

Md Shariful Islam Khan

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Education

Bangladesh University of Engineering and Technology (BUET)
B.Sc. in Computer Science and Engineering; **CGPA: 3.77/4.00**

Dhaka, Bangladesh
Feb 2020 – Feb 2025

Notre Dame College (NDC)
Higher Secondary Certificate, Science; **GPA: 5.00/5.00**

Dhaka, Bangladesh
June 2017 – May 2019

Skills

Languages:	C, C++, Java, Python, JavaScript, Assembly, Bash, HTML, CSS
Frameworks & Libraries:	Next.js, React, Node.js, Express.js, PyTorch, TensorFlow, scikit-learn
Database:	Oracle, PostgreSQL, MySQL, Prisma ORM, SQLite
Tools:	Git, GitHub, Docker, Postman
Cloud:	Amazon EC2, Azure VM

Projects

Mathmaster | *Express, Node.js, PostgreSQL, Prisma ORM, Tailwind CSS*

[GitHub](#)

- Directed the development of an interactive math learning platform for Bangladeshi students, encompassing tailored modules for students, authors, moderators, and administrators.
- Delivered key features including student enrollment, interactive lessons, quizzes, course creation tools, content moderation workflows, and platform-wide analytics for informed decision-making.
- Architected the **database schema** and adhered to the **MVC architecture** to ensure scalable and maintainable design.
- Built and optimized **RESTful APIs** to facilitate interaction between client and server. Implemented a robust **role-based authentication system** using JWT to manage access for various user roles securely.
- Designed and deployed a centralized file system in Azure VM to efficiently manage variable-length content such as lessons and dictionaries.

Criccbuzz | *OracleDB, Express, EJS, Node.js, Bootstrap*

[GitHub](#)

- Developed a dynamic cricket information platform** as part of an academic database sessional course, leveraging OracleDB.
- Implemented features enabling users to view live cricket scores, match/player statistics, schedules, and results in a responsive interface.
- Built the frontend** using EJS and Bootstrap to create an engaging user experience while integrating with **Express** and **Node.js** for backend functionality.

Football Transfer Market | *JavaFX, Java*

- Developed a client-server application simulating a football transfer market, enabling clients to buy and sell players through a centralized database.
- Utilized Java's multithreading and networking features to handle concurrent client interactions and ensure seamless communication between the server and multiple clients.
- Designed an intuitive graphical user interface (GUI) using JavaFX for a user-friendly client-side experience.

Research Experience

PCA-Based Backdoor Attack Detection and Trigger Mitigation in Federated Learning

- Designed a defense mechanism to counter backdoor poisoning attacks in Federated Learning by identifying malicious clients with PCA and mitigating their impact on the global model.
- Achieved a 100% detection rate and significantly reduced backdoor influence through testing on benchmark datasets.

GuardFL: Detection and removal of malicious clients through a majority consensus

Published in COMPSAC, 2024

Osaka, Japan

- Designed a novel defense mechanism to counter backdoor poisoning attacks in Federated Learning by integrating majority consensus and client feedback to identify and isolate malicious clients.