

SUNNI KUMAR

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SUMMARY

Backend / GenAI Engineer with production experience at FreshMenu, pursuing B.S. in Data Science at IIT Madras. Building scalable backend systems (FastAPI, Spring Boot) and production-grade AI solutions (RAG pipelines, LLM integrations). Focused on high-performance APIs, event-driven architectures, and intelligent automation systems. Strong foundation in data structures, algorithms, and machine learning with hands-on experience in full-stack development.

EXPERIENCE

FRESHMENU

Software Developer

Bengaluru, Karnataka

(Mar 2024 – Present)

Backend Engineering & API Development

- Built **high-performance REST APIs** for core ordering platform using Java, Spring Boot, and SQL databases; handling thousands of concurrent requests daily.
- Designed and implemented robust API endpoints with proper request validation, response formatting, and comprehensive error handling mechanisms.
- Ensured high availability and sub-second response times during peak order volumes with load balancing and caching strategies.
- Implemented logging, monitoring, and alerting systems for production observability using structured logging and metrics collection.

ONDC Partner Integrations

- Architected and deployed critical partner integrations with **Magicpin** and **Bitsila ONDC** networks for expanded order channels.
- Implemented secure OAuth 2.0 authentication flows, webhook handlers, and cryptographic signature verification for partner APIs.
- Built event-driven order synchronization system with **sub-200ms latency**; implemented retry logic, circuit breakers, and failure recovery.
- Developed comprehensive integration testing suites to validate partner API contracts and data consistency across systems.

Automation & Data Engineering

- Developed **automated financial reconciliation pipelines** to cross-verify multi-source transaction data from payment gateways and partners.
- Eliminated **15+ hours/week** of manual audits with near-zero discrepancies and improved financial data accuracy significantly.
- Built data validation and alerting systems for detecting anomalies in transaction records and triggering automated notifications.
- Created automated reporting dashboards for finance team to track reconciliation status and exception handling workflows.

Technologies: Java, Spring Boot, PostgreSQL, SQL, REST APIs, OAuth 2.0, Webhooks, Docker, Git, Linux, Redis

FRESHMENU

Software Developer Intern

Bengaluru, Karnataka

(Sep 2023 – Mar 2024)

- Developed backend modules for order management system using Java and Spring Boot framework; contributed to core platform features.
- Implemented RESTful API endpoints with comprehensive request validation, error handling, and Swagger API documentation for consumers.
- Wrote extensive unit and integration tests using JUnit and Mockito; achieved high code coverage across critical business logic modules.
- Collaborated on database schema design, SQL query optimization, and indexing strategies for PostgreSQL databases.
- Participated in code reviews, agile sprint ceremonies, and technical documentation efforts; contributed to team knowledge base.
- Gained hands-on experience with production deployments, debugging, and incident response in a fast-paced startup environment.

Technologies: Java, Spring Boot, PostgreSQL, JUnit, Mockito, Swagger, Git, Linux, Docker

PROJECTS

AI AGENT FOR ACADEMIC GUIDANCE

Jan 2025 – Present

- Engineered full-stack **RAG (Retrieval-Augmented Generation) pipeline** for intelligent document search and context-aware question answering.
- Built FastAPI backend with **JWT authentication**, role-based access control, and rate limiting for secure API access.
- Implemented vector similarity search using pgvector extension with configurable retrieval thresholds and reranking strategies.
- Developed document chunking strategies, embedding generation with OpenAI APIs, and optimized semantic retrieval for accuracy.
- Created Vue 3 frontend with responsive design, real-time chat interface, and document upload functionality.
- Deployed production infrastructure on **AWS EC2** with Nginx reverse proxy, SSL certificates, and automated CI/CD pipelines via GitHub Actions.

Technologies: Python, FastAPI, LangChain, pgvector, PostgreSQL, OpenAI API, Vue.js 3, AWS EC2, Vercel, Docker, Nginx

SPATIO-TEMPORAL CRIME PREDICTION

Jan 2025 – Mar 2025

- Developed **multi-class classification model** using XGBoost to predict crime categories by analyzing complex spatio-temporal patterns.
- Performed comprehensive **exploratory data analysis (EDA)** on high-dimensional datasets with 800K+ crime records across multiple years.
- Engineered advanced features including time-based (hour, day, month, seasonality), location-based (district, beat, ward), and cyclical encodings.
- Implemented k-fold cross-validation, hyperparameter tuning with GridSearchCV, and comprehensive model evaluation with precision, recall, and F1.
- Created interactive visualizations using Matplotlib and Seaborn to communicate insights on crime hotspots and temporal patterns.

Technologies: Python, XGBoost, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, Jupyter Notebooks

PERSONAL PORTFOLIO WEBSITE

Dec 2024

- Designed and developed a modern portfolio website with NeoBrutalism design aesthetic and responsive layouts.
- Implemented smooth animations, interactive components, and optimized performance for fast loading times.
- Deployed on multiple hosting platforms with automated build and deployment workflows.

Technologies: HTML5, CSS3, JavaScript, Responsive Design, Git, Vercel

EDUCATION

INDIAN INSTITUTE OF TECHNOLOGY MADRAS

Chennai

B.S. in Data Science and Applications

(May 2022 – Apr 2026)

Coursework: Machine Learning, Deep Learning, Database Systems, Data Structures & Algorithms, Probability & Statistics, Linear Algebra, Python Programming, Business Data Management

MASAI SCHOOL

Full Stack Development

Intensive Backend-Focused Program (9-9-6 Curriculum)

Rigorous practical full-stack training with focus on **Java, Spring Boot, and MySQL**. Solved **1200+ DSA problems** across platforms. 12 hrs/day, 6 days/week immersive learning with real-world project experience, code reviews, and industry-standard development practices.

TECHNICAL SKILLS

Languages: Python, Java, SQL, JavaScript, TypeScript, HTML, CSS

GenAI & ML: LangChain, RAG Pipelines, pgvector, OpenAI API, Hugging Face, PyTorch, XGBoost, Scikit-learn, Pandas, NumPy

Backend & Frameworks: Spring Boot, FastAPI, Node.js, Express.js, REST APIs, GraphQL, OAuth 2.0, JWT

Databases: PostgreSQL, MySQL, MongoDB, Redis, Vector Databases (pgvector)

DevOps & Cloud: Docker, Git, GitHub Actions, AWS (EC2, S3, RDS), Linux, Nginx, CI/CD Pipelines

Tools & Practices: Swagger, Postman, JUnit, Mockito, Agile/Scrum, Code Reviews, Technical Documentation