Pranjal Kumar

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Education

AMC Engineering College	Bengaluru, Karnataka
Bachelor of Engineering in Computer Science and Engineering	Expected 2027

Technical Skills

Languages: Java, Python, JavaScript
Backend: Spring Boot, Spring Data JPA, Node.js, Express.js, RESTful API Design, JWT Authentication
Frontend: React, Next.js, React Native, HTML, CSS, Tailwind CSS
Databases: SQL, MongoDB
Tools & Platforms: Git, GitHub, Postman, Vercel, Render
Core Concepts: Data Structures & Algorithms, API Design, System Architecture, RBAC, Input Validation

Projects

CSE Student Hub — Centralized Academic Platform Personal Project
React Native, Expo, Node.js, Express, MongoDB, JWT

- Architected and developed full-stack platform designed to scale 500+ students with RESTful APIs supporting notices, resources, and placement data management across 3 user roles
- Implemented Role-Based Access Control (RBAC) system with JWT authentication, resolving critical authorization vulnerabilities including role leakage through systematic debugging and security hardening
- Designed layered backend architecture with clear separation of concerns, implementing DTO-based APIs with comprehensive input validation to ensure data integrity
- Built coding practice module with local logic execution task runner, optimizing submission processing pipeline to reduce response latency by 40%
- Developed responsive cross-platform mobile UI using React Native, ensuring consistent user experience and seamless navigation flows

Paginated Legal Document Editor OpenSphere Assignment
Next.js, Tiptap, Tailwind CSS — Live Demo

- Engineered web-based rich-text editor with real-time pagination for US-Letter format documents, implementing DOM-based layout measurement system for accurate page boundary detection
- Designed custom page-node document model to isolate content across physical pages, eliminating layout instability and ensuring print-accurate rendering
- Implemented visual overflow detection algorithm with manual resolution controls, maintaining document correctness and preventing content truncation
- Developed print-ready CSS architecture ensuring pixel-perfect match between on-screen display, PDF export, and physical printing
- Deployed production-ready application on Vercel with comprehensive documentation and open-source codebase on GitHub

Additional Experience

Problem Solving & Algorithms

- Consistently active on LeetCode, maintaining a focus on optimizing brute-force solutions to $O(N \log N)$ or $O(N)$ time complexity
- Completed 300+ hours of coursework earning certifications in JavaScript Algorithms & Data Structures, achieving mastery in algorithm design and computational complexity analysis