



SUBROTO DAS

Full Stack Developer & Mobile App Developer (React Native)

📍 Dhaka, Bangladesh

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PROFESSIONAL SUMMARY

Full Stack Developer and Mobile App Developer specializing in scalable backend architecture, realtime systems and cross-platform **React Native** apps. Engineered core infrastructure for one of Bangladesh's largest EdTech platforms (Apar's Classroom), serving **200,000+ active users** and handling **110M+ monthly API requests**, with a push notification system reaching **500,000+ users** across **8+ production systems** shipped. Hands-on expertise in **Node.js, Express, NestJS, Next.js, PostgreSQL, Redis, BullMQ and Socket.IO**, with a strong focus on system design, performance, security (JWT, RBAC) and production reliability. Also runs a Bangla programming education channel and an open system-design knowledge hub.

WORK EXPERIENCE

Full Stack Developer - Apar's Classroom (ASG Shop), Dhaka

Dec 2024 - Present

Node.js | Express | Next.js | PostgreSQL | Prisma | Redis | BullMQ | Socket.IO | FCM | PgBouncer | Docker

- Built a **queue-based push notification system** (BullMQ workers + FCM) delivering to **500K+ users** in batches of 500 tokens, with cursor-based pagination, throttling, retry with exponential backoff and automatic dead-token cleanup.
- Prevented duplicate jobs and cache stampedes using **Redis distributed locks**, caching and rate-limiting, keeping the platform stable under peak load.
- Designed a **realtime chat system** with Socket.IO covering message delivery, online/offline presence and room management, architected for horizontal scaling.
- Introduced **PgBouncer connection pooling** in front of PostgreSQL to handle thousands of concurrent connections without exhausting the database.
- Engineered a **multi-level nested comment system** using a self-referential schema and optimized recursive queries, plus an atomic emoji **reaction system** with realtime UI feedback.
- Built a flexible **add-on service system** (5-table schema) and a structured **note management module** for learners.
- Secured REST APIs with **JWT authentication, Redis-backed sessions and role-based access control** (Student, Admin, Super-Admin).
- Maintain and enhance live production systems with zero-downtime deployments and reusable, module-based Prisma patterns.
- Collaborate directly with the company's **CEO, CTO and Managing Director** on technical strategy and product decisions; represented the company in an in-person meeting with an **EdTech company in Malaysia**.

TECHNICAL SKILLS

Languages	JavaScript (ES6+), TypeScript, C, C++
Backend	Node.js, Express.js, NestJS, REST APIs, Socket.IO (WebSockets), BullMQ (job queues)
Frontend	React, Next.js, Redux Toolkit, Context API, Tailwind CSS
Mobile	React Native, React Navigation, Firebase Cloud Messaging (FCM), Android & iOS
Databases	PostgreSQL, MongoDB, Redis, PgBouncer; ORMs: Prisma, Sequelize
DevOps & Tools	Docker, CI/CD, GitHub Actions, Linux, Git, Electron
Concepts	System Design, Scalability, Caching, Distributed Locks, Rate Limiting, ACID Transactions, JWT Auth, RBAC, SSO, OOP, Payment Gateway (SSLCommerz)

KEY PROJECTS

Apar's Classroom Learning Platform - Web App

Next.js | Node.js | Express | PostgreSQL | Prisma | Redis

- Built a high-performance Next.js frontend with **RBAC**, delivering tailored experiences for Students, Admins and Super-Admins from a single backend.
- Engineered **Live Class** interfaces and an optimized content delivery system handling high-traffic workloads.

subrohub - Centralized Auth / SSO System

Node.js | JWT | Redis | PostgreSQL

- Designed a single centralized authentication service for multiple apps: login, access/refresh token rotation and fine-grained permission control.

Rupashi Bangla Club Mobile App (rbcApps) - React Native

React Native | JavaScript | Redux / Context API | React Navigation | Axios

- Developed a cross-platform **Android & iOS** app for club members with authentication, activity tracking and REST API integration.
- Optimized rendering and state management for low-latency, fluid UX; built scalable components for announcements and events.

Government Inventory & POS System

Node.js | Express | PostgreSQL | Sequelize | Electron

- Co-designed a large-scale inventory system covering the full lifecycle: sourcing, shipping, vendor distribution and POS sales.
- Architected backend APIs and database design; integrated an **Electron desktop POS** for vendors.

Financial Dashboard System - Achieve Centre

Node.js | Express | Next.js | PostgreSQL | Prisma

- Built the backend for expenses, collections, investments, invoicing and **SMS integration**, with RBAC and realtime cash-flow dashboards.

Charity Platform - ACS Foundation

Node.js | Express | Next.js | PostgreSQL | Prisma | SSLCommerz

- Built an end-to-end donation platform and admin panel with **SSLCommerz payment gateway** integration and automated reconciliation.
- Implemented multi-level RBAC and a map-based UI managing volunteers from District to Union level across Bangladesh.

KNOWLEDGE SHARING

Systems Hub - systems.subromart.com

- Interactive, animated case studies on production engineering: Redis at scale, PostgreSQL internals, ACID, PgBouncer, Auth, Socket.IO and notification systems.

bugCoder Academy - YouTube

- Free Bangla C programming course: 19 videos, 9+ hours, from basics to problem solving.

EDUCATION

B.Sc. in Computer Science & Engineering (CSE)

Islamic University, Kushtia, Bangladesh

Graduated: 2024

LANGUAGES

Bengali (Native) | English (Professional)