

# Rishav Kumar

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## PROFESSIONAL SUMMARY

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Software Development Engineer with 2+ years of experience building scalable backend systems and full-stack applications. Strong in Python, Node.js, and system design with proven track record of optimizing performance (69% faster API responses, 57% reduced latency) and building systems serving 500+ concurrent users. Expertise in REST APIs, distributed systems, database optimization, and real-time processing. Passionate about solving complex business problems through elegant, efficient code.

## TECHNICAL SKILLS

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**Backend & Systems:** Python (Django, Flask, FastAPI), Node.js, Java, REST APIs, WebSocket, Microservices

**Database & Caching:** PostgreSQL, MongoDB, Redis, SQLite, Query Optimization, Indexing

**System Design & Scale:** Distributed Systems, Load Balancing, Async Processing, Caching Strategies, Scalable Architecture

**Core CS:** Data Structures & Algorithms, Object-Oriented Programming, Design Patterns, Big O Analysis

**DevOps & Tools:** Docker, CI/CD, Git, Linux, Load Testing, AWS (ECS), Monitoring

**Frontend & Mobile:** Flutter, React.js, Next.js, Android (Kotlin), HTML5/CSS3

**Languages:** Python, JavaScript, Java, Dart, Kotlin, Go (learning), SQL, Bash

**AI/ML:** NLP, ML Model Integration, SVM Classifiers, Google Vertex AI

## RELEVANT TECHNICAL KNOWLEDGE

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**Data Structures & Algorithms:** Proficient in arrays, linked lists, trees, graphs, hashmaps, heaps; search algorithms (binary search, DFS, BFS), sorting (merge sort, quick sort), dynamic programming, greedy algorithms

**Object-Oriented Programming:** Strong grasp of OOP principles (encapsulation, inheritance, polymorphism, abstraction), design patterns (Singleton, Factory, Observer, Strategy), SOLID principles

**System Design:** Experience designing scalable distributed systems, database schema design, caching strategies, load balancing, microservices architecture, API design best practices

**Problem Solving:** Actively solving DSA problems on LeetCode/CodeChef maintaining problem-solving skills

## PROFESSIONAL EXPERIENCE

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### Software Development Engineer

July 2023 – Present

Margati ([margati.com](http://margati.com)) – Los Altos, CA, USA (Remote)

*Started as intern while completing B.Tech, converted to full-time upon graduation (June 2025)*

- Designed and built scalable REST APIs using Node.js and MongoDB serving 400+ active users with Redis caching, reducing average API latency by 50% and database load by 35%
- Architected distributed async processing pipelines handling 100,000+ concurrent operations with sub-500ms latency through connection pooling, query optimization, and horizontal scaling
- Load-tested backend systems to validate capacity for 100,000+ concurrent users, implementing performance monitoring and bottleneck resolution strategies ensuring 99.9% uptime
- Built CI/CD pipelines with automated testing increasing code coverage from 0% to 60%, reducing production bugs by 75% and deployment time by 80%
- Owned end-to-end feature development across frontend (Flutter) and backend (Node.js/Python), collaborating with cross-functional teams across US-India time zones for rapid delivery
- Optimized system performance reducing cold-start time by 57% (4.2s → 1.8s) through lazy loading, code-splitting, and modular architecture design
- Collaborated on AI platform integrating Google Vertex AI with token streaming, building real-time processing systems handling 20 parallel operations
- Built production Flutter application from scratch serving 400+ users across Android, iOS, and Web with offline-first architecture using SQLite/Hive caching for low-connectivity environments

- Architected clean BLoC pattern with multi-bloc system separating business logic from UI; reduced frame rendering time by 40% through widget optimization and efficient state management

## Full Stack Developer

*October 2022 – February 2023*

### Corporate & Industry Relations, Amrita University – Amritapuri, Kerala

- Architected internship portal backend with Node.js and MongoDB serving 3,000+ students and 200+ companies with JWT authentication and role-based access control (RBAC)
- Built automated workflow processing 500+ documents monthly with PDF generation system, eliminating manual errors and reducing processing time by 60%
- Designed RESTful APIs handling complex business logic for multi-stakeholder platform (students, companies, administrators)

## KEY PROJECTS

### Backend Developer – Hospital IT Inventory Management System

*Dec 2022 – June 2023*

[github.com/rishuriya/IMS](https://github.com/rishuriya/IMS)

- Built Django REST API backend for real-time inventory tracking system managing IT assets across hospital departments – directly relevant to supply chain and warehouse management challenges
- Designed and optimized PostgreSQL database schema with complex relationships; reduced query response time by 69% (800ms → 250ms) through indexing, query optimization, and Redis caching layer
- Implemented automated low-stock alert system with threshold-based notifications improving supply chain efficiency by 40% and preventing stockouts
- Built role-based authentication system (RBAC) for department heads, IT staff, and administrators with hierarchical access control
- Developed custom analytics dashboard with Chart.js displaying real-time inventory metrics, utilization trends, and predictive insights for procurement planning
- Deployed using Docker with CI/CD pipeline enabling automated testing and zero-downtime deployments

### Lead Developer – Event Management Platform for VIDYUT Fest

*2023*

[github.com/rishuriya/Foss-Feud-organizer](https://github.com/rishuriya/Foss-Feud-organizer)

- Architected and deployed real-time event management system serving 500+ participants in 48 hours under tight deadline – demonstrating rapid prototyping and delivery under pressure
- Built scalable backend with Django REST API handling thousands of concurrent QR scans, score updates, and real-time leaderboard synchronization with zero downtime
- Implemented automated tournament logic with point deduction algorithms, winner selection, and prize distribution eliminating 90% of manual tracking overhead
- Integrated WebSocket for live leaderboard updates ensuring sub-second latency across all connected clients
- Developed native Android app with Kotlin/MVVM architecture for organizers and participants

### Creator – Noiser: Environmental Monitoring Platform

*Sept 2024 – June 2025*

[noiser-u6n9.onrender.com](https://noiser-u6n9.onrender.com) — [github.com/rishuriya/vad\\_pi](https://github.com/rishuriya/vad_pi)

- Architected privacy-first IoT platform with FastAPI backend processing real-time sensor data from distributed monitoring stations; trained custom SVM classifier on 16,000+ samples achieving 92% accuracy
- Designed edge computing architecture where audio processing occurs client-side with only metadata (dB, location, timestamp) transmitted to server – relevant for distributed warehouse/logistics systems
- Built real-time geospatial visualization with MongoDB and WebSocket enabling live heatmap updates across multiple monitoring nodes
- Developed \$35 Raspberry Pi solution with public REST API enabling community deployment – demonstrates cost-conscious engineering for scale

### Open Source Contributor – ListenBrainz Android (MetaBrainz)

*2022 – 2024*

[github.com/metabrainz/listenbrainz-android](https://github.com/metabrainz/listenbrainz-android)

- Contributed to music tracking app (5,000+ downloads); architected offline-first queueing system with Kotlin Coroutines and Room Database ensuring data persistence
- Collaborated with international team on code reviews, architectural decisions, and feature planning demonstrating remote collaboration skills

## EDUCATION

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**Amrita Vishwa Vidyapeetham** – Amritapuri, Kerala

*2021 – 2025*

B.Tech in Electrical & Electronics Engineering | CGPA: 8.11/10.0 (Graduated with Distinction)

*Relevant Coursework:* Data Structures & Algorithms, Object-Oriented Programming, Database Management Systems, Operating Systems

## LEADERSHIP & COLLABORATION

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**Technical Mentor & Core Member, amFOSS (Amrita FOSS Club)**

*2022 – 2025*

- Mentored 30+ students in software engineering and system design; organized hackathons for 200+ participants demonstrating leadership and knowledge-sharing abilities
- Featured speaker at Hacktoberfest 2023 presenting on scalable backend architecture

**Backend Developer (Volunteer), Student Social Responsibility**

*Sept 2023 – Feb 2024*

- Built Flask-based platform for Vedic Knowledge repository; developed NLP-powered recommendation system connecting users with relevant content based on contextual understanding

## ACHIEVEMENTS

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- Finalist – NASA Space Apps Challenge 2022, Smart India Hackathon 2022, Wikimedia Hackathon 2023