

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, PostgreSQL, Prisma ORM, JWT, ESLint*

[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 seamless 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 to efficiently manage variable-length content such as lessons and dictionaries.

Criccbuzz | *OracleDB, Express, EJS, HTML, CSS, 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.

Catch the Egg | *OpenGL, IGraphics, C*

[GitHub](#)

- Designed and developed a 2D game replica** of "Catch the Egg" using OpenGL and IGraphics libraries in C.
- Incorporated dynamic animations and interactive elements to enhance gameplay and user engagement.

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 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.