

Maitraye Das

maitraye.github.io

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Education

NORTHWESTERN UNIVERSITY (NU)

EVANSTON, IL, USA

PhD in Technology and Social Behavior

Spring 2022 (Expected)

(Dual PhD in Computer Science and Communication)

Advised by Darren Gergle and Anne Marie Piper

MS in Technology and Social Behavior

Winter 2021

GPA: 3.97 out of 4.00

BANGLADESH UNIVERSITY OF ENGINEERING & TECHNOLOGY (BUET)

BANGLADESH

Bachelor of Science in Computer Science and Engineering

Sep 2015

Advised by Tanzima Hashem

GPA: 3.85 out of 4.00 (top 6% of the graduating class)

Research Areas

Human-Computer Interaction, Accessibility, Computer-Supported Cooperative Work

Research Experience

COLLAB LAB | NORTHWESTERN UNIVERSITY

Fall 2017 – Present

Graduate Research Assistant | advised by **Darren Gergle**

- Conducted contextual interviews and remote observations with visually impaired professionals and academics. Performed qualitative analysis to understand collaborative writing practices among blind and sighted co-authors. Iteratively developing non-speech audio based techniques for accessible collaborative writing. Conducted first-phase system evaluation for asynchronous editing with 48 blind participants. Currently designing an experimental study to evaluate the use of non-speech audio in synchronous collaborative editing for visually impaired writers. [CSCW 2019]
- Collected a dataset of nearly 0.45 billion edits by 2000 OpenStreetMap editors using Python and Osmium. Performed quantitative analysis to investigate gender-based self-focus bias in OpenStreetMap. [CHI 2019]

INCLUSIVE TECHNOLOGY LAB | NORTHWESTERN UNIVERSITY

Spring 2018 – Present

Graduate Researcher | advised by **Anne Marie Piper**

- Conducted ethnographic field observations and contextual interviews at a weaving studio for adults with vision impairments. Designed multimodal augmentations on a loom to enhance collaborative weaving experiences among blind weavers and their sighted instructors. Currently developing an audio-tactile system to support collaborative designing of weave patterns for blind weavers. [CHI 2020, TACCESS]

ABILITY TEAM | MICROSOFT RESEARCH, Redmond, USA

Summer 2020

Research Intern | mentored by **John Tang**

- Conducted semi-structured interviews with 36 neurodivergent professionals. Performed thematic analysis to highlight accessibility issues in remote work during the COVID-19 pandemic. [CSCW 2021]

WESTERN WASHINGTON UNIVERSITY, Washington, USA

Summer 2017

Researcher (remote) | mentored by **Moushumi Sharmin & Shameem Ahmed**

- Performed a systematic literature review on the design of smart technologies for children on the autism spectrum. [CHI 2018]

BANGLADESH UNIVERSITY OF ENGINEERING & TECHNOLOGY

Aug 2014 – Sep 2017

Undergraduate Researcher | advised by **Tanzima Hashem**

- Developed a secret sharing algorithm for privacy-preserved and authenticated queries in genomic databases to compute disease susceptibility. [COMPSAC 2018, Journal of Information Processing 2019]

Honors & Awards

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| Finalist Microsoft Research PhD Fellowship | 2020 |
| Best Paper Honorable Mention Award ACM CHI [C1] | 2020 |
| Best Paper Honorable Mention Award ACM CSCW [J4] | 2019 |
| Special Recognition for Outstanding Review ACM CHI'21 (x3), ACM CSCW'19 | 2021, 2019 |
| Conference Travel Grant Northwestern University (\$2300 + \$1500) | 2019, 2018 |
| Best Paper Award IEEE COMPSAC [C4] | 2018 |
| Student Travel Grant ACM UbiComp (\$600) | 2018 |
| Student Scholarship Grace Hopper Celebration, USA | 2018 |
| Best Undergraduate Thesis Award Dept. of CSE, BUET | 2015 |
| Best Technical Poster Grace Hopper Celebration India | 2014 |
| Student Scholarship Grace Hopper Celebration India | 2014 |
| Dean's List Award Bangladesh University of Engg. & Technology (x4) | 2011-2015 |
| University Merit Scholarship Bangladesh University of Engg. & Technology (x5) | 2011-2014 |

Journal Articles

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- J1. **Maitraye Das**, Anne Marie Piper, and Darren Gergle. Design and Evaluation of Collaborative Writing Techniques for People with Vision Impairments. Under review in *ACM Transactions on Computer-Human Interaction (TOCHI)*. Impact Factor: 3.147
- J2. **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 (April 2021), 30 pages.
- J3. 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)*. Impact Factor: 1.54
- ♀ J4. **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 (November 2019), 26 pages. DOI: [10.1145/3359293](https://doi.org/10.1145/3359293) [acceptance rate: 31.2%] ***Best Paper Honorable Mention** (Top 5% of submitted papers).
- J5. 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), pp. 624-642. DOI: [10.2197/ipsjip.27.624](https://doi.org/10.2197/ipsjip.27.624)

Peer-Reviewed Conference Papers¹

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- ♀ C1. **Maitraye Das**, Katya Borgos-Rodriguez, and Anne Marie Piper. 2020. Weaving by Touch: A Case Analysis of Accessible Making. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*, 1-15. DOI: [10.1145/3313831.3376477](https://doi.org/10.1145/3313831.3376477) [acceptance rate: 24.3%] ***Best Paper Honorable Mention** (Top 5% of submitted papers).
- C2. **Maitraye Das**, Brent Hecht, and Darren Gergle. 2019. The Gendered Geography of Contributions to OpenStreetMap: Complexities in Self-Focus Bias. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19)*, Paper 563, 14 pages. DOI: [10.1145/3290605.3300793](https://doi.org/10.1145/3290605.3300793) [acceptance rate: 23.8%]
- C3. 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 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*, Paper 102, 1-16. DOI: [10.1145/3173574.3173676](https://doi.org/10.1145/3173574.3173676) [acceptance rate: 25%]

¹ Peer-reviewed conferences such as CHI are top-tier publication venues in Human-Computer Interaction. They are highly selective, extensively reviewed, and intended for archival papers only. When available, the acceptance rate is included.

- 🏆 C4. **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, and Applications (COMPSAC '18)*, pp. 645-654. DOI: [10.1109/COMPSAC.2018.00097](https://doi.org/10.1109/COMPSAC.2018.00097) [acceptance rate: 24%] ***Best Paper Award**
- C5. 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 and Information Technology (ICCIT '17)*, pp. 1-6. DOI: [10.1109/ICCITECHN.2017.8281831](https://doi.org/10.1109/ICCITECHN.2017.8281831)
- C6. **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)*, pp. 510-515, DOI: [10.1109/ICAEE.2017.8255409](https://doi.org/10.1109/ICAEE.2017.8255409)
- C7. 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 and Technology (MediTec '16)*, pp. 1-6. DOI: [10.1109/MEDITEC.2016.7835368](https://doi.org/10.1109/MEDITEC.2016.7835368)
- C8. **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 and Information Technology (ICCIT '16)*, pp. 201-206. DOI: [10.1109/ICCITECHN.2016.7860195](https://doi.org/10.1109/ICCITECHN.2016.7860195)

Refereed Workshop Short Papers, Posters, and Doctoral Consortia

1. **Maitraye Das**. 2020. Designing for Collaborative Content Creation for People with Vision Impairments. In *2020 Conference Companion Publication on Computer Supported Cooperative Work and Social Computing (CSCW '20)*. DOI: [10.1145/3406865.3418369](https://doi.org/10.1145/3406865.3418369) [Doctoral Consortium]
2. **Maitraye Das**, Katya Borgos-Rodriguez, and Anne Marie Piper. 2020. Rethinking Power and Politics in Accessible Making. In *ACM CHI Workshop "Nothing About Us Without Us": Investigating the Role of Critical Disability Studies in HCI*.
3. **Maitraye Das**. 2019. Who Can See What: Privacy and Audience Management for People with Vision Impairments on Social Media. In *ACM CSCW Workshop on Addressing the Accessibility of Social Media*.
4. **Maitraye Das**. 2018. Understanding Collaborative Writing Practices of People with Visual Impairments. In *Proceedings of the 2018 ACM International Conference on Pervasive and Ubiquitous Computing (UbiComp '18)*, pp. 1744-1749. DOI: [10.1145/3267305.3277807](https://doi.org/10.1145/3267305.3277807)
5. **Maitraye Das**. 2018. Towards Understanding the Effects of Social Networking on Postpartum Depression in Women. In *Grace Hopper Celebration of Women in Computing*, USA.
6. **Maitraye Das**, Sharmin Afrose, and Tanzima Hashem. 2015. Protecting Genomic Privacy in Medical Tests using Distributed Storage. In *Grace Hopper Celebration of Women in Computing*, USA.
7. **Maitraye Das**, Sunandita Sarker, and Shahina Ferdous. 2014. SpeechAid: A Self-treatment System for Individuals with Speech Disorder via Mobile Application. In *Grace Hopper Celebration India*. ***Best Technical Poster Award**

Teaching Experience

UNITED INTERNATIONAL UNIVERSITY (UIU)

DHAKA, BANGLADESH

Lecturer | Dept. of Computer Science and Engineering

Oct 2015 – Mar 2017

- Instructed courses on Computer Architecture, Digital Logic Design, Electrical Circuits and Assembly Programming Language.

Skills

Programming: Python, R, C, C++, Java, HTML, CSS

Methods: Interviews, thematic analysis, ethnographic field observation, survey design, experiment design, prototyping

Students Mentored

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| Thomas McHugh Undergrad in Computer Science, Northwestern University | 2020-Present |
| Rawan Mohamed Undergrad in Computer Science, Northwestern University | 2020 |
| Caroline Brewley High school student researcher | 2019 |
| Nusrat Jahan Mozumder Undergrad in Computer Science & Engg., BUET | 2017-2018 |
| Khandaker Ashrafi Akbar Undergrad in Computer Science & Engg., BUET | 2017-2018 |
| Fatema Khan Undergrad in Computer Science & Engg., UIU | 2016 |
| Ahiya Ahammed Undergrad in Computer Science & Engg., UIU | 2016 |

Invited Talks

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| Input and Interaction (INFO 463) University of Washington | Nov 2020 |
| ▪ Guest lecture: Accessibility in Collaborative Writing for People with Vision Impairments (virtual) | |
| Bangladesh HCI and ICTD Study and Research Group , Virtual Event | April 2020 |
| ▪ Talk: Designing for Accessible Interaction | |
| Microsoft Research PhD Fellowship Finalist Presentation Redmond, WA, USA | Nov 2019 |
| ▪ Poster: Designing for Collaborative Content Creation for People with Vision Impairments | |

Academic Services

Reviewer

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| ACM CHI [*outstanding review recognition: 3] | 2021 |
| ACM CSCW [*outstanding review recognition: 1] | 2019-2020 |
| ACM DIS | 2020 |
| GHC Faculty Scholarship | 2017 |
| Australasian Database Conference | 2016 |

Student Volunteer

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| ACM CSCW | 2019 |
| ACM CHI | 2019 |
| ACM UbiComp | 2018 |
| InfoSocial Graduate Conference at Northwestern University | 2018 |

Publicity Co-chair

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| InfoSocial Graduate Conference at Northwestern University | 2019 |
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Outreach & Memberships

Member

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| Northwestern Graduate Women in Computing | 2019 - Present |
| Association for Computing Machinery (ACM), SIGCHI, SIGACCESS | 2017 - Present |
| Bangladeshi Women in Computer Science and Engineering | 2015 - Present |

Code Coach Volunteer

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| BraveCamp Chicago, Brave Initiatives | Summer 2018 |
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Vice-President

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| Murchhona:BUET (Cultural Club) | 2014 – 2015 |
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