

# Varun K S

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## Summary

Python developer with full-stack experience spanning backend engineering and AI/LLM application development. Built production systems including an LLM-powered diary platform with RAG-based semantic retrieval, a PyPI-published open-source DSA toolkit, and a PostgreSQL-backed multi-role placement platform. Proficient in FastAPI/Flask REST API design, OpenAI API integration, prompt engineering, and database architecture, with hands-on experience leading agile engineering teams through CI/CD-driven deployment.

## Technical Skills

**Languages:** Python (OOP, AsyncIO, Type Hints), SQL, TypeScript, C/C++ (STL, OOP)

**AI & LLM:** OpenAI API, LLM Integration, Prompt Engineering, RAG, Semantic Search, Text Embeddings, Conversational AI

**Backend & APIs:** FastAPI, Flask, Uvicorn, REST API Design, Pydantic, OpenAPI/Swagger, JWT, OAuth2, RBAC

**Databases & DevOps:** PostgreSQL, SQLAlchemy ORM, Redis, Docker, Git/GitHub, GitHub Actions, CI/CD, Railway, Linux

## Experience

### Genesis Training and Consulting Service Pvt Ltd

Feb 2026 – May 2026

Lead Software Engineering Intern | Bengaluru, India

- Led an 11-member cross-functional team building RecommendMe, an AI-first conversational recommendation platform; architected the REST API structure with async endpoints and the Python-based AI pipeline for conversational product discovery
- Containerized the platform with Docker, served endpoints via Uvicorn, and deployed on Railway, then standardized CI/CD pipelines via GitHub Actions for the full team
- Defined API contracts with frontend developers, established Git/GitHub pull request workflows, and coordinated Spiral SDLC sprint planning and release cycles across an 11-person team

*Technologies:* Python, FastAPI, OpenAI API, Docker, Uvicorn, Railway, Git/GitHub, GitHub Actions

## Projects

### Smara AI — LLM-Powered AI Diary Platform

Python, Flask, OpenAI API, RAG, JWT

- Built an LLM-powered diary application enabling natural language querying over journal entries, integrating the OpenAI API for context-aware responses and prompt-engineered retrieval workflows
- Engineered an embeddings-based semantic retrieval layer for RAG-style search and a secure Flask REST API with JWT authentication, encrypted local storage, and modular endpoints

### Campus Placement Management System

FastAPI, React, TypeScript, PostgreSQL, RBAC

- Engineered a centralized placement platform with normalized PostgreSQL schemas (20+ tables) via SQLAlchemy ORM, JWT authentication, and role-scoped RBAC, paired with a React/TypeScript frontend and real-time analytics dashboards

### AlgoNest — Open-Source Python DSA Toolkit (PyPI)

Python, PyPI, pytest

- Published a Python package on PyPI spanning 14 algorithm domains — search, sort, graphs, DP, heaps, and greedy — with 50+ typed primitives, installable via `pip install algonest`, backed by pytest suites

### MediaCleaner — Python Media Deduplication Engine

Python, OpenCV, Perceptual Hashing

- Optimized a perceptual hashing-based detection engine using OpenCV to identify duplicate and corrupted media at scale, packaged as a cross-platform application and commercially released on Gumroad

## Education

B.E., Computer Science and Engineering — JSS Academy of Technical Education, Bengaluru

2026

## Certifications

100 Days of Code: Python Pro Bootcamp, Udemy | Meta Database Engineer Professional Certificate, Coursera | Mastering Data Structures & Algorithms in C/C++, Udemy

## Leadership & Achievements

Social Services Coordinator, National Service Scheme, JSS Academy (2023–2025) — led community teaching, sustainability, and health-awareness initiatives | 3rd Place, "Bug Busters" Debugging Competition, JSS Academy