Mohammed Mansib Shahriyar Alam

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Summary

Computer Science undergraduate with experience designing and building scalable web and mobile applications using modern frameworks and cloud-backed architectures. Strong foundation in data structures, algorithms, and software engineering, with hands-on experience in authentication, database design, and real-time systems through research, hackathons, and production-grade projects.

Education

Qatar University — Doha, Qatar
B.Sc. in Computer Science — *Expected Dec 2026*

- GPA: 3.47 — Dean's List — Vice President's List
- Relevant Coursework: Data Structures, Design & Analysis of Algorithms, Software Engineering, Object-Oriented Programming, Web Development, Database Systems, Operating Systems, Machine Learning, Mobile Application Development

Experience

Practical Training Intern — Jun 2026 – Jul 2026
Scale AI — *Doha, Qatar*

- Conducted adversarial testing on a production QU advising chatbot, designing prompt injection strategies to probe LLM guardrails and documenting findings in a formal report
- Built an LLM-based schedule-planning agent, integrating the Groq API with Llama 3.3 70B after benchmarking local models for reasoning quality and latency
- Built a faculty-facing simulation engine modeling how a full cohort of CS/CE students progresses through their degree term by term, seeded with real QU enrollment data
- Developed a bottleneck analysis module using deterministic, paired-experiment testing to quantify how course capacity constraints delay or block graduation
- Implemented a Monte Carlo simulation mode and enrollment forecasting feature to model uncertainty and project future capacity shortages
- Architected the system using FastAPI and React, with 17 automated backend tests and deployment on Render

Summer Research Intern — Jun 2025 – Aug 2025
Qatar University — *Doha, Qatar*

- Developed a machine-learning-based system to detect motorcycle rider distraction in real time
- Implemented computer vision techniques for helmet detection, head pose estimation, and phone usage
- Worked with data collection, preprocessing, model training, and evaluation pipelines
- Optimized models for real-world conditions including lighting and motion variability
- Used Python, OpenCV, TensorFlow/PyTorch for experimentation and prototyping
- Worked with Python-based ML pipelines, model evaluation, and performance optimization
- Applied software engineering practices including modular design, experimentation, and documentation
- Awarded Best Research Project (IT) at QU SRIP 2025

Projects

CampConnect (Hackathon Finalist – Mobile Application) | *Flutter, Firebase, Geolocation APIs*

- Built a Flutter-based mobile application during a hackathon to connect displaced students with nearby educational camps
- Selected as finalists for technical implementation, usability, and social impact
- Implemented geolocation-based camp discovery and real-time resource availability
- Developed role-based access for teachers and students with Firebase Authentication
- Integrated real-time data storage and enrollment management using Firestore

YalaPay (B2B Fintech Mobile Application) | *Flutter, Firebase, Riverpod, SQLite*

- Developed a cross-platform Flutter application for cheque management, invoicing, and multi-bank payments

- Implemented secure authentication, role-based access, and real-time data synchronization using Firebase
- Designed scalable application architecture using Riverpod for state management and GoRouter for navigation
- Integrated local SQLite database with Floor ORM to reduce backend load and enable offline access
- Built modular UI components using Material Design 3 with custom theming

Course Management System (University Web Platform) | *Next.js, React, Prisma, PostgreSQL, NextAuth*

- Designed and developed a full-stack web application for managing university courses, registrations, and academic workflows
- Implemented role-based dashboards for students, instructors, and administrators with secure authentication
- Built course registration with prerequisite validation, section capacity management, and grade tracking
- Designed relational database schema using Prisma ORM with PostgreSQL
- Integrated credentials-based login and OAuth (Google, GitHub) using NextAuth
- Deployed live application using Vercel with production-ready configuration

Volunteer Experience

Volunteer
EEITC Conference, Qatar University

- Assisted conference attendees with registration and on-site coordination
- Helped manage logistics and provided technical guidance to visitors

Technical Skills

Languages: Java, Python, JavaScript, SQL
Frameworks & Tools: Flutter, React, Next.js, Firebase, MongoDB, Git
Concepts: Data Structures, Algorithms, OOP, REST APIs, Machine Learning, Computer Vision
Spoken Languages: English, Bengali, Hindi