Kapil Sharma

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Summary

Backend Engineer with **4.5+ years of experience** building scalable microservices and event-driven systems in production environments. Strong expertise in **Python, Django, and FastAPI**, with hands-on experience designing and deploying systems on **AWS**. Experienced in production-grade **GenAI/LLM integrations** for workflow automation and decision support. Focused on system design and performance optimization.

Technical Skills

Languages: Python (Advanced), SQL, JavaScript
Backend Frameworks: FastAPI, Django Rest Framework (DRF), Celery, Microservices Architecture
Cloud & DevOps: AWS (Lambda, ECS Fargate, SQS, CloudWatch, EC2, SES), Docker, CI/CD (GitHub Actions), Terraform
Databases & Caching: PostgreSQL, DynamoDB, MongoDB, Redis, MySQL
AI & LLM Engineering: LangChain, OpenAI API, Multi-Agent Systems, Vector Embeddings
Protocols & Tools: REST, WebSocket, MQTT, WebRTC, RabbitMQ, Git, Linux, Postman

Work Experience

Tiger Analytics — Oct 2024 – Present

Senior Application Engineer — *Remote/Hybrid*

- Designed and owned an event-driven email delivery workflow using **AWS EventBridge** and **Amazon SES**, triggered every 15 minutes to process incremental claim updates and reliably deliver **approx. 40,000 emails per day**.
- Contributed to requirement gathering and technical design discussions with clients and internal stakeholders, translating business needs into scalable backend solutions and delivery plans.
- Designed, developed, and maintained FastAPI-based microservices supporting high-throughput claim processing in a production environment.
- Applied Test-Driven Development (TDD) practices by writing unit and integration tests, achieving **90%+** code coverage and significantly reducing regression defects.
- Contributed to the design and optimization of **PostgreSQL** schemas and **DynamoDB** data models to efficiently manage rule metadata, claim evidence, and audit logs.
- Built and operated event-driven backend workflows using **AWS Lambda** and **SQS**, and integrated cloud-native services on AWS including **ECS Fargate**, **CloudWatch**, and **EC2** to improve scalability, observability, and operational stability.
- Integrated LLM-based decision-support components using structured prompts and retrieval-augmented context to assist complex claim validation and decisioning workflows within the auto-adjudication pipeline.
- Reviewed code contributions from team members, contributed to **CI/CD pipelines** and **infrastructure-as-code** initiatives, and collaborated with cross-functional teams to define API contracts, test plans, and delivery milestones.

VVDN Technologies — Jan 2021 – Oct 2024

Software Engineer — *Gurugram, India*

- Designed, developed, and maintained REST APIs using Django Rest Framework (DRF), supporting high-volume client traffic and ensuring high availability in production environments.
- Improved API performance by refactoring legacy backend components and optimizing SQL queries, resulting in a **15-17%** increase in throughput and reduced response latency.
- Contributed to backend development for **Inseego**'s cloud-native SDWAN platform, supporting configuration management and orchestration for thousands of edge devices using Python, **PostgreSQL**, and **MongoDB**.
- Developed real-time IoT automation integrations for **NXP Home Assistant** using **MQTT**, and implemented **WebRTC** signaling logic to support low-latency video streaming dashboards.
- Collaborated with global engineering teams at **NXP** to identify, debug, and resolve production issues, improving system reliability and service availability.
- Played a key role in the development of an internal HR chatbot using **OpenAI APIs** and **Retrieval-Augmented Generation (RAG)** to answer HR and company policy-related queries from internal documentation, while mentoring junior engineers and contributing to code reviews and API documentation standards.

Education

Dr. A.P.J. Abdul Kalam Technical University, Lucknow — 2017 - 2021

B.Tech in Computer Science & Engineering — *Percentage: 83.6*