICTD Study and Research Group   Apr 2020

Demo: *Technologies for Accessible Collaborative Writing and Weaving*
- TSB Prospective PhD Students Visiting Weekend | Northwestern University   2022, 2019

Professional Service

Organizing Committee Member

ACM ASSETS (Conference on Computers & Accessibility) | Accessibility Co-Chair   2024

Program Committee Member

ACM CHI | Associate Chair, Learning, Education, and Families Subcommittee   2024
ACM CHI | Associate Chair, Understanding People: Qual Methods Subcommittee   2023
ACM ASSETS   2022, 2023
ACM COMPASS (Conference on Computing & Sustainable Societies)   2021
Grace Hopper Celebration, HCI Track   2021

Reviewer: Conferences

ACM CHI [*outstanding review recognitions: 5]   2021 - Present
ACM CSCW [*outstanding review recognitions: 2]   2019 - 2021, 2023
ACM DIS [*outstanding review recognition: 1]   2020, 2022
ACM UIST (Symposium on User Interface Software & Technology)   2022
IEEE COMPSAC (International Conference on Computers, Software, & Applications)   2021
Grace Hopper Celebration   2017
Australasian Database Conference   2016

Reviewer: Journals

ACM TOCHI (Transactions of Computer-Human Interaction)   2023
Springer CSCW (Computer Supported Cooperative Work)   2022
ACM TACCESS (Transactions on Accessible Computing)   2021

Student Volunteer

ACM CHI   2019, 2021
ACM CSCW   2019
ACM UbiComp (International Conference on Pervasive & Ubiquitous Computing)   2018

Session Facilitator

Human-Computer Interaction Consortium | Provocation & Next Steps (breakout group)   2021
Asia-Oceania Accessibility Meet and Share Workshop (breakout group)   2021

University Service

At Northeastern University

Reviewer | Computer Science PhD admission, Khoury	2023
Reviewer | Interdisciplinary Design and Media PhD admission, CAMD	2023

At University of Washington

Reviewer | CREATE research proposals on race, technology, and disability	2023
Judge | HCDE graduate capstone showcase	2023
Co-organizer | CREATE Holiday Party	2022
Judge | CSE 440 – Intro to HCI course poster showcase	2022

At Northwestern University

Panelist | TSB Prospective PhD Students Visiting Weekend	2018, 2021
Publicity Co-chair and Planning Committee Member | InfoSocial Graduate Conference	2019
Student volunteer | InfoSocial Graduate Conference	2018

Advising

Doctoral Advising:

▪ Rudaiba Adnin | PhD student, CS, Northeastern	Mar 2023 – Present

Additional Graduate Research Advising and Mentoring:

▪ Aaleyah Lewis | PhD student, CSE, UW	Oct 2022 – Present
▪ Bonnie Liu | MS student, HCDE, UW	Jun – Aug 2023
▪ Katrina Vergara | MS student, HCDE, UW	Jun – Aug 2023
▪ Patricia Ho | MS student, HCDE, UW	Apr – Jun 2023
▪ Ke Luka Liu | MS student, HCDE, UW	Apr – Jun 2023
▪ Ganesh Karthik Sankar | MS student, HCDE, UW	Jan – Mar 2022
▪ Evan Li | MS student, Mechanical Engineering, Northwestern	2020

Undergraduate and Highschooler Research Advising and Mentoring:

▪ Megan Tran | Undergrad, Informatics, UW	Jun – Aug 2023
▪ Amanda Ong | Undergrad, Interaction Design, UW	Jun – Aug 2023
▪ Thomas McHugh | Undergrad, Learning Sciences, Northwestern	2020 – 2021

Coauthored paper: [P11]. Own the first place at the ACM Student Research Competition (SRC) at ASSETS 2020 and SRC Grand Finals 2021. Next position: Software engineer, Apple.

▪ Rawan Mohamed | Undergrad, CS, Northwestern	2020
▪ Caroline Brewley | High school student researcher	2019
▪ Nusrat Jahan Mazumder | Undergrad, CSE, Bangladesh U of Engg. & Tech	2017–2018

Coauthored papers: [P1, P3]. Next position: PhD student, University of Virginia.

▪ Khandaker Ashrafi Akbar | Undergrad, CSE, Bangladesh U of Engg. & Tech	2017–2018

Coauthored papers: [P1, P3]. Next position: PhD student, University of Texas at Dallas.

▪ Fatema Khan | Undergrad, CSE, United International University	2016

Coauthored papers: [S1, S4]. Next position: Lecturer, Prime Asia University, Bangladesh.

▪ Ahiya Ahammed | Undergrad, CSE, United International University	2016

Coauthored paper: [S4]. Next position: PhD student, University of Debrecen, Hungary.

Outreach & Memberships

Co-host & Co-organizer

    Inspiring Stories (podcast series on Bangladeshi women in STEM)   2020 – 2021

Member

    Association for Computing Machinery (ACM)   2017 – Present
    Special Interest Group on Computer-Human Interaction (SIGCHI)   2017 – Present
    Special Interest Group on Accessible Computing (SIGACCESS)   2017 – Present
    Northwestern Graduate Women in Computing   2019 – 2021
    Bangladeshi Women in Computer Science & Engineering   2015 – 2019

Code Coach Volunteer

    BraveCamp Chicago, Brave Initiatives (non-profit coding camp for high school girls)   Summer 2018

Vice-President

    Murchhona: BUET (cultural club)   2014 – 2015