Maitraye Das

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maitraye.github.io

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]
- 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**
- Working on a project related to accessibility in remote work (details under NDA).

WESTERN WASHINGTON UNIVERSITY   Summer 2017
Researcher (remote) | mentored by **Moushumi Sharmin** & **Shameem Ahmed**
- Performed a systematic literature review on the design of smart technologies (wearable devices, smartphone, augmented and virtual reality, robots, etc.) for children with autism. [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

Best Paper Honorable Mention Award | ACM CHI   2020
Best Paper Honorable Mention Award | ACM CSCW   2019

Special Review Recognition for Outstanding Review | ACM CSCW	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, 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. Under review 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 [Doctoral Consortium]

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

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.* [Workshop Position Paper]

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 [Workshop Short Paper and Poster]

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

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. [Poster]

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.* [Poster]
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: Interview, Ethnographic field observations, Survey, Experiment design, Prototyping

Students Mentored

Thomas McHugh	Undergrad in Computer Science, Northwestern University	2020
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

Academic Services

Reviewer
ACM CHI 2021
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