Maitraye Das

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Education

NORTHWESTERN UNIVERSITY (NU) — EVANSTON, IL, USA
PhD in **Technology and Social Behavior** — Fall 2017 - Present
Advised by Darren Gergle
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 Interests

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

Research Experience

COLLAB LAB | NORTHWESTERN UNIVERSITY — Fall 2017 – Present
Graduate Research Assistant | advised by **Darren Gergle**

- Designed an experimental study to evaluate the use of non-speech audio representations in collaborative writing for screen reader users. Developed prototype using Python and Amazon Polly, conducted testing sessions with 48 participants and performed mixed-method analyses.
- Collected a dataset of nearly 0.45 billion edits by 2000 OpenStreetMap editors using Python and Osmium. Quantitatively analyzed gender-based self-focus bias using R and Pandas. [CHI 2019]

INCLUSIVE TECHNOLOGY LAB | NORTHWESTERN UNIVERSITY — Spring 2018 – Present
Graduate Researcher | mentored by **Anne Marie Piper**

- Conducted ethnographic field observations and contextual interviews at a weaving studio for adults with vision impairments. Developing multimodal augmentations for enhancing collaborative weaving experiences among visually impaired weavers and their sighted instructors. [CHI 2020, TACCESS]
- Conducted semi-structured interviews with 20 visually impaired professionals. Performed qualitative analysis to understand collaborative writing practices among blind and sighted co-authors. [CSCW 2019]

ABILITY TEAM | MICROSOFT RESEARCH — Summer 2020
Research Intern | mentored by **John Tang**

- Conducted semi-structured interviews with 36 neurodivergent professionals. Performed thematic analysis to study accessibility of remote work during the COVID-19 pandemic. Presented findings to other researchers and product team members internally and at the Future of Remote Work initiative.

WESTERN WASHINGTON UNIVERSITY — 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

Finalist | Microsoft Research PhD Fellowship 2020
Best Paper Honorable Mention Award | ACM CHI 2020
Best Paper Honorable Mention Award | ACM CSCW 2019
Special Recognition for Outstanding Review | ACM CHI'21 (x3), ACM CSCW'19 2021, 2019
Best Paper Award | IEEE COMPSAC 2018
Student Travel Grant | ACM UbiComp 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 & **University Merit Scholarship** | BUET 2011-2015

Peer-Reviewed Publications

Maitraye Das, John Tang, Kathryn Ringland, and Anne Marie Piper. Towards Accessible Remote Work: Understanding Work-from-Home Practices of Neurodivergent Professionals. Under review.

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).*

Katya Borgos-Rodriguez, **Maitraye Das,** and Anne Marie Piper. Melodie: A Design Inquiry into Accessible Crafting through Audio-Enhanced Weaving. To appear in *ACM Transactions on Accessible Computing (TACCESS).*

Maitraye Das, Katya Borgos-Rodriguez, and Anne Marie Piper. 2020. Weaving by Touch: A Case Analysis of Accessible Making. In *Proceedings of the Conference on Human Factors in Computing Systems (CHI '20)*, 1-15. DOI: https://doi.org/10.1145/3313831.3376477 ***Best Paper Honorable Mention Award**

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: https://doi.org/10.1145/3359293 ***Best Paper Honorable Mention Award**

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: https://doi.org/10.1145/3290605.3300793

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: https://doi.org/10.2197/ipsjjip.27.624

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 ***Best Paper Award**

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*, Paper 102, 1-16. DOI: https://doi.org/10.1145/3173574.3173676

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

Doctoral Consortia, Workshops, and Posters

Maitraye Das. 2020. Designing for Collaborative Content Creation for People with Vision Impairments. In *the 2020 Conference Companion Publication on Computer Supported Cooperative Work and Social Computing (CSCW '20).* DOI: https://doi.org/10.1145/3406865.3418369

Maitraye Das, Katya Borgos-Rodriguez, and Anne Marie Piper. 2020. Rethinking Power and Politics in Accessible Making. In *2020 ACM CHI Workshop on Investigating the Role of Critical Disability Studies in HCI.*

Maitraye Das. 2019. Who Can See What: Privacy and Audience Management for People with Vision Impairments on Social Media. In *the 2019 ACM CSCW Workshop on Addressing the Accessibility of Social Media.*

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: https://doi.org/10.1145/3267305.3277807

Maitraye Das. 2018. Towards Understanding the Effects of Social Networking on Postpartum Depression in Women. In *Grace Hopper Celebration of Women in Computing*, USA.

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.

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 observations, survey design, experiment design, prototyping

Students Mentored

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

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
ACM CHI 2021 **[*outstanding review x3]**
ACM CSCW 2020, 2019 **[*outstanding review]**
ACM DIS 2020
GHC Faculty Scholarship 2017
Australasian Database Conference 2016

Student Volunteer
ACM CSCW 2019
ACM CHI 2019
ACM UbiComp 2018
InfoSocial Graduate Conference at Northwestern University, 2018

Publicity Co-chair
InfoSocial Graduate Conference at Northwestern University, 2019

Outreach & Memberships

Member
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
BraveCamp Chicago, Brave Initiatives, Summer 2018

Vice-President
Murchhona:BUET (Cultural Club), 2014 – 2015