

Anirudh Pratap Singh

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PROFESSIONAL SUMMARY

Results-driven Software Engineer with 3 years of hands-on experience at Orange Business Services, leading the development of robust backend systems and scalable RESTful APIs using Python, Django, FastAPI, and MySQL. Adept at integrating intelligent chatbot solutions powered by Rasa NLP, Generative AI, and Large Language Models (LLMs), including custom-trained models tailored to business needs. Proven track record of delivering high-performance applications with clean, maintainable code and seamless frontend integration.

TECH SKILLS

Languages & Frameworks	Python, Django, FastAPI, JavaScript, Node.js, React, Rasa
Core Concepts	Object-Oriented Programming (OOP), Data Structures & Algorithms, Operating Systems, Linux, Generative AI, Natural Language Processing (NLP), RAG, Elastic Search
Databases	MySQL, PostgreSQL
Libraries & Tools (Python)	NumPy, Pandas, Celery, Redis
Tools & Platforms	Git, Kafka, Postman, VS Code, PyCharm, Jira, PuTTY, DBeaver

WORK EXPERIENCE

Software Developer at Orange Business Services (Gurugram, India)

August 2022 – Present

Job Responsibilities:

- Designed and developed conversational AI assistants using Retrieval-Augmented Generation (RAG) pipelines, integrating LLM-powered solutions fine-tuned on domain-specific datasets, with optimized embedding storage in vector databases for high-accuracy, context-aware responses.
- Built a full-featured mailing application using Postfix for email reception, enabling mailing list management, recipient tracking (opens/clicks), and a drag-and-drop email template builder. Integrated Generative AI modules to allow users to generate email content using simple prompts, streamlining content creation with AI-assisted suggestions.
- Developed and maintained RESTful APIs optimized for large data responses, ensuring high performance, scalability, and minimal latency under heavy loads.
- Developed background scheduling workflows for high-volume database operations, automating daily data refresh cycles to maintain accuracy, consistency, and up-to-date information across critical data tables.

PROJECTS:

Masterchat – Centralized Chatbot Management Platform: (Skills: Python, REST APIs, MySQL, LangChain, RAG, Elasticsearch, NLP, Sentiment Analysis, Vector Databases)

Description:

Developed advanced Conversational AI assistants by implementing RAG pipelines to retrieve contextually relevant information from trained domain-specific datasets. Created vector embeddings using NLP models, stored them in a vector database and integrated Large Language Models (LLMs) to generate accurate, context-aware responses.

Key Contributions:

- Implemented RAG pipelines leveraging transformer-based embedding models (e.g., SentenceTransformers, OpenAI embeddings) to generate high-dimensional vector representations of domain-specific datasets, ensuring users receive context-rich and highly relevant answers.
- Integrated LangChain to orchestrate retrieval, context injection, and LLM-powered response generation, enabling factually accurate, domain-aware conversational flows that improved user trust and engagement.
- Designed and implemented vector store architectures using ChromaDB with similarity search algorithms for real-time retrieval of relevant context.
- Deployed Elasticsearch integration to store and index embeddings, enabling hybrid search (semantic + keyword) for fast and precise retrieval even in large datasets.
- Built sentiment analysis pipelines using transformer-based NLP models to track user feedback, automatically log sentiment scores to the database, and prioritize low-scoring interactions for retraining datasets.

Maildeck – Mailing Platform with AI-Assisted Content Creation (Skills: Python, Django, REST APIs, MySQL, JavaScript, Ajax, Gen AI)

Description:

Maildeck is a full-featured mailing platform built with Python and Django, designed to help users create, schedule, and monitor bulk email campaigns. The application includes a visual template editor, integrated analytics, and a Generative AI utility that assists users in crafting email content from subject prompts, offering editable content suggestions tailored to campaign goals.

Key Contributions:

- Developed a drag-and-drop email template builder, enabling users to design responsive, custom email layouts without coding.
- Built functionality for distribution list management and segmentation, allowing precise targeting of recipients.
- Integrated Generative AI modules to auto-generate email content based on subject lines; users can review and select from suggested drafts, streamlining content creation.
- Implemented campaign scheduling using background tasks for automated, time-based email dispatch at scale.
- Created RESTful APIs to support seamless interaction between the user interface and backend systems.
- Utilized MySQL for managing campaign data, recipient activity, segmentation logic, and logging analytics.
- Developed reporting features to track delivery rates, opens, clicks, and failures, providing actionable insights via visual dashboards.

LoadGuard – Real-time Request Throttling and Load Management (Skills: Django, Redis, PostgreSQL, Kafka, Celery, REST APIs, Docker)

Description:

Designed a backend system that prevents application overload and ensures smooth scalability by monitoring incoming requests, throttling excessive traffic, and managing workload distribution in real time. This helps avoid server crashes and database bottlenecks under high load

Key Contributions:

- Implemented rule-based throttling to limit the number of requests per user/IP within a set timeframe.
- Used Redis for rate-limiting and caching request counts with expiry, enabling fast checks without database hits.
- Integrated Kafka to queue and buffer incoming requests during traffic spikes, smoothing the load on backend services.
- Built asynchronous workers (using Celery) to process requests from Kafka queues efficiently without blocking frontends.
- Monitored system throughput and latency, triggering alerts when thresholds are approached or breached.
- Designed REST APIs for real-time stats on request volumes, throttling events, and system health.
- Ensured data consistency and performance by optimizing database queries and connection pooling.

EDUCATION

Chitkara University Institute of Engineering and Technology

2019 - 2023

Bachelor of Engineering in Computer Science

CGPA: 9.57

ACHIEVEMENTS

- **Change Maker Award:** Recognized for driving impactful change through innovative solutions and consistently contributing to the company's mission to deliver excellence and positive outcomes for clients and stakeholders.
- **Flash Award:** Honored with the Flash Award for exceptional performance and dedication, demonstrating leadership, agility, and a commitment to delivering outstanding results under tight deadlines.