

Md Farhad Hossain

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EDUCATION

Pennsylvania State University

PhD Student, Informatics

University Park, PA

Aug 2025 – Present

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

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

University Park, PA

Jun 2026 – Jul 2026

Advisor: Dr. Anna Squicciarini

- **Third-Party Relational Leakage in LLM-Mediated Text Rewriting:** Conducted initial research exploration and pipeline design; ran pilot experiments and analyzed results to inform the design of an evaluation benchmark.

Graduate Research Assistant, Governance, Privacy and Security Research Lab

College of Information Sciences and Technology

University Park, PA

Aug 2025 – May 2026

Advisor: Dr. Tanusree Sharma

- **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:** Conducted a 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 an iOS application with explainability features on ZKP concepts and interactive educational modules.
- **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: clontract-project.vercel.app

PUBLICATIONS

- **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. *Artificial Intelligence in Healthcare: Recent Applications and Developments*, 2022, pp. 179–197. [\[PDF\]](#)
- **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. *Trends in Electronics and Health Informatics (TEHI)* 2021, pp. 139–149. [\[PDF\]](#)
- **Artificial intelligence and machine learning for ensuring security in smart cities.** Sabbir Ahmed, Md Farhad Hossain, M Shamim Kaiser, Manan Binte Taj Noor, Mufti Mahmud, Chinmay Chakraborty. *Data-Driven Mining, Learning and Analytics for Secured Smart Cities*, 2021, pp. 23–47. [\[PDF\]](#)
- **Convid-net: an enhanced convolutional neural network framework for covid-19 detection from x-ray images.** Sabbir Ahmed, Md Farhad Hossain, Manan Binte Taj Noor. *Trends in Computational and Cognitive Engineering (TCCE)* 2020, pp. 671–681. [\[PDF\]](#)

TEACHING

Teaching Assistant, CYBER 440: Cybersecurity Analytics and Operations Capstone

College of Information Sciences and Technology

University Park, PA

Aug 2026 – Present

Instructor: Dr. Nick Giacobe

- Coach students on individual in-class work and hold scheduled office hours; assist the instructor with team formation and keep project teams on task during group activities.
- Grade assignments and exams against instructor rubrics, contribute to rubric refinement, and provide ungraded formative feedback on homework and projects.
- Review course readings, slides, and activities for clarity; occasionally substitute for course instruction.

HONORS & AWARDS

Graham Endowment for Academic Excellence, Penn State IST, \$3,000

2025

TECHNICAL SKILLS

Languages	C, C++, Java, JavaScript, Python, TypeScript, Kotlin, SQL, Go, R
Frameworks	Spring, Angular, Node.js, Express.js, React, Next.js, Flask
ML & Data	TensorFlow, pandas, OpenCV, scikit-learn, PyTorch, LangChain, LlamaIndex
Databases	MySQL, PostgreSQL, MongoDB, Elasticsearch, Cassandra, Redis, Firebase
Security & AI	Secure coding, API security, prompt engineering, LLM security testing
Tooling	Git, Jira, Bitbucket, Docker, Kubernetes, AWS, Azure

EXPERIENCE

Software Engineer, Cefalo AS

Kotlin, Java, Spring Boot, Angular, React

Dhaka, Bangladesh

Mar 2022 – Jun 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.
- Collaborated with **European stakeholders** in an **agile** environment to develop software solutions, review code, fix bugs and contribute to documentation.

AI Prompt Tester, Scale AI

Angular, Python, C++, TypeScript, HTML, CSS

Remote (Part-time)

Jul 2023 – Jan 2024

- Developed solutions for coding problems and created comprehensive test cases validating correctness and efficiency.
- Prepared problem summaries and detailed solution explanations giving the development team context on each chosen approach.

PROJECTS

- **SearchSensei — Privacy-Focused Browser Extension** (React, Chrome APIs, OpenAI API): Chrome extension providing query sanitization, data-minimization alerts, and configurable privacy preferences. [\[GitHub\]](#)
- **Loan Sanctioning System** [\[GitHub\]](#) and **Student CGPA Prediction** [\[GitHub\]](#) (Node.js, Express, React, TensorFlow.js): ML web apps predicting loan approval and student progress from profile data.
- **farhadcodes — competitive programming blog** (Java, Spring Boot, React): authentication and content management; 300+ posts. [\[GitHub\]](#)

PROGRAMMING COMPETITIONS (C/C++, ALGORITHMS, DATA STRUCTURES)

Team Competitions

- Top **2.2%** (39th of 1747), ICPC Dhaka Regional Preliminary 2021, Team: JU_O(n³)FanClub; top **4.3%** (78th of 1805), 2019, Team: JU_DarkSideOfTheMoon. [\[standings\]](#)
- **2nd Runner-up**, Bangladesh section, IEEEExtreme 14.0 (2020) and 13.0 (2019). [\[ranking\]](#)
- Participated in more than **15** regional, national, and inter-university programming contests.

Individual Competitions

- **2nd**, Bangladesh section, LeetCode Biweekly Contest 28 and Weekly Contest 187 (handle: thehalfblo0dprince). [\[standings\]](#)
- **Google Kick Start** Round B 2022: **540th** of **7.2k**. [\[cert\]](#) **Meta Hacker Cup** 2022: **2588th** of **44.1k** (Round 2). [\[cert\]](#)
- **Codeforces**: top **7.89%**, max 1641 [\[profile\]](#) **CodeChef**: top **1.36%**, max 1913 [\[profile\]](#) **2600+** problems solved [\[StopStalk\]](#)

LEADERSHIP AND EXTRACURRICULAR ACTIVITIES

Competitive Programming Community, IIT, Jahangirnagar University

Team Lead & Senior Trainer — coordinate contests; teach **150+** participants graph algorithms, data structures, dynamic programming

Dhaka, Bangladesh

Mar 2019 – Present

IEEE Student Branch, Jahangirnagar University

Vice Chair — coordinated IEEEExtreme hackathons and cybersecurity workshops

Dhaka, Bangladesh

Jan 2021 – Mar 2022