

Abhinav Kumar

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Summary

Aspiring Computer Science (AI & ML) undergraduate and Full-Stack Developer with hands-on experience building MERN applications and RESTful APIs. Skilled in backend architecture, database integration, system optimization, and problem-solving, with a focus on developing scalable and reliable web applications. Seeking a backend-focused software engineering role to build robust, production-ready systems.

Education

RNS Institute of Technology

Bachelor of Engineering – Computer Science (AI & ML)

Bengaluru, India

Sep 2023 – June 2027

- Current GPA: 8.41/10 | 7th semester
- Relevant coursework: Data Structures & Algorithms, Object-Oriented Programming, Operating Systems, Computer Networks, Database Management Systems, Machine Learning

Technical Skills

Languages: C, C++, Java, Python, JavaScript, TypeScript

Frontend: React.js, Tailwind CSS, HTML5, CSS3, Chart.js

Backend: Node.js, Express.js, REST API Development, MVC Architecture, JWT Authentication, bcrypt.js, js-tiktoken

Databases: MongoDB, MySQL, Firebase Firestore

Tools & Platforms: Git, GitHub, Postman, Firebase, VS Code

CS Fundamentals: Data Structures & Algorithms (DSA), OOP, OS, Computer Networks, DBMS

Projects

Prompt Optimizer | *Node.js, Express.js, MongoDB, React.js, Tailwind CSS, js-tiktoken, JWT*

- Built a full-stack developer utility to optimize LLM prompts using a rule-based regex compression pipeline that eliminates conversational fluff, redundancy, and structural bloat while preserving instruction density.
- Integrated OpenAI's `js-tiktoken` library for localized token counting; engineered a pricing analysis module to calculate real-time baseline cost estimates across OpenAI, Anthropic, and Google API vendors.
- Designed RESTful APIs with MVC architecture; implemented JWT-based authentication, bcrypt.js password hashing, and per-user prompt history logging in MongoDB.
- Enabled developers to quantify prompt compression savings (token count delta, cost reduction %) before making live API calls, reducing unnecessary LLM spend.

KalaSetu – AR-Based Cultural Commerce Platform | *React.js, Tailwind CSS, Node.js, Express.js, MongoDB, AR.js*

- Developed an augmented reality marketplace enabling users to visualize traditional crafts and decor within real-world environments before purchase.
- Designed a digital preservation module that archives indigenous patterns, techniques, and artistic styles for long-term accessibility.
- Built a direct artisan-to-consumer platform eliminating intermediaries and enabling rural creators to manage storefronts and reach global buyers.
- Implemented inclusive UI/UX architecture ensuring usability for individuals with varying levels of digital literacy.

DevCollab – Full-Stack Project Management Platform | *Node.js, Express.js, MongoDB, React.js, Tailwind CSS, Socket.io*

- Architected and built a Jira/Trello-style collaboration platform using MongoDB, Express, React, and Node.js, supporting multi-workspace project hierarchies, role-based access control, and a drag-and-drop Kanban board for task tracking.
- Implemented secure JWT authentication with bcrypt hashing and RBAC middleware, and engineered real-time features (live task updates, team chat) using Socket.io.
- Designed RESTful APIs with Mongoose data modeling, MongoDB aggregation pipelines for analytics dashboards, and Cloudinary-backed file uploads; deployed via a CI-driven pipeline to production.

Achievements

- Earned a 2★ rating on CodeChef, demonstrating strong competitive programming and problem-solving skills.
- Achieved a 1000+ rating on Codeforces and solved 150+ problems through consistent competitive programming practice.
- Achieved a 1600+ rating on LeetCode and solved 250+ problems across data structures and algorithms.
- Secured a Semi-Finalist position among 2000+ teams in PW-RIFT, a 24-hour National-Level Hackathon, by developing an innovative technical solution under strict time constraints.