

# Rishabh Singh

## Backend Developer | Node.js, Express, MongoDB

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### Summary

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Backend Developer with hands-on experience building **secure and scalable REST APIs** using Node.js, Express, and MongoDB. Strong understanding of **authentication, authorization, database relationships**, and real-world backend logic. Focused on designing **backend systems with clean architecture**, proper validation, and performance-aware design.

### Technical Skills

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**Languages:** JavaScript (ES6+)

**Backend:** Node.js, Express.js, REST API Design, Middleware Architecture

**Frontend:** React.js (Vite), React Router v6, Context API, Axios, Tailwind CSS, DaisyUI

**Databases:** MongoDB, Mongoose, Indexing

**Authentication & Security:** JWT, bcrypt, httpOnly Cookies, Role-Based Access Control (RBAC)

**File Handling:** Multer (multipart/form-data)

**Tools & Deployment:** Git, GitHub, Postman, Render

### Projects

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#### URL Shortener — Full Stack | React, Node.js, Express.js, MongoDB | Live Demo

- Built a full-stack URL shortener with React (Vite) frontend and Node.js/Express backend; secured with **JWT auth via httpOnly cookies** and deployed on Render.
- Engineered a **credit-based throttling system** using atomic MongoDB \$expr updates, ensuring 100% data consistency and preventing race conditions during concurrent user requests.
- Built **role-based access control** (user/admin) using layered Express middleware (protect + isAdmin) applied at router level.
- Developed an **Admin Panel** to manage users, URLs, and credit requests — with activate/deactivate, role change, and credit approval flows.
- Supported **custom aliases, 24hr URL expiry, and click tracking**; enforced ownership checks before deactivation.
- Structured frontend with a **centralized Axios API layer** (lib/api.js) with withCredentials: true for consistent cookie-based auth across all requests.

#### NoteSphere — Collaborative Study Platform | React.js, Node.js, Express.js, MongoDB Atlas, Multer | Live Demo

- Architected a responsive frontend using **React.js and Tailwind CSS + Daisy Ui** with a reusable component-based architecture for consistent UI across the application.
- Implemented **client-side routing with React Router** including **protected routes** to restrict access to authenticated users and dashboards.
- Used **React Context API** for global state management to handle authentication state, API data flow, and UI preferences across components.
- Designed separate **Admin and User dashboards** with role-based UI rendering — enabling admins to manage uploads/users and students to browse and download study materials.
- Integrated frontend with backend using **Axios API layer** and centralized request handling for consistent API communication.
- Implemented backend **JWT authentication and role-based authorization middleware** for secure API access and protected routes.
- Built a **file upload system using Multer** to handle study material uploads with multipart form data and file validation.

### Education

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**Bachelor of Computer Applications (BCA)**

2023 – 2026

Post Graduate Government College — PGGC11

**Senior Secondary (Class XII)**

2022

GMSSS-23

CGPA: 8.5