Ritik Kumar

Backend Developer — Machine Learning

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Education

Chandigarh University	**Aug 2021 – June 2025**
Bachelor of Engineering in Computer Science and Engineering (CSE)	*Mohali, Punjab*

Technical Skills

Languages:	C++, HTML5, CSS3, Java, Python, JavaScript, TypeScript, Golang, SQL
Frameworks/Technologies:	React.js, Next.js, Vue.js, Node.js, Express.js
Cloud:	Google Cloud, AWS
Database:	MongoDB, MySQL, PostgreSQL
DevOps and Infra Tools:	GitHub, Docker, Postman, Ngrok, Nginx, Jenkins, Kubernetes, CI/CD
Coursework:	Data Structures and Algorithms, Operating Systems, Object-Oriented Programming (OOPs), Software Development Lifecycle (SDLC), Agile Methodologies, Software Testing Basics

Projects / Experience

E-Commerce REST API – Scalable Backend System — Node.js, Express.js, MongoDB, Docker

Developed modular **RESTful APIs** for authentication, product catalog, cart, and order lifecycle using **JWT** authentication and role-based access control.

Implemented **Redis caching**, **pagination**, and **rate limiting** to improve performance and reduce database hits by **40%**.

Containerized the application using **Docker** and created **CI/CD pipelines** with GitHub Actions for automated deployment.

Optimized **MySQL schema design** and indexing strategy, reducing query response time by **35%**.

Integrated centralized logging and error tracking using **Winston** and **PM2** for better debugging and monitoring.

SaaS Subscription Billing Platform – Backend-as-a-Service — Node.js, Express.js, PostgreSQL, AWS, Stripe API

Engineered a **SaaS backend service** supporting multi-tenant user architecture, subscription management, and payment processing using the **Stripe API**.

Designed a robust **role-based access system** with authentication and authorization via **JWT** and **refresh tokens**.

Implemented advanced **analytics endpoints** with real-time metrics on revenue, active users, and plan upgrades using **PostgreSQL window functions**.

Integrated **AWS S3** for secure file storage and **AWS SES** for automated email notifications (invoice and subscription events).

Set up automated deployment via **CI/CD pipeline (GitHub Actions)** and containerized the application using **Docker**.

HealthPredict – AI Disease Prediction Platform — Python, Flask, React.js, Machine Learning

Built a full-stack ML-powered web app for early disease prediction using **Random Forest**, **SVM**, and **Logistic Regression**, achieving **89% accuracy**.

Performed **data preprocessing**, feature selection, and **hyperparameter tuning** using scikit-learn and Pandas.

Integrated the model with a responsive **React.js frontend** and built secure APIs using **Flask RESTful**.

Deployed the model with **Docker** and connected to Firebase for real-time user authentication and data storage.

Improved inference latency by **30%** through model serialization using **Pickle** and caching predictions in **Redis**.

Achievements

LeetCode: Solved **800+** problems, ranked in Top **35%** globally in Data Structures and Algorithms.

LeetCode Contests: Weekly participant, max rating **1550+**.

Smart India Hackathon 2023: Achieved Top **30** position nationwide for an AI-based EdTech solution.

AMCAT Assessment: Scored **90+ percentile** (Grade A) in Quantitative, Logical, and Programming sections.

Certifications

Postman API Fundamentals Student Expert — Postman (2023)

Introduction to Internet of Things — NPTEL, IIT Kharagpur (2022)

Data Science Professional using R — Infosys (2025)