Md Mojibur Rahman Redoy Akanda

L.F. Peterson Building, Room 230, 435 Naggle St., Texas A&M University, College Station, TX 77843
+1 (979) 739-5704 redoy.akanda@tamu.edu Personal Webpage LinkedIn Google Scholar

EDUCATION

Doctor of Philosophy in Computer Science **Spring 2022–Current**
Advisor: Dr. Nitesh Saxena
Texas A&M University, College Station, TX

Bachelor of Science in Computer Science and Engineering **2015–2018**
Thesis: Eye-Line: A voice controlled assistant for blind peoples
Daffodil International University, Dhaka, Bangladesh

RESEARCH INTERESTS

Emerging Systems Security, User-Centered and HCI Security, Accessibility-Triggered Security, Security of AR/VR Systems

PUBLICATIONS

Five A* Conference Papers (3 ACM CCS, 1 USENIX, 1 WWW) || Distinguished Paper Award at ACM CCS 2025

Conference Papers

C6. [**CCS 2025**] Tianfang Zhang, Qiufan Ji, **Md Mojibur Rahman Redoy Akanda**, Zhengkun Ye, Ahmed Tanvir Mahdad, Cong Shi, Yan Wang, Nitesh Saxena, and Yingying Chen. "*Harnessing Vital Sign Vibration Harmonics for Effortless and Inbuilt XR User Authentication*," In Proceedings of the 2025 ACM SIGSAC Conference on Computer and Communications Security (CCS) [Acceptance Rate: 13.9%]. [Received Distinguished Paper Award]

C5. [**USENIX Security 2025**] **Md Mojibur Rahman Redoy Akanda**, Amanda Lacy, Nitesh Saxena, "*SoK: Inaccessible & Insecure: An Exposition of Authentication Challenges Faced by Blind and Visually Impaired Users in State-of-the-Art Academic Proposals*," The 34th USENIX Security Symposium (USENIX Security) [Acceptance Rate: 17.1%].

C4. [**WWW 2025**] **Md Mojibur Rahman Redoy Akanda**, Ahmed Tanvir Mahdad, Nitesh Saxena, "*Broken Access: On the Challenges of Screen Reader Assisted Two-Factor and Passwordless Authentication*," In Proceedings of the 2025 ACM Web Conference (WWW) [Acceptance Rate: 19.8%].

C3. [**CCS 2024**] Tianfang Zhang, Qiufan Ji, Zhengkun Ye, **Md Mojibur Rahman Redoy Akanda**, Ahmed Tanvir Mahdad, Cong Shi, Yan Wang, Nitesh Saxena, and Yingying Chen. "*SAFARI: Speech-Associated Facial Authentication for AR/VR Settings via Robust Vibration Signatures*," In Proceedings of the 2024 ACM SIGSAC Conference on Computer and Communications Security (CCS) [Acceptance Rate: 16.9%].

C2. [**CCS 2023**] Tianfang Zhang, Zhengkun Ye, Ahmed Tanvir Mahdad, **Md Mojibur Rahman Redoy Akanda**, Cong Shi, Yan Wang, Nitesh Saxena, and Yingying Chen, "*FaceReader: Unobtrusively Mining Vital Signs and Vital Sign Embedded Sensitive Info via AR/VR Motion Sensors*," In 2023 ACM SIGSAC Conference on Computer and Communications Security (CCS) [Acceptance Rate: 19.87%].

C1. [**ICAECT 2019**] **Md Mojibur Rahman Redoy Akanda**, Mohammad Masum Khandaker, Tushar Saha, Jahidul Haque, Anup Majumder, and Aniruddha Rakshit, "*Voice-Controlled Smart Assistant and Real-Time Vehicle Detection for Blind People*," In Advances in Electrical and Computer Technologies: Select Proceedings of ICAECT 2019 (ICAECT).

Journal Publications

J3. [**Wiley ITEES**] Prateem Pan, Rajib Kumar Mandal, **Md Mojibur Rahman Redoy Akanda**, "*Fault Classification with Convolutional Neural Networks for Microgrid Systems*," In International Transactions on Electrical Energy Systems, vol. 2022, no. 1, 2022, p. 8431450.

J2. [**IJESTY**] **Md Mojibur Rahman Redoy Akanda**, Md Alamgir Hossain, "*Smart-Devices in Human Behavior Manipulation: Process Diagram with Exploratory Assessment*," In International Journal of Engineering, Science and Information Technology (IJESTY), vol. 1, issue 3, 2021.

J1. [**IJESTY**] Sworna Akter, Md Alamgir Hossain, **Md Mojibur Rahman Redoy Akanda**, "*A Noble Security Analysis of Various Distributed Systems*," In International Journal of Engineering, Science and Information Technology (IJESTY), vol. 1, issue 2, 2021.

Book Chapter

B1. [**CRC Press**] Khairul Islam, Zahidul Islam, Al Amin, **Md Mojibur Rahman Redoy Akanda**, Shabuj Hossen, Feroza Naznin, and Mohammad Ali Moni, "*IoT and Deep Learning-Based Smart Healthcare with an Integrated Security System to Detect Various Skin Lesions*," In Artificial Intelligence for Disease Diagnosis and Prognosis in Smart Healthcare, CRC Press, 2023.

Poster Publications

P1. [**MobiHoc 2023**] Tianfang Zhang, Zhengkun Ye, Ahmed Tanvir Mahdad, **Md Mojibur Rahman Redoy Akanda**, Cong Shi, Yan Wang, Nitesh Saxena, and Yingying Chen, "*Poster: Unobtrusively Mining Vital Sign and Embedded Sensitive Info via AR/VR Motion Sensors*," In Proceedings of the 24th International Symposium on Theory, Algorithmic Foundations, and Protocol Design for Mobile Networks and Mobile Computing, pp. 308-309, 2023.

RESEARCH EXPERIENCE

Graduate Assistant - Research, Department of Computer Science and Engineering **Jan. 2022 – Present**
Texas A&M University, College Station, Texas

Accessibility-Triggered Security Vulnerabilities in Emerging Systems

- Analyzed academic research papers on authentication methods tailored for blind and visually impaired users, identifying critical vulnerabilities and highlighting gaps where researchers have overlooked the specific needs and behaviors of these users.
- Conducted analysis for the vulnerability and accessibility of real-life 2FA and MFA methods, focusing on visually impaired users.
- Executed diverse attacks in authentication scenarios involving visually impaired users, such as concurrency and fatigue attacks against push-2FA, real-time phishing attacks targeting OTP-based methods, and cross-service and downgrading attacks on FIDO-MFA to investigate vulnerabilities.
- Developed lightweight malware that bypasses modern authentication methods (e.g., passkeys) by exploiting inaccessibility.
- Developed a framework consisting of 4 metrics with automated and manual evaluation methods to investigate cookie banner inaccessibility and associated security risks.

Security of AR/VR Devices

- Developed **FaceReader**, a method to unobtrusively reconstruct vital signs from AR/VR device motion sensors.
- Demonstrated the application of FaceReader in advanced attacks, including Body Fat Ratio Estimation, User Re-identification, and Gender Recognition.
- Designed **SAFARI**, an acoustic spoofing and mimicking-resistant voice authentication system using viseme-based facial biometrics derived from AR/VR motion sensors during voice commands.
- Proposed a seamless authentication in XR devices using natural vital sign-induced vibrations like heartbeat and breathing patterns, captured by motion sensors.

Lecturer, Department of Computer Science and Engineering **Sept. 2019 – Dec. 2021**
Prime University, Dhaka, Bangladesh

IoT and Deep Learning-Based Secure Smart Healthcare

- Developed an IoT and deep learning-based smart healthcare system for accurate detection of skin lesions, enhancing early diagnosis and real-time patient monitoring.
- Integrated strong security measures to protect sensitive health data within the IoT framework, ensuring secure data transmission and storage.

Smart Devices in Human Behavior Manipulation

- Conducted a systematic analysis to identify different methods used by smart devices to collect user data and influence human behavior and explored how vendors and third-party entities utilize collected data for targeted marketing and behavior manipulation.
- Performed an exploratory user study to assess awareness of data collection and behavior manipulation by smart devices. The survey results reveal the significant impact of smart devices on user behavior and highlight a general lack of understanding regarding data privacy and potential data leakage risks.

Secured GSM-Based Smart Home Systems

- Developed a GSM-based smart home system with multilayered security.
- Implemented multiple layers of security using Arduino, employing logic-based approaches to prevent unauthorized access.

B.Sc. Student, Department of Computer Science and Engineering **Sept. 2016 – Aug. 2019**
Daffodil International University, Dhaka, Bangladesh

Network-Based Intrusion Prevention System Inspired By Apoptosis

- Developed a novel model for a network-based intrusion prevention system inspired by the biological process of apoptosis.
- Trained machine learning models for real-time intrusion detection.
- Conducted attack generation and analysis on the system using packet sniffing techniques.

Smart Assistant with Vehicle Detection for Blind People

- Developed a voice-controlled smart assistant (Android application) tailored for blind and visually impaired users.
- Designed and implemented a real-time accessible vehicle detection algorithm within the app to enable independent travel for visually impaired users.

TEACHING EXPERIENCE

Graduate Assistant - Teaching, Department of Computer Science and Engineering **Spring 2025, Fall 2025, Spring 2026**
Texas A&M University, College Station, Texas

- Supported course instruction by assisting with lectures, managing lab sessions, and facilitating student engagement.
- Evaluated assignments and exams, and conducted regular office hours to clarify core concepts, troubleshoot technical issues, and provide individualized academic support.
- Contributed to maintaining accessible and inclusive course delivery by reviewing instructional materials for accessibility barriers and assisting with necessary improvements.
- *Course Assisted:* Network Security.

Course Designer, Department of Computer Science and Engineering **Fall 2024**
Texas A&M University, College Station, Texas

- Designed and organized course materials, including slides, assignments, and assessments, to align with course learning objectives.
- Developed hands-on lab exercises and project components to reinforce core concepts in network and systems security.
- Ensured course content followed accessibility and inclusive design principles by reviewing materials for screen reader compatibility.
- *Course Assisted with Design:* Network Security.

Lecturer, Department of Computer Science and Engineering **Sept. 2019 – Dec. 2021**
Prime University, Dhaka, Bangladesh

- Designed and delivered lectures, tutorials, and curriculum, while creating and assessing assignments, tests, and exams to maintain high academic standards.
- Conducted and supervised research, including publishing articles and supervising final-year undergrad students' thesis and projects.
- Represented the department in various academic committees and events.
- *Courses Instructed:* Cryptography & Network Security, Computer Networking, Design and Analysis of Algorithms, Data Mining.

Student Prefect (TA), Department of Computer Science and Engineering **Sept. 2017 – Aug. 2018**
Daffodil International University, Dhaka, Bangladesh

- Assisted in conducting lab classes, providing hands-on guidance to students by addressing coding challenges, debugging errors, and ensuring a practical understanding of programming concepts.
- Conducted supplementary lectures to clarify complex topics, ensuring that students had a deeper and more comprehensive grasp of course materials.
- Administered lab tests, evaluated student performance, and provided constructive feedback to support their learning and skill development.
- *Courses Assisted:* Computer Graphics Lab, Data Structure and Algorithm Lab.

SERVICE

Program Committee (PC)

[1] The Nineteenth International Conference on Emerging Security Information, Systems and Technologies (**SECURWARE**) **2025**

Reviewer

[2] The Web Conference (formerly known as the International World Wide Web Conference (**WWW**)) **2025, 2026**

[1] Journal of Future Artificial Intelligence and Technologies (**FAITH**) **2024 - Present**

Sub-reviewer

[1] Annual Computer Security Applications Conference (ACSAC) **2024, 2025**

Judge

[1] HowdyHack by TAMUhack, Texas A&M University **2023**

Administrative and Departmental Service

[3] **Member**, LaTeX Accessibility Working Group (LAWG), Graduate and Professional School **Dec. 2025 – Current**
(One of seven members of a university-wide specialized interdisciplinary team comprising 4 faculty and 3 graduate students)
Texas A&M University, College Station, TX

[2] **President**, Computer Science & Engineering Graduate Student Association (CSEGSA) **Sept. 2023 – Aug. 2025**
Texas A&M University, College Station, TX

[1] **Faculty Advisor**, Computer Programming Club **Sept. 2019 – Dec. 2021**
Prime University, Dhaka, Bangladesh

STUDENT SUPERVISING/ MENTORING

[13] **Agrima Gupta** [Undergrad Researcher at SPIES Lab] — **Spring, 2026 - Current**
Texas A&M University, College Station, Texas

[12] **Saharab Rashidi George** [B.Sc. in CSE Final Year Thesis] — **Summer, 2021 - Fall, 2021**
Prime University, Dhaka, Bangladesh

[11] **Md. Shahinur Rahman** [B.Sc. in CSE Final Year Thesis] — **Summer, 2021 - Fall, 2021**
Prime University, Dhaka, Bangladesh

[10] **Md. Abu Saleh** [B.Sc. in CSE Final Year Thesis] — **Summer, 2021 - Fall, 2021**
Prime University, Dhaka, Bangladesh

[9] **Jahidul Islam** [B.Sc. in CSE Final Year Thesis] — **Summer, 2021 - Fall, 2021**
Prime University, Dhaka, Bangladesh

[8] **Ahmed Alamin** [B.Sc. in CSE Student, Independent Research] — **Spring, 2020 - Fall, 2021**
Prime University, Dhaka, Bangladesh

[7] **Md Khairul Islam** [B.Sc. in ICE Student, Independent Research] — **Spring, 2020 - Fall, 2021**
Islamic University, Dhaka, Bangladesh

[6] **Shabuj Hossen** [B.Sc. in EEE Student, Independent Research] — **Spring, 2020 - Fall, 2021**
Prime University, Dhaka, Bangladesh

[5] **Alvi Rahman** [B.Sc. in CSE Final Year Thesis] — **Fall, 2020 - Spring, 2021**
Prime University, Dhaka, Bangladesh

[4] **Farhana Jabin Ritu** [B.Sc. in CSE Final Year Thesis] — **Fall, 2020 - Spring, 2021**
Prime University, Dhaka, Bangladesh

[3] **Anish Basak** [B.Sc. in CSE Final Year Thesis] — **Fall, 2019 - Spring, 2020**
Prime University, Dhaka, Bangladesh

[2] **Sabrina Akter** [B.Sc. in CSE Final Year Thesis] — **Fall, 2019 - Spring, 2020**
Prime University, Dhaka, Bangladesh

[1] **Ahammad Ali** [B.Sc. in CSE Final Year Thesis] — **Fall, 2019 - Spring, 2020**
Prime University, Dhaka, Bangladesh

INVITED TALKS/ PRESENTATIONS

[5] Invited talk titled "Can Everyone Really Use It? Accessibility Challenges in Digital Systems", AFF Micro-teaching Seminar, Texas A&M University, College Station, TX — **2025**

[4] Invited talk titled "SoK Papers: Purpose, Expectations, and Impact", Texas A&M University, College Station, TX — **2025**

[3] Presented our paper at the 34th USENIX Security Symposium (**USENIX Security**), Seattle, Washington — **2025**

[2] Presented our paper at The Web Conference (**WWW**), Sydney, Australia — **2025**

[1] Presented our paper at the International Conference on Advances in Electrical and Computer Technologies, India — **2019**

AWARDS AND HONORS

[9] **Distinguished Paper Award** — **2025**
ACM Conference on Computer and Communication Security (CCS)

[8] **LaTeX Accessibility Working Group (LAWG) Scholarship** — **2025**
Graduate and Professional School, Texas A&M University, College Station, TX

[7] **Travel Grant Award for USENIX Security '25** — **2025**
USENIX Association, Berkeley, CA

[6] **Travel Grant Award for The Web Conference 2025 (WWW2025)** — **2025**
Texas A&M University, College Station, TX

[5] **Graduate Leadership Excellence Award** — **2024**
Texas A&M University, College Station, TX

[4] **Oneway Travel Support for Higher Education in the USA** — **2023**
Bangladesh Sweden Trust Fund

[3] **Vice Chancellor's List** — **2015-2018**
Daffodil International University, Dhaka, Bangladesh

[2] **University Merit Scholarship** — **2015-2018**
Daffodil International University, Dhaka, Bangladesh

[1] **1st Runners-up, STEP Skills Competition** — **2014**
Narsingdi Polytechnic Institute, Narsingdi, Bangladesh

TRAINING, WORKSHOPS, AND CERTIFICATIONS

[11] Jr Penetration Tester — **Ongoing**
TryHackMe

[10] The Academy for Future Faculty — **Apr. 2025**
Funded by NSF, Center for Teaching Excellence (CTE), Texas A&M University, College Station, TX

[9] Introduction to Cyber Security — **Sept. 2023**
TryHackMe

[8] Workshop on Outcome-Based Education (OBE) for University Teachers — **Nov. 2021**
University Grants Commission (UGC), Dhaka, Bangladesh

[7] MikroTik Certified Routing Engineer — **Feb. 2019**
MikroTik

[6] MikroTik Certified Network Associate — **Dec. 2018**
MikroTik

[5] Workshop on Android Apps Development — **Dec. 2015**
DIUCPC, Daffodil International University, Dhaka, Bangladesh

[4] 2nd Youth Parliament on Right to Food — **Oct. 2015**
Youth Against Hunger, Dhaka, Bangladesh

[3] Workshop on Journey for a Beautiful Life — **Aug. 2015**
Daffodil International University, Dhaka, Bangladesh

[2] Internship on Programmable Logic Control — **Sept.-Nov. 2014**
Habib Technical Training Center, Narsingdi, Bangladesh

[1] National Mobile Application Development Awareness & Capacity Building Program — **Mar. 2014**
Ministry of ICT, Bangladesh

MEMBERSHIP AND LEADERSHIP EXPERIENCE

[6] Professional Membership, Association for Computing Machinery (ACM) [Member No.: 2704394] — **Jan. 2024 – Present**

[5] General Secretary, Bangladesh Student Association (BSA) — **May 2023 – April 2024**
Texas A&M University, College Station, TX

[4] Member, Texas A&M Cybersecurity Club — **Aug. 2023 – Present**
Texas A&M University, College Station, TX

[3] Member, Cyber Crime Awareness Foundation — **Sept. 2018 – Present**
Dhaka, Bangladesh

[2] Member, Internet Society Bangladesh Dhaka Chapter — **Jan. 2018 – Present**
Dhaka, Bangladesh

[1] Class Representative, Department of Computer Science and Engineering — **Jan. 2016 – Oct. 2018**
Daffodil International University, Dhaka, Bangladesh