

# Maitraye Das

maitraye@u.northwestern.edu  
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

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

- Working on a project related to accessibility and assistive technology (details under NDA).

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]

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

**Finalist** | Microsoft Research PhD Fellowship 2020  
**Best Paper Honorable Mention Award** | ACM CHI 2020  
**Best Paper Honorable Mention Award** | 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

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- 👤 **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)*.  
\* **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.  
\* **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.

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.

- 👤 **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 42<sup>nd</sup> IEEE International Conference on Computers, Software, and Applications (COMPSAC '18)*, pp. 645-654.  
\* **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, 16 pages.

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 20<sup>th</sup> IEEE International Conference on Computer and Information Technology (ICCIT '17)*, pp. 1-6.

## Workshops, Doctoral Consortium, and Posters

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**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)*. [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. [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

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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

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

**Methods:** Interview, Ethnographic field observations, Survey, Experiment design, Prototyping

## Students Mentored

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

## Invited Talks

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**Input and Interaction (INFO 463)** | Information School, University of Washington 2020  
▪ Guest lecture: Accessibility in Collaborative Writing for People with Vision Impairments (virtual)

**Bangladesh HCI and ICTD Study and Research Group**, Virtual Event 2020  
▪ Talk: Designing for Accessible Interaction

**Microsoft Research PhD Fellowship Finalist Presentation**, Redmond, WA 2019  
▪ Poster: Designing for Collaborative Content Creation for People with Vision Impairments

## Academic Service

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### Reviewer

ACM DIS 2020  
ACM CSCW 2020, 2019 [\*outstanding review]  
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**

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### **Member**

Northwestern Graduate Women in Computing, '19 - Present

Association for Computing Machinery (ACM), SIGCHI, SIGACCESS, '17 - Present

Bangladeshi Women in Computer Science and Engineering, '15 - Present

### **Code Coach Volunteer**

BraveCamp Chicago, Brave Initiatives, Summer '18

### **Vice-President**

Murchhona:BUET (Cultural Club), '14 – '15