

Farhad Hossain

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🌐 LinkedIn 🐙 GitHub 🎓 Google Scholar 📄 ResearchGate 🌐 Website

EDUCATION

The Pennsylvania State University

Doctor of Philosophy in Informatics

Research Focus: Usable Security and Privacy, AI Governance, HCI and Accessible Computing

University Park, PA

Expected May 2030

Institute of Information Technology, Jahangirnagar University

Bachelor of Science in Information Technology; CGPA: 3.53 out of 4.00

Dhaka, Bangladesh

Mar 2017 - May 2022

RESEARCH INTEREST

Usable Security and Privacy, Cybersecurity, AI Governance, Large Language Models (LLMs) Security, Blockchain Security, Machine Learning Security, Human-Computer Interaction in Security

EXPERIENCE

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

Dhaka, Bangladesh

Mar 2022 - Current

- 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.
- Manage the **Repository** module handling physical archival units (e.g., storage units, racks, shelves), ensuring efficient tracking and space management.
- 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.

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 [🔗](#)
- **Eligible Personal Loan Applicant Selection using Federated Machine Learning Algorithm.** Mehrin Anannya, Shahera Khatun Most, Md Biplob Hosen, Sabbir Ahmed, **Farhad Hossain**, M Shamim Kaiser. In: International Journal of Advanced Computer Science and Applications 2023. Volume 14, Issue 8. [🔗](#)
- **Impact, Causation and Prediction of Socio-Academic and Economic Factors in exam centric student evaluation measures using Machine Learning and Causal Analysis** Sabbir Ahmed, Md Biplob Hossen, Md Farhad Hossain (Under Review)

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, primere-act tensorflow.js**: The app predicts CGPA from student profile data and provides progress insights for teachers. [🔗](#)
- **farhadcodes-a-CP-blog** using **Java, Spring Boot, React.js**: Created a feature-rich blog implementing user authentication and content management capabilities; the platform now supports over 300 unique posts, driving substantial community engagement. [🔗](#)
- **NeuroDetect (In Development)** using **Python, Flask, TensorFlow, React**: A multi-modal web app leveraging questionnaire data, audio analysis, eye scan paths, and Fitbit data to detect Autism Spectrum Disorder (ASD) with enhanced accuracy.
- **CodeRanker (In Development)** using **NodeJS, ExpressJS, ReactJS, Python, PostgreSQL, public APIs (Codeforces, Codechef)**: A coaching tool for analyzing participants' strengths in topics like data structures and algorithms, using performance data fetched from Codeforces and Codechef APIs.
- **Micro-chain (In Development)** using **Golang, Ethereum, Smart Contracts, IPFS, MongoDB, Docker, Kubernetes**: A lightweight blockchain alternative focused on optimizing chain operations and reducing resource consumption for distributed ledger systems.

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 [🔗](#)

TECHNICAL SKILLS

Skill	Advanced	Intermediate	Basic
Programming Language	C, C++ , Java, JavaScript, Python	TypeScript, Kotlin, SQL	Go, R
Frameworks	Spring, Angular	Node.js, Express.js, React	Next.js, Flask
Libraries	TensorFlow, pandas, OpenCV	scikit-learn, PyTorch	LangChain, LlamaIndex
Databases	MySQL, PostgreSQL, MongoDB	Cassandra, Redis	Firebase
Security & AI	Secure Coding	API Security, Prompt Engineering	LLM Security Testing
Others	Git, Jira, Bitbucket	Docker, Kubernetes	AWS, Azure

LEADERSHIP AND EXTRACURRICULAR ACTIVITIES

Competitive Programming Community, IIT, Jahangirnagar University

Team Lead & Senior Trainer

Dhaka, Bangladesh

Mar 2019 - Current

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

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

Vice Chair

Dhaka, Bangladesh

Jan 2021 - Mar 2022

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