

Md Farhad Hossain

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🌐 LinkedIn 🐙 GitHub 🎓 Google Scholar 📄 ResearchGate 🌐 Website

EDUCATION

Pennsylvania State University

PhD Student, Informatics

Research Focus: Usable Security and Privacy for LLM and Agentic systems, Human-Centered AI Safety

University Park, PA

Aug 2025 - Present

Institute of Information Technology, Jahangirnagar University

Bachelor of Science in Information Technology

Dhaka, Bangladesh

Mar 2017 - May 2022

RESEARCH EXPERIENCE

Graduate Research Assistant [🔗](#)

College of Information Sciences and Technology

Advisor: Dr. Anna Squicciarini

University Park, PA

June 2026 - July 2026

- **Third-Party Relational Leakage in LLM-Mediated Text Rewriting:** Conducting initial research exploration and pipeline design; running pilot experiments and analyzing results to inform the design of an evaluation benchmark.
- **Modeling Metadata Release Under Differential Privacy:** Contributing on the machine learning experimentation side, investigating how ML techniques can improve the release pipeline.

Graduate Research Assistant at Governance, Privacy and Security Research Lab [🔗](#)

College of Information Sciences and Technology

Advisor: Dr. Tanusree Sharma

University Park, PA

Aug 2025 - May 2026

- **Personhood Credentials and Zero Knowledge Proof based Age Verification for LLM Applications:** Worked on the initial research question formulation, user study design and pilot experiments for usability.
- **Systematization of Knowledge (SoK) on Deepfake Audio:** Conducting comprehensive literature review of deepfake voice detection methods, vulnerabilities, and mitigation strategies to identify research gaps.
- **Explainability of Personhood Credentials (World ID App):** Conducted multi-phase user research to identify explainability barriers in onboarding and verification steps. Designed and developed iOS application with explainability features on ZKP concepts and interactive educational modules. Demos: Baseline [🔗](#), Explainable [🔗](#)
- **Voice Actor Data Rights and AI Governance:** Developed a contract analysis platform for voice actors to understand AI data usage rights. Led UI/UX design and full-stack implementation. Demo: [🔗](#)

PUBLICATIONS

- **Toward machine learning-based psychological assessment of autism spectrum disorders in school and community.** Sabbir Ahmed, Md Farhad Hossain, Silvia Binte Nur, M Shamim Kaiser, Mufti Mahmud. In: Proceedings of Trends in Electronics and Health Informatics: TEHI 2021, Pages 139-149, [🔗](#)
- **Convid-net: an enhanced convolutional neural network framework for covid-19 detection from x-ray images.** Sabbir Ahmed, Md Farhad Hossain, Manan Binth Taj Noor. In: Proceedings of International Conference on Trends in Computational and Cognitive Engineering: Proceedings of TCCE 2020. Pages 671-681. [🔗](#)
- **Artificial intelligence and machine learning for ensuring security in smart cities.** Sabbir Ahmed, Md Farhad Hossain, M Shamim Kaiser, Manan Binth Taj Noor, Mufti Mahmud, Chinmay Chakraborty. In: Data-Driven Mining, Learning and Analytics for Secured Smart Cities: Trends and Advances 2021. Pages 23-47 [🔗](#)
- **Computational intelligence in detection and support of autism spectrum disorder.** Sabbir Ahmed, Silvia Binte Nur, Md Farhad Hossain, M Shamim Kaiser, Mufti Mahmud, Tianhua Chen. In: Artificial Intelligence in Healthcare: Recent Applications and Developments 2022. Pages 179-197 [🔗](#)

HONORS & AWARDS

Graham Endowment for Academic Excellence, Penn State IST, \$3000

2025

EXPERIENCE

Software Engineer, Cefalo AS [🔗](#) — Kotlin, Java, Spring boot, Angular, React

Dhaka, Bangladesh

Mar 2022 - June 2025

- Designed and implemented **REST APIs**, resulting in a **17%** increase in overall performance.
- Optimized server response time by **15%** by restructuring API and optimizing database queries using **MongoDB** and **PostgreSQL**.
- Increased user engagement by **21%** by improving usability and accessibility for non-technical users using React's **PrimeReact** library and Angular's **Material UI** and **PrimeNG**, aligning with key HCI principles.
- Integrated **Elasticsearch** to efficiently retrieve **millions** of records, using DSL queries for nested rules. Contributed to a custom **query builder** for complex Elasticsearch queries.
- Collaborate with **European stakeholders** in an **agile development** environment to develop software solutions, review code, fix bugs and contribute to documentation efforts.

AI Prompt Tester, Scale AI [🔗](#) — Angular, Python, C++ , Typescript, HTML, CSS

Remote (Part time)

July 2023 - Jan 2024

- Developed solutions for coding problems, ensuring code correctness and efficiency.
- Created comprehensive test cases to validate the functionality of the implemented solutions.
- Prepared problem summaries to provide context and clarity for the development team.
- Crafted detailed explanations of coding solutions, demonstrating the effectiveness of the chosen approach.

PROJECTS

- **SearchSensei: Privacy-Focused Browser Extension** using **React**, **Chrome APIs**, **OpenAI API**, **HTML**, **CSS**: Developed a Chrome extension that enhances user privacy by providing query sanitization, data minimization alerts, and configurable preferences. [🔗](#)
- **Loan Sanctioning System** using **NodeJS**, **ExpressJS**, **ReactJS**, **tensorflow.js**: Developed a web-based loan prediction app using machine learning. Users apply for loans and employees predict approval. [🔗](#)
- **Machine learning-based web application** for predicting students' CGPA using **NodeJS**, **ExpressJS**, **ReactJS**, **primereact tensorflow.js**: The app predicts CGPA from student profile data and provides progress insights for teachers. [🔗](#)

PROGRAMMING COMPETITIONS ACHIEVEMENTS (C/C++ , Algorithms, Data Structures)

TEAM COMPETITIONS

- Top **2.2%**, **39th** out of 1747 participants, ICPC Dhaka Regional Preliminary 2021, Team: JU_O(n³)FanClub [🔗](#)
- Top **4.3%**, **78th** out of 1805 participants, ICPC Dhaka Regional Preliminary 2019, Team: JU_DarkSideOfTheMoon [🔗](#)
- **2nd Runner-up**, Bangladesh section, IEEEExtreme 14.0 2020, Team: JuPsychosocial [🔗](#)
- **2nd Runner-up**, Bangladesh section, IEEEExtreme 13.0 2019, Team: CGPAisProbabilistic [🔗](#)
- Participated in more than **15** regional, national, and inter-university Programming Contests

INDIVIDUAL COMPETITIONS

- **2nd**, Bangladesh section, Leetcode Biweekly Contest 28, Handle: thehalfblo0dprince [🔗](#)
- **2nd**, Bangladesh section, Leetcode Weekly Contest 187, Handle: thehalfblo0dprince [🔗](#)
- **Google Kickstart Round B 2022**: Ranked **540th** out of **7.2k** participants. [🔗](#)
- **Meta Hacker Cup 2022**: Ranked **2588th** out of **44.1k** participants(Qualified up to Round 2)[🔗](#)
- **Codeforces**: **Top 7.89%**, Max Rating: **1641**(handle: thehalfblo0dprince) [🔗](#)
- **Codechef**: **Top 1.36%**, Max Rating: **1913** (username: frdhsn) [🔗](#)
- Solved over **2600+** programming problems on different online judges [🔗](#)

LEADERSHIP AND EXTRACURRICULAR ACTIVITIES

Competitive Programming Community, IIT, Jahangirnagar University

Dhaka, Bangladesh

Team Lead & Senior Trainer

Mar 2019 - Current

- Coordinate contests, and teach **150+** participants programming concepts including Graph algorithms, Data structures, Dynamic Programming, etc.

IEEE Student Branch, Jahangirnagar University [🔗](#)

Dhaka, Bangladesh

Vice Chair

Jan 2021 - Mar 2022

- Coordinated and hosted technical events including IEEEExtreme hackathons and cybersecurity workshops.