Rudaiba Adnin

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Research Field

- Human-Computer Interaction (HCI)
- Accessible Computing
- Generative Artificial Intelligence (GenAI)

Research Interests

I am a Ph.D. Candidate at Khoury College of Computer Sciences, Northeastern University. My research focuses on the intersection of Human-Computer Interaction (HCI), Accessible Computing, and Generative Artificial Intelligence (GenAI). In my doctoral research, I am studying how sighted, blind, and low-vision individuals use and make sense of GenAI tools (e.g., ChatGPT, Google Gemini, Be My AI). My work has been published in top HCI venues, including CHI, CSCW, and ASSETS.

Education

- **Ph.D. in Computer Science** — *Boston, MA, USA*
  Khoury College of Computer Sciences, Northeastern University — Sept 2023 – May 2028 (expected)
  ◦ *Advisor: Prof. Maitraye Das*

- **M.S. in Computer Science** — *Boston, MA, USA*
  Khoury College of Computer Sciences, Northeastern University — Sept 2023 – Aug 2025
  ◦ *CGPA: 3.92/4.0, Advisor: Prof. Maitraye Das*

- **B.Sc. in Computer Science and Engineering** — *Dhaka, Bangladesh*
  Bangladesh University of Engineering and Technology (BUET) — Feb 2016 – Mar 2021
  ◦ *CGPA: 3.35/4.0, Advisor: Prof. Sadia Sharmin*

Professional Experience

- **Research Assistant** — *Boston, MA, USA*
  Technology, Equity, and Accessibility (TEA) Lab, Northeastern University — Mar 2023 – Present
  ◦ *Studying, designing, and developing learning tools for students with Prof. Maitraye Das (Advisor). Published two papers on the use of GenAI in CHI 2025 and ASSETS 2024; submitted a recent paper to TACCESS 2026.*

- **Research Assistant** — *Remote*
  Roux Institute at Northeastern — Summer 2025
  ◦ *Collaborated with Dr. Hari Prasath Palani (Mentor) on studying, prototyping, and evaluating two STEM learning tools for blind and low-vision students. Published two papers at OzCHI 2025 and BCS HCI 2025.*

- **Teaching Assistant** *Boston, MA, USA*
  Khoury College of Computer Sciences, Northeastern University
  - *CS 2484: Principles of Human-Computer Interaction* | Spring 2026
  - *CS 5340: Human-Computer Interaction* | Fall 2025
  - *CS 6350: Empirical Research Methods* | Spring 2025

- **Research Collaborator** *Dhaka, Bangladesh*
  Next-generation Computing (NeC) Group, BUET Aug 2020 – Aug 2023
  - *Collaborated with Prof. A.B.M. Alim Al Islam (BUET), Prof. Sriram Chellappan (USF), Prof. Sadia Sharmin (BUET), Prof. Anindya Iqbal (BUET), and Prof. Rezwana Reaz (BUET) on several research projects.*

- **Database Engineer** *Dhaka, Bangladesh*
  Therap BD Ltd. Mar 2021 – Jul 2023
  - *Developed and optimized SQL queries; conducted R&D on Oracle Cloud, GoldenGate, SQLTxplain, and DBSAT; maintained Oracle RAC databases; automated DBA workflows using Shell scripting, Python, and Java; and trained junior engineers on database modules and related tools.*

Peer-reviewed Publications

Use of Generative AI

[P14] Rudaiba Adnin, Atharva Pandkar, Bingsheng Yao, Dakuo Wang, and Maitraye Das. 2025. Examining Student and Teacher Perspectives on Undisclosed Use of Generative AI in Academic Work. *In Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI '25) (Acceptance rate: 25.1%)* | DOI | PDF

[P13] Rudaiba Adnin and Maitraye Das. 2024. "I look at it as the king of knowledge": How Blind People Use and Understand Generative AI Tools. *In Proceedings of the 26th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '24) (Acceptance rate: 30%)* | DOI | PDF

[P12] Hari Prasath Palani, Rudaiba Adnin, and Shivangee Nagar. 2025. Kanak: Automating the Generation of Accessible STEM Materials for Blind and Low-vision Students. *In Proceedings of the 37th Australian Conference on Human-Computer Interaction (OzCHI '25)* | DOI | PDF

[P11] Hari Palani and Rudaiba Adnin. 2025. StemA11y: An AI-Driven Mobile System for Non-Visual and Multisensory Access to STEM Content. *In Proceedings of the 38th International BCS Human-Computer Interaction Conference (BCS HCI '25)*. BCS Learning & Development Ltd, Swindon, GBR, 496–507. | DOI | PDF

Non-profit Organizations

[P10] Rudaiba Adnin, Ishita Haque, Sadia Afroz, Alvi Md. Ishmam, Sakil Sarkar, Md. Kafi Khan, Afsana Mimi, Sriram Chellappan, and A. B. M. Alim Al Islam. 2023. Focusing on the Unfocused: Corresponding Perspectives on Connectivity among Small-scale Non-profit Organizations Working for Street Children in Bangladesh and Their Donors. *In Proceedings of the 7th ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies (COMPASS '24)* | DOI | PDF

[P9] Rudaiba Adnin, Ishita Haque, Sadia Afroz, Alvi Md. Ishmam, and A. B. M. Alim Al Islam. 2022. Investigating Human Factors in Willingness to Donate to the Small-scale Non-profit Organizations in Bangladesh. *In Companion Publication of the 2022 Conference on Computer Supported Cooperative Work and Social Computing (CSCW '22 Companion)* | DOI | PDF

Online Learning

[P8] Rudaiba Adnin, Sadia Afroz, and Sadia Sharmin. 2022. Note: Learn Online: High School Students' Adoption of Online Learning in Bangladesh during COVID-19 Pandemic. *In Proceedings of the 5th ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies (COMPASS '22)* | DOI | PDF

[P7] Rudaiba Adnin, Sadia Afroz, Montaser Majid Taseen, and Sadia Sharmin. 2022. Students' Adoption of Online Platforms for Learning Purposes in Bangladesh. In: Stephanidis, C., Antona, M., Ntoa, S. (eds) *HCI International 2022 Posters. HCII 2022. Communications in Computer and Information Science, vol 1582.* Springer, Cham. | DOI | PDF

AI Chatbot

[P6] Md Ehtesham-Ul-Haque, Jacob D'Rozario, Rudaiba Adnin, Farhan Tanvir Utshaw, Fabiha Tasneem, Israt Jahan Shefa, and A. B. M. Alim Al Islam. EmoBot: Artificial emotion generation through an emotional chatbot during general-purpose conversations. *Cognitive Systems Research* | DOI | PDF

Software Startups

[P5] Rudaiba Adnin, Sadia Afroz, Muhtasim Ulfat, and Anindya Iqbal. 2022. A Hiring Story: Experiences of Employers in Hiring CS Graduates in Software Startups. *In Companion Publication of the 2022 Conference on Computer Supported Cooperative Work and Social Computing (CSCW '22 Companion)* | DOI | PDF

Online Content Moderation

[P4] 🏆 Ishita Haque, Rudaiba Adnin, Sadia Afroz, Faria Huq, Sazan Mahbub, Sami Azam, and A. B. M. Alim Al Islam. 2022. Citadel: An Automated Abuse Detection System to Detect And Prevent Abusive Behaviors over Emails. *In Proceedings of the 9th International Conference on Networking, Systems and Security (NSysS '22) (Acceptance rate: 27%)* | DOI | PDF | *Runner-up Paper Award*

[P3] Ishita Haque, Rudaiba Adnin, Sadia Afroz, Faria Huq, Sazan Mahbub, and A. B. M. Alim Al Islam. 2021. "A Tale on Abuse and Its Detection over Online Platforms, Especially over Emails": From the Context of Bangladesh. *In Proceedings of the 8th International Conference on Networking, Systems and Security (NSysS '21) (Acceptance rate: 16.67%)* | DOI | PDF | *Best Paper Award*

[P2] Gazi Abdur Rakib, Rudaiba Adnin, Shekh Ahammed Adnan Bashir, Chashi Mahiul Islam, Abir Mohammad Turza, and A. B. M. Alim Al Islam. 2022. InnerEye: A Tale on Images Filtered using Instagram Filters – How Do We Interact with Them and How Can We Automatically Identify the Extent of Filtering? *In Proceedings of the 19th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MobiQuitous '22).* | DOI | PDF

Disease Outbreaks

[P1] S Mahmudul Hasan, Alabi Mehzabin Anisha, Rudaiba Adnin, Ishrat Jahan Eliza, Ishika Tarin, Sadia Afroz, and A. B. M. Alim Al Islam. 2022. Revealing Influences of Socioeconomic Factors over Disease Outbreaks. *In Proceedings of the 5th ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies (COMPASS '22)* | DOI | PDF

Services

- **Reviewer** at CHI 2026, CHI 2025, CHI 2024, CSCW 2026, CSCW 2025, CSCW 2023, CSCW 2022, OzCHI 2025, ACM COMPASS 2025, ACM COMPASS 2024, ACM COMPASS 2023
- **Student Volunteer** at ASSETS 2024, ACM COMPASS 2023
- **ACM Student Member**

Presentations

- **CHI 2025 talk** on paper "Undisclosed GenAI Use"
- **ASSETS 2024 talk** on paper "How Blind People Use and Understand GenAI Tools"
- **ACM COMPASS 2023 talk** on paper "Connectivity of Non-profit Organizations and Donors"

Supervision & Mentorship

- Atharva Pandkar | MS student, CS, Northeastern — *Dec 2023–Dec 2024*
  Research: Undisclosed GenAI Use
- Abdus Samee | MS student, CS, BUET — *June 2025–Present*
  Research: GenAI-powered Accessible Learning Tools

Awards & Scholarships (Selected)

- Khoury Distinguished Fellowship *2023*
  Northeastern University
- Runner-up Paper Award *2022*
  International Conference on Networking, Systems and Security (NSysS '22)
- Registration Waiver Grant *2022*
  ACM COMPASS 2022
- Best Paper Award *2021*
  International Conference on Networking, Systems and Security (NSysS '21)
- University Merit Scholarship (Level 4) *2020*
  Bangladesh University of Engineering and Technology (BUET)
- BUET Admission Test Scholarship *2016*
  Bangladesh University of Engineering and Technology (BUET)

Selected Research Projects

- **Use of GenAI:** I examined college students' use and non-disclosure of GenAI tools in academic work. I discovered the strategies students adopt to conceal their use of GenAI and the ways instructors navigate and respond to these situations by drawing on the cognitive dissonance theory. In addition, I investigated how blind individuals engage with GenAI tools and found that participants often formed creative but imperfect mental models (e.g., assuming ChatGPT has a database) to make sense of how these tools work.
- **GenAI-Powered Accessible Educational Tools:** I designed and developed two GenAI-Powered STEM learning tools, Kanak and StemA11y, which generate accessible learning materials (e.g., mathematical expressions) for blind and low-vision students. I used ReactJS (frontend) and NodeJS (backend). Through these tools, I examined how GenAI-Powered tools are able to support traditional transcribing workflows of accessibility practitioners (e.g., braille transcribers) by providing context-aware formatting, proofreading support, and on-demand graphics generation.
- **Online Learning:** I examined students' online learning experiences and uncovered how students often relied on multiple online platforms, which led to information overload and delays in locating suitable learning resources. Based on these insights, I identified design features to help students efficiently locate relevant learning content across multiple online platforms. I implemented these design features in a Chrome extension using Django, HTML, and JavaScript.

Technical Skills

- **User Research:** Semi-structured interviews, Surveys, Field studies
- **Analysis:** Reflexive Thematic Analysis, Significance Tests, Correlation, Regression
- **Languages:** Python, PHP, C++, JavaScript, SQL, Bash, Java
- **Prototyping:** Figma, Javascript, HTML, CSS

- **Frameworks:** ReactJS, Flask, NodeJs, Django, Pandas, NLTK, Numpy, Scikit-Learn, Plotly
- **Tools:** GPT APIs, Git, Oracle, MySQL, SQLite, Docker, Wireshark, MATLAB, Logisim, Inkscape
- **Platforms:** Linux, Windows
- **Other Skills:** Leadership, Communication, Time Management, Detail Oriented

Portfolio of Technology Design Work

- **LessonA11y:** Accessible lesson planning tool for blind teachers with human-AI collaborative content creation features | Case study | Video demo | github
- **Kanak:** Visual-to-accessible STEM educational material generation with human-in-the-loop proofreading features | Case study | DOI | PDF
- **Citadel:** Chrome extension for automated content moderation with human-in-the-loop privacy features | Case study | DOI | PDF

References

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  Assistant Teaching Professor, Northeastern University
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- **Hari Prasath Palani** *Portland, ME, USA*
  Research Scientist at Roux Institute
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- **Sriram Chellappan** *Tampa, FL, USA*
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