Rayhan Rashed

Email: rayrash@umich.edu
Web: rayhan.io

RESEARCH INTERESTS

My research focuses on the design and ethical use of social computing systems to achieve pro-social, user-defined outcomes, integrating system development with mixed methods research. As I plan my next project, I am inspired by the question: *How can AI-powered civic technology be leveraged to empower and strengthen communities?*

EDUCATION

University of Michigan, Ann Arbor	2024 – 2029 (exp.)
PhD in CSE, Advisor: Farnaz Jahanbakhsh	
Bangladesh University of Engineering and Technology	2016 – 2021
MS & BS in CSE, GPA: **3.94/4**, Rank: **2/142**	

APPOINTMENT

Bangladesh University of Engineering and Technology	2021 – 2024
Lecturer, Department of Computer Science and Engineering	
Saudi Authority for Data and Artificial Intelligence (SDAIA)	2023 – 2024
Research Engineer, AI in Education Division	

PUBLICATIONS

C=Conference, W=Workshop/Short Paper

[C.3] **Pandemic, Repair, Resilience: Coping with Technology Breakdown during COVID-19** 📄 🎥
<u>R. Rashed</u>, M.R. Rifat, S.I. Ahmed
ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies [**COMPASS'21**]

[C.2] **DakterBari: Introducing Intermediary to Ensure Healthcare to Extremely Impoverished** 📄 🎥
<u>R. Rashed</u>*, M.A. Rahman*, S.A. Purabi, N. Ulfat, S. Chellappan, A.B.M.A. Islam
ACM SIGCHI Conference on Computer-Supported Cooperative Work and Social Computing [**CSCW'21**]

[C.1] **Exploring the Tensions between the Owners and Uber Drivers in Urban Bangladesh** 📄 🎥
S. Haque, <u>R. Rashed</u>, M.B. Morshed, N. Hassan, S.I. Ahmed
ACM SIGCHI Conference on Computer-Supported Cooperative Work and Social Computing [**CSCW'21**]

[W.2] **Healthcare Record Management and Unnoticeable Vulnerabilities for Refugees** 📄
F.T. Jaigirdar, C. Rudolph, <u>R. Rashed</u>, N. Uddin, C. Bain, A.B.M.A. Islam
ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies [**COMPASS'22**]

[W.1] **A System-level Analysis Between Head Movements and Corresponding Traits** 📄
S.A. Purabi, <u>R. Rashed</u>, M.M. Islam, M.N. Uddin, M. Naznin, and A.B.M.A. Islam
International Conference on Networking, Systems and Security (NSysS) [**NSysS'19**]

RESEARCH EXPERIENCE

Third Space Group, University of Toronto 2020 – 2022
Research Assistant with Prof. Ishtiaque Ahmed
• Led a project studying the informal repair, recycling, breakdown ecosystem in Bangladesh during COVID-19.
– Recruited participants, conducted semi-structured interviews, and analyzed the data using appropriate qualitative coding methods. Part of this work is accepted at **COMPASS 2021**[C.3]

• Led another project studying the adoption of Sharing Economy services (e.g., Uber) in the Global South.
– My responsibilities included questionnaire design, participant recruitment, interviews, data analysis. The paper has been accepted at **CSCW 2021**[C.1]

NeC Lab, Bangladesh University of Engineering and Technology 2019 – 2023
Research Assistant with Prof. A.B.M. Alim Al Islam
• Developed and deployed a healthcare info system for urban homeless communities, utilizing tech intermediaries.

– Conducted statistical analysis of system usage data, interviewed 70 homeless individuals, 71 infomediaries. The project's initial paper was accepted at **CSCW 2021**[C.2]

• Collaborated with ICT Division, Government of Bangladesh to study the digital divide, adoption & availability of the Internet in rural Bangladesh and the impact of migration.
– Designed and collected 5000+ responses from field surveys conducted in rural areas all over the country. Leading the quantitative analysis of survey data. Draft in preparation for **ACM IMC**.

AWARDS & ACHIEVEMENTS

❖ **Cheman Ara Scholar**: Academic Honor by Department of Computer Science, BUET.

❖ **University Scholarship for Academic Excellence and Deans' List** (**2016 − 2021**), BUET

❖ **Champion, National Science Olympiad, Bangladesh**: Arranged by Bangladesh Academy of Sciences

❖ **Award of Merit**: Highest Academic Honor by Notre Dame College, Dhaka, Bangladesh

❖ **Ninth Place**: Among 12,000+ candidates in BUET Entrance Exam [top 0.008%]

❖ **Earth Champion Fellow 2015**: Awarded by Bangladesh Youth Environmental Initiative

ACADEMIC SERVICE

Invited Review [♣ = Outstanding Review Recognition]

❖ **CHI** 2021, 2022, 2024[♣♣], 2025
❖ **CSCW** 2021[♣], 2024, 2025
❖ **JCSS/COMPASS** 2023, 2024

Student Volunteer

❖ **UIST** 2020, 2021
❖ **CSCW** 2020
❖ **COMPASS** 2021, 2023

TEACHING & LEADERSHIP EXPERIENCE

Lead Instructor 2021 -2023
Computer Networks [CSE 321/322], Operating Systems [CSE 313/314], BUET

Co-Organizer Workshop: Design Thinking in HCI June - August 2019
Instructor:Prof. Syed Ishtiaque Ahmed, Workshop series at CSE, BUET

Member, Knowledge, Policy, and Sustainability Team 2016 - 2019
Bangladesh Youth Environmental Initiative [BYEI]

CONSULTANCY

❖ Vulnerability Assessment & Penetration Testing of Sonali eSheba [iOS/Android/Web. Monthly users≈1 Million]
❖ Security and Functionality Assessment of Central College Admission System, Ministry of Education, Bangladesh.
❖ Backend System Development, Central Election, Institution of Engineers, Bangladesh. [Voters ≈ 210K]

SKILLS

User Research: Semi-structured interviews, Surveys, Field studies, Contextual inquiry.

Data Analysis: Quantitative and Statistical analysis (e.g., R, Python), Prototyping and development (e.g., Angular, Node.js, D3.js, Figma), Qualitative data analysis (e.g., coding, thematic analysis, affinity diagramming).

Security & Systems: Operating System (xv6), Reverse engineering (Ghidra, Hopper), Jailbreaking/Rooting, SSH, Penetration testing (SQLi, XSS, RFI, CSRF, DB vulnerability), Postman, GraphQL, Metasploit framework

Languages: Python, R, Java, C/C++, SQL, JavaScript, HTML/CSS

Libraries & Tools: PyTorch, TensorFlow, Scikit-learn, Git, Node.js