Tanvir Hasan

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Research Interests

- Distributed Computing
- Machine Learning
- Cloud Computing
- Deep Learning
- Signal Processing
- Software Engineering

Education

B.Sc. in Computer Science & Engineering Feb 2017 - Oct 2022
Chittagong University of Engineering & Technology (CUET)
CGPA: 2.90/4.0
Academic Thesis: A Comparative Study of Machine Learning and Deep Learning Models for EEG-Based Seizure Detection.

- CNN, RNN, LSTM and ML classifiers were implemented and compared on EEG data, achieving high detection accuracy while analyzing performance-complexity trade-offs.

Standardized Tests

Test	Score	Date
GRE General Test	Q: 161 | V: 138 | AWA: 2.5	11 August 2025
IELTS Academic	Scheduled for early November 2025	—

Professional Experience

Telcobright Ltd. **Apr 2023 – Present**
Software Engineer

- Worked to design and develop a fault-tolerant distributed stream processing system from the ground up
- Implemented exactly-once processing semantics for critical data pipelines using Apache Flink and Kafka, ensuring 100% data integrity and reliability
- Built a microservices-based backend with Java and Spring Boot, with REST APIs, JPA/ Hibernate, gRPC, Kafka
- Implemented security, authentication, and API routing patterns using Spring Security and Gateway
- Applied software design patterns for scalable and maintainable systems across multiple projects
- Assisted in designing a system with database replication, containerization, and FTP server integration

Technology Used: Java, Spring Boot, Quarkus, Apache Kafka, Apache Flink, gRPC, Docker, JPA/ Hibernate

BJIT Ltd. **Jan 2022 – Mar 2022**
Software Engineering Intern

- Developed and integrated RESTful APIs using Spring Boot to handle HTTP requests and perform CRUD operations.
- Used Postman for comprehensive API testing, ensuring endpoint reliability and data accuracy.
- Built front-end components to dynamically retrieve and display data from a back-end database, creating a seamless user experience.

Relevant Coursework

Algorithm Design, Data Structures, Operating Systems, Compiler Design, Networking,
Machine Learning, Artificial Intelligence, Software Engineering, Digital Signal Processing, Digital Systems Design

Projects

Real-Time Distributed Messaging System
Repository

- Built a high-performance server using **multithreading** and **WebSocket** for real-time messaging, streaming data into **Kafka** topics
- Implemented a fault-tolerant, **distributed messaging pipeline** with **Apache Flink**, achieving **exactly-once message delivery**
- Integrated **Kafka** for durability and persistence, ensuring no data loss during failures

Online Voting System for University Elections
Repository

- Built a secure online voting platform using **Spring Boot (Microservices)** and **MySQL**, ensuring one-vote-per-user integrity
- Developed a **React** frontend for voter authentication, candidate selection, and result display
- Focused on security, scalability, and transparency to support fair university elections

Reactive Website for a Stock Brokerage Firm
Simclbd.com

- Developed a consultancy firm website using React, driven by a personal passion for learning and exploring React's capabilities
- Utilized React's core functionalities to build a fully functional and aesthetically pleasing website, showcasing a comprehensive understanding of modern front-end development techniques

Achievements

Competitive Programming

- Pupil in Codeforces with a maximum rating of **1374 (Pupil)**. (CF handle: Veer)
- Solved over **1500+** problems across various online judges (Codeforces, LeetCode, etc.)

Machine Learning Specialization - Stanford University Online by Andrew Ng (Coursera)

- Gained hands-on experience in supervised/unsupervised learning and applied core ML concepts including linear regression, logistic regression, neural networks, and decision trees.

Computing Skills

- **Programming Language:** C/C++, Java, C#, Python
- **Databases & Messaging:** MySQL, MariaDB, Redis, Apache Kafka
- **Version Control:** Git
- **Container Technologies:** Docker,LXD
- **Operating Systems:** Linux kernel-based distributions(Ubuntu, Debian, CentOS etc.), Windows

Activities

- **Finance Secretary** for the CUET CSE Fest organized by the CUET Computer Club, managing financial operations and ensuring the successful execution of the event
- **Volunteered** at the National Collegiate Programming Contest (NCPC) 2017, contributing to event organization and supporting participants in a high-stakes programming competition