# Shubham Bhattacharya

**Backend Developer | Node.js, Express, MongoDB, Socket.IO | MERN Stack**

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## Professional Summary

BCA student (Final Year) specializing in backend development with Node.js ecosystem. Built and deployed 3+ production-ready applications serving 150+ active users with 99% uptime. Experienced in designing REST APIs, implementing JWT authentication, real-time systems with Socket.IO, and database optimization with MongoDB. Strong foundation in data structures and algorithms. Actively seeking backend internship to contribute to scalable production systems while gaining industry experience in fintech or real-time applications.

## Technical Skills

**Backend:**          Node.js, Express.js, REST APIs, JWT Authentication, Middleware, Socket.IO, WebSockets, EventEmitter

**Database:**         MongoDB, Mongoose ODM, PostgreSQL, Query Optimization, Indexing, Database Design

**Frontend:**         React.js, Zustand (State Management), Axios, Responsive Design

**Tools & DevOps:**   Git, GitHub, Postman, VS Code, Linux, Render, Docker (Basics), API Testing

**Core Concepts:**    MVC Architecture, Error Handling, Input Validation, Security (bcrypt, CORS), RESTful Design

## Projects

### JustChat – Real-Time Chat Application
Node.js • Express • MongoDB • Socket.IO • JWT • React • bcrypt

🔗 Live Demo    💻 GitHub

- Built real-time messaging system using Socket.IO with bidirectional event handling, supporting 100+ concurrent users with 99% uptime on Render deployment.
- Implemented JWT-based authentication with bcrypt password hashing (salt rounds=10), secure session management, and protected routes for authorized access control.
- Designed RESTful APIs for chat room creation, real-time messaging, online user presence tracking, and profile management with proper HTTP status codes.
- Optimized WebSocket connection handling reducing message latency by ~20% through efficient event listeners, connection pooling, and caching strategies.
- Integrated MongoDB with Mongoose schemas featuring validation rules, indexing on userId and roomId fields for faster queries, and proper error handling.

### GitHub Explorer – MERN Stack Application
Node.js • Express • MongoDB • React • GitHub REST API • OAuth • Passport.js

🔗 Live Demo    💻 GitHub

- Developed full-stack MERN application integrating GitHub REST API to fetch and display user profiles, repositories, followers, and activity feeds with real-time updates.
- Built Express backend as API proxy layer handling GitHub API rate limiting (5000 requests/hour), implementing response caching to reduce external API calls by 60%.
- Implemented GitHub OAuth authentication flow using Passport.js for secure user login, session management, and protected routes with token-based authorization.
- Created comprehensive error handling for API failures, network issues, and rate limit scenarios with user-friendly error messages and fallback mechanisms.
- Designed responsive React frontend with Zustand state management for efficient data flow and Axios for seamless frontend-backend communication.

## Education

### Bachelor of Computer Applications (BCA)
Parul University, Vadodara | 2022 – 2025
Expected Graduation: May 2025 | CGPA: 8.0/10.0

Relevant Coursework: Data Structures & Algorithms, Database Management Systems, Web Technologies, Software Engineering

**Availability:** Immediate joiner for 3–6 month Backend Internship (Node.js/Express) • Open to Remote/Hybrid • Open to full-time conversion