Sarah Tabassum

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Google Scholar

Research Interests

My research interests lie in the intersection of **usable privacy and security**, **human–computer interaction**, and **cross-cultural socio-technical design**. I study how people navigate scams, phishing, and communication tools, and how migration and cultural contexts shape privacy and security expectations. Building on my participatory design work exploring user-driven security features, I investigate how **AI systems can be designed with human oversight** to create security solutions that are trustworthy and culturally responsive. My work also **informs policy**, bridging empirical insights with design implications to address systemic gaps in digital privacy and security. At the core, my research asks: *How can we design privacy and security systems that remain trustworthy as people and technologies move across cultures, platforms, and borders?* By combining empirical studies, participatory design, and AI-supported methods, I aim to build **trustworthy**, **inclusive systems** that protect users across contexts and infrastructures.

Education

University of North Carolina at Charlotte
Doctor of Philosophy (PhD), NC, USA *2021– 2026*
Department of Software and Information Systems, College of Computing and Informatics
CGPA: 3.88 on a scale of 4.00
Expected Graduation Date: May 2026

Ahsanullah University of Science and Technology
Bachelor of Science (B.Sc.), Dhaka, Bangladesh *2014–2018*
Department of Computer Science and Engineering
CGPA: 3.905 on a scale of 4.00 (Merit Position: 1st)

Employments

- **Graduate Teaching Assistant, Course: Social Technology Design**
  University of North Carolina at Charlotte, NC, USA
  August 2024 - Present
- **Graduate Research Assistant**
  University of North Carolina at Charlotte, NC, USA
  January 2024 - July 2024
- **Instructor of Record, Course: Mobile Application Development (Android)**
  University of North Carolina at Charlotte, NC, USA
  August 2022 - December 2023
- **Graduate Teaching Assistant, Course: Mobile Application Development (Android)**
  University of North Carolina at Charlotte, NC, USA
  August 2021 - July 2022

- **Lecturer, Department of Computer Science and Engineering**
  Ahsanullah University of Science and Technology
  Dhaka, Bangladesh
  July 2019 - December 2020
  Conducted Courses: Elementary Structured Programming Language, Software Development Lab
- **Lecturer, Department of Computer Science and Engineering**
  Northern University Bangladesh, Dhaka, Bangladesh
  September 2018 - June 2019
  Conducted Courses: Software Engineering, Digital Logic Design, Data Structures, Software Development Lab with C

Publications & Submitted Work

- Sarah Tabassum, Nishka Mathew, and Cori Faklaris. **"Privacy on the Move: Understanding Educational Migrants' Social Media Practices through the Lens of Communication Privacy Management Theory."** In *Proceedings of the ACM Journal on Computing and Sustainable Societies* (*COMPASS 2025*), July 22-25, 2025, in Toronto, Canada (107 submissions; Impact Score: 1.60). Association of Computing Machinery, New York, NY, USA. [Paper Link]
  This paper investigates how educational migrants practice their privacy on social media in different stages of their immigration journey using CPM theory. Through semi-structured interviews with 40 international students, the study highlights the role of cultural norms, privacy concerns, and political restrictions in shaping platform choices.
- Narges Zare, Cori Faklaris, Sarah Tabassum, and Heather Richter Lipford.**"Improving Mobile Security with Visual Trust Indicators for Smishing Detection."** In *Proceedings of the IEEE 6th Annual World AI IoT Congress* (*AIIoT 2025*), May 28-30, in Seattle, WA, USA (Impact Score: 0.50). Institute of Electrical and Electronics Engineers, New York, NY, USA. [Paper Link]
  This paper investigates how visual trust indicators can help mobile phone users in detecting phishing SMS successfully.
- Sarah Tabassum, Cori Faklaris, and Heather Richter Lipford. **"What Drives SMiShing Susceptibility? A U.S. Interview Study of How and Why Mobile Phone Users Judge Text Messages to be Real or Fake."** In *Proceedings of the Twentieth Symposium on Usable Privacy and Security* (*SOUPS 2024*), Aug. 11-13, 2024, in Philadelphia, PA, USA (33 out of 156, 21.2% acceptance rate; Impact Score: 2.90). USENIX Association, Berkeley, CA. [Paper Link]
  An interview study on SMiShing among 29 mobile phone users in Charlotte, U.S., reveals prioritization of content, format, and links over sender details. Proposed design changes aim to enhance user resilience against SMiShing, providing valuable insights to combat cyber threats in this domain.
- Sarah Tabassum, and Faklaris, C. **"Understanding Privacy and Security Challenges of First-Generation Educational Migrants in the USA: A Proposal for Research"** In *Proceedings of the 9th Workshop on Inclusive Privacy and Security* (*WIPS 2024*), Aug. 9, 2024. USENIX Association, Berkeley, CA, USA. [Paper Link]
  In this proposal, we outline a study to investigate how first-generation educational migrants in the USA experience 'double presence' and 'double absence' in social media usage, focusing on the cross-cultural implications for their privacy and security.

- Elham Al Qahtani, Yousra Javed, Sarah Tabassum, and Mohamed Shehab**"What Would Motivate Users to Use Gmail's Confidential Mode?"** In *Hawaii International Conference on System Sciences* (*HICSS 2024*)
  This study investigates Gmail's Confidential Mode (GCM) and its usage motivations and user perceptions, specifically focusing on non-GCM users, finding that users are motivated to use GCM for sharing confidential documents and have misconceptions about its encryption capabilities.
- Elham Al Qahtani, Yousra Javed, Sarah Tabassum, Lipsa Sahoo, and Mohamed Shehab (2023). **"Managing Access to Confidential Documents: A Case Study of an Email Security Tool."** Future Internet, 15(11), 356. Published by MDPI on 2023/10/28
  This study explores user perceptions and behaviors related to the adoption and use of end-to-end encryption tools, focusing on managing access control for confidential emails.[Paper Link]
- Cori Faklaris, Sarah Tabassum, and Heather Richter Lipford(2025). **"Who Falls for SMiSh? Learning Through Survey Data Where to Best Target Awareness Training for Mobile Messaging Attacks"**
  (Under Review)
  This study investigates SMiShing (SMS-based phishing) vulnerabilities among U.S. adult mobile phone users. We employed descriptive and inferential statistics, including one-way ANOVAs, multistep linear and logistic regressions, and used IBM SPSS and Microsoft Excel to analyze data, assessing the impact of demographic factors on susceptibility and correctness in identifying fraudulent messages.

Research Experience

- **Cybersecurity Buddy: A Mobile-Based Intervention for On-Demand Privacy Advice** August 2024 – present
  This project aims to develop a proof-of-concept Android app that delivers real-time, authoritative cybersecurity guidance via a chatbot interface, powered by human experts and a fine-tuned LLM. This project is funded by Google.
- **Exploring the Digital Vulnerability of Educational Migrants in the USA** October 2023 - present
  This project examines how educational migrants utilize social media platforms to maintain social connections throughout their migration journey. It investigates how their privacy perceptions and practices evolve over time, the factors that make them vulnerable to cyberattacks, and potential strategies to enhance their digital security. - Designed and conducted a semi-structured interview study. Currently devising a plan for the next studies in this area.
- **Who Falls for SMiSh and Why? Analyzing U.S. Demographics' Susceptibility to SMS-based Mobile Messaging Attacks and Factors Influencing Them** January 2023 - May 2024
  The project seeks to identify the U.S. demographic groups most susceptible to SMiShing. Findings inform strategies for telecom providers to mitigate its impact. - Designed and executed a user study, including online surveys and interviews, analyzing demographic vulnerabilities to mobile phishing attacks. Performed statistical analyses to identify the factors that increase the vulnerability of populations to fall for SMiShing.

- **Unmasking MetaMask: A Comparative Analysis of Novice Users' Interaction** September 2022 - February 2024. Conducted experimental design and interviews to explore novice users' perceptions of usability, security, and privacy in crypto wallets during transactions.
- **Users' Management of Access Controls on Confidential Information:** December 2021 - February 2023
  Conducted an interview study, quantitative and qualitative data analysis to understand user perceptions of Virtru, a data privacy platform, in managing access control for confidential information sent via email.

Research & Community Mentorship

- **Undergraduate Research Mentoring:** Actively mentored students through the Research Experience for Undergraduates (REU) and OUR Summer Research Scholar Program at UNC Charlotte.
  - Spring 2025: Mentored **Nishka Mathew** and **Eesha Alla**.
  - Summer 2024: Mentored **Nishka Mathew** and **Jabou Jallow**.
  - Summer 2023: Mentored **Kaylei Goff**.
  - Summer 2022: Mentored **Bridget Falade**.
- **Lecturer Mentorship, Bangladesh (2018–2020):** Supervised undergraduate projects and guided students in Computer Science courses at Ahsanullah University of Science and Technology and Northern University Bangladesh.
- **ICT Mentor (2015):** Worked as a mentor and trainer in the *"Digital Literacy & Women Service Engineer"* program arranged by Microsoft Bangladesh Limited, Access To Information, and Young Bangla (Oct–Dec 2015).

Honors & Awards

- **Graduate School Summer Fellowship (GSSF) by UNCC, 2025** Awarded for research on digital vulnerabilities and cybersecurity solutions for educational migrants. (*Award amount: $8,000*)
- **GREPSEC VI Travel Grant** by USENIX Association & NSF, 2023 — Awarded travel funding to attend the workshop on inclusive privacy and security
- **Graduate Assistant Support Plan Award (GASP):** An award given to support doctoral students by the University of North Carolina at Charlotte (*2021 - 2026*)
- Position in **"Dean's Honor List"** (in 7 out of 8 semesters) during undergrad level at Ahsanullah University of Science and Technology (*2014 - 2018*)

Invited Talks & Guest Lectures

- **"Understanding and Mitigating SMiShing Vulnerability: Insights from U.S. Surveys and Interviews"** Guest Speaker, M3AAWG's 65th General Meeting, Charlotte, USA (to be held on October 14, 2025).
- **"What We Learned About 'Double Presence' in the Lives of Educational Migrants in the U.S.?: Social Media Experiences Across Borders"** was a talk for the 2025 Carolinas Migration Conference on January 31, 2025.

- **"Migration Journeys & Technology: Designing Social Solutions for the Challenges of Mobility"** Guest Lecture for Social Technology Design course at UNC Charlotte on November 20, 2024.
- **"What we learned about 'Who Falls for SMiSh?': U.S. Demographic Vulnerabilities to SMiShing"** was a seminar talk for the CyberDNA Lab at UNCC on October 26, 2023.

Professional Service & Leadership

- **External Reviewer** for British Computer Society's Special Interest Group in Human Computer Interaction Conference (BCS HCI 2025)
- **Student Volunteer** for Program Committee, USENIX Symposium on Usable Privacy and Security (SOUPS 2025)
- **Poster Jury** for USENIX Symposium on Usable Privacy and Security (SOUPS 2025)
- **External Reviewer** for ACM Conference on Human Factors in Computing Systems (CHI 25)
- **Paper Chair:** Co-organized the Workshop on Inclusive Privacy and Security (WIPS) at SOUPS 2024. Additionally, served as **paper chair** alongside Garrett Smith for the virtual workshop held on August 9, 2024.
- **Senator, Human-Centered Computing Research Group**, UNC Charlotte (Oct 2022 – Jul 2024)
- **Member**, Association for Computing Machinery (ACM), since 2023

Skills

- **Research Methods:** Surveys, Interviews, Experimental Design, User Studies, Participatory Design, Focus Groups, Usability Testing, Prototype Evaluation
- **Data Analysis:** Statistical Analysis (Descriptive, Inferential, Multivariate), Qualitative Coding (Thematic, Content), Mixed-Methods Integration, Survey Analysis, Data Visualization
- **Programming Languages:** Python, R, Java, C/C++, JavaScript, PHP, SQL/MySQL
- **Platforms & Tools:** IBM SPSS, RStudio, Jupyter Notebook, PyCharm, PyTorch, TensorFlow, Android Studio, Microsoft Visual Studio, Code Blocks, MATLAB, NVivo, Qualtrics, Figma, LaTeX
- **Soft Skills:** Teamwork, Interdisciplinary Collaboration, Cross-culture Collaboration, Analytical Problem-solving, Project Management, Presentation, Communication