MIHIR UMESHKUMAR PATEL

Lead/Senior Software Engineer

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Profile Summary:

Results-driven Senior Software Engineer with 7+ years of experience in backend development, microservices, data engineering, and AI-driven solutions. Expert in designing scalable architectures, optimizing system performance, and leading cross-functional teams to deliver enterprise-grade applications. Proven success in building ETL pipelines, real-time streaming systems, and cloud-native platforms using Python, Kafka, Airflow, and Kubernetes (EKS/ECS). Adept at leveraging LLMs and RAG pipelines to integrate AI into enterprise workflows, accelerating automation and decision-making. Recognized for translating complex technical challenges into high-impact business outcomes, improving scalability, reducing costs, and driving innovation.

Technical Skills:

Programming: Python, JavaScript, TypeScript, SQL, Go
Frameworks: FastAPI, Flask, Django, React, Next.js
Databases: PostgreSQL, MongoDB, Elasticsearch, Redis, SQL Server
DevOps: Docker, Kubernetes (EKS/ECS), Jenkins, GitHub Actions, OpenShift, AWS
Data Engineering: Kafka, Airflow, AWS S3, ETL Pipelines, AWS Glue
Network Tools: Grafana, Dynatrace, Netbrain, Extrahop, Corvil
Communication: Webhooks, WebSocket, REST APIs, GraphQL, gRPC
GenAI: LLMs (OpenAI models, Claude models, Meta models, open source models), RAG, Fine Tuning, Function Calling, LangChain, LangGraph, n8n, MCP servers/clients/hosts, AI Agents
Others: Shell scripting, CI/CD pipelines

Professional Experience:

Senior Developer
RBC | August 2024 – Present

- Led development of a Data Platform MVP, building ETL pipelines to extract and transform metrics from Grafana, PostgreSQL, Elasticsearch, and Dynatrace.
- Built Kafka + Airflow pipelines to automate ingestion and deliver analytics-ready data in AWS S3, cutting manual data prep by 40%.
- Designed microservices with FastAPI and deployed on EKS, enabling horizontal scaling and reducing downtime.
- Developed real-time event-driven systems with Webhooks/WebSocket, improving system responsiveness by 30%.
- Integrated Grafana dashboards for proactive monitoring, reducing incident detection time by 25%.

- Researched and implemented data governance tools (AWS Glue Data Catalog, Lake Formation) to improve compliance.
- Influenced architecture decisions, mentored developers, and enforced coding best practices through reviews.

Software Engineer
RBC | June 2023 – May 2024

- Refactored a monolithic chatbot into 3 Kafka-driven microservices, boosting scalability and reducing latency by 35%.
- Integrated NLP models to automate chatbot responses, reducing manual intervention by 50% and improving response accuracy.
- Built RAG pipeline using LangChain + Hugging Face, merging LLM knowledge with enterprise data for faster troubleshooting.
- Deployed Dockerized services on Kubernetes, ensuring high availability with automated scaling.
- Implemented caching with MongoDB, reducing redundant queries and lowering infra costs by 20%.
- Automated deployments with Kubernetes CI/CD, reducing release cycle times from days to hours.

Senior Python Developer
CPPIB | July 2022 – May 2023

- Developed capital markets backend systems using Flask, Django, SQLAlchemy, improving transaction processing speed by 25%.
- Designed REST APIs & middleware services integrated across trading systems.
- Migrated databases to AWS Data Fabric, using Boto3 to optimize data access and cut query times by 30%.
- Automated workflows via Python + JAMS, reducing manual reporting by 10 hours weekly.
- Deployed and scaled apps on AWS ECS/EC2 + Kubernetes, ensuring 99.9% uptime.
- Streamlined CI/CD with Docker + Kubernetes, cutting deployment failures by 40%.

Full Stack Developer
CGI | March 2021 – July 2022

- Automated workflows with Python & Shell scripting, reducing manual tasks by 35%.
- Designed CDC scripts for incremental data capture in relational databases.
- Implemented Terraform IaC for infra provisioning, improving release repeatability and reducing misconfigurations.
- Built dashboards with React + Python, enabling real-time visualization of business KPIs.
- Automated AWS Glue ETL jobs with Lambda + Step Functions, improving pipeline reliability.
- Deployed and orchestrated microservices on Kubernetes, integrated with CI/CD pipelines.

Python Developer

Kroger | August 2019 – February 2021

- Built PyQt-based modules for managing patient data, improving UI-driven workflows.
- Developed Cassandra and CouchDB integrations, enhancing data security and scalability.
- Automated AWS infra using CloudFormation + shell scripts, cutting provisioning time by 50%.
- Built CI/CD pipelines in Jenkins, automating tests and deployments, reducing release errors by 30%.

Key Projects:

AI-Driven Multi-Agent Workflow Platform for Network Operations

- Engineered a multi-agent architecture with LangGraph, where a supervisor agent orchestrates domain-specific sub-agents to handle monitoring, troubleshooting, and automation tasks.
- Developed an agentic workflow pipeline that enabled dynamic tool invocation and intelligent decision-making, reducing manual troubleshooting time by 40%.
- Automated repetitive network operations through AI-driven workflows, improving operational efficiency and reducing human error.
- Delivered a scalable full-stack chatbot solution (FastAPI, Kafka, MongoDB, React, TypeScript) that streamlined collaboration across teams and accelerated issue resolution.

Network Topology Mapping and Visibility Platform

- Built a network topology platform to provide real-time visibility of device interconnections, enabling teams to predict impact zones and mitigate risks during change management and troubleshooting.
- Designed Airflow DAGs to schedule daily data collection from multiple enterprise sources, ensuring up-to-date visibility into network device states.
- Developed a progressive data collection and mapping workflow (device-by-device ingestion and mapping) to avoid heavy data loads, improving pipeline efficiency and system performance.
- Integrated Neo4j graph database for storing and visualizing device relationships, empowering operations teams to quickly identify dependency chains and potential points of failure.
- Improved incident resolution speed and enhanced proactive change verification, reducing downtime risks and operational costs.

Enterprise Data Platform MVP

- Architected and delivered a scalable data platform to empower enterprises with faster, data-driven decision-making.
- Designed and implemented ETL pipelines using Kafka and Airflow to extract and transform metrics from Postgres Enterprise Management, Grafana, and Dynatrace, storing results in AWS S3 for downstream analytics.
- Built real-time monitoring and visualization dashboards in Grafana, reducing data access latency by 35% and enabling proactive system insights.

- Improved data reliability and operational visibility, allowing stakeholders to identify anomalies faster and optimize infrastructure performance.

Real-Time Chat Bot System with LLM Retrieval Augmented Generation feature

- Developed a real-time chatbot platform to streamline daily network operations such as executing multi-command SSH tasks, validating system upgrades, and searching devices across tools like Extrahop, MyOps, DataWarehouse, NetBrain, and Cisco ACI.
- Refactored a monolithic architecture into modular microservices, introducing Kafka-based event-driven communication to enhance scalability and system reliability.
- Implemented MongoDB caching to avoid redundant processing and event triggers, cutting operational costs by reducing repeated queries and resource usage.
- Integrated WebSocket-based notifications across platforms (Webex, Slack), enabling faster updates and improved collaboration during live network changes.
- Delivered a robust automation framework that reduced manual troubleshooting efforts, accelerated change validation, and improved operational efficiency for network teams.

Education:

Postgraduate Diploma
Sheridan College | September 2017 – September 2019

Bachelor of Technology in Electronics Engineering
Gujarat Technological University | May 2011 – June 2015

Certifications:

- AWS Certified Solutions Architect – Associate
- Certified Kubernetes Administrator (CKA)
- Advanced Python Programming (Coursera)
- AWS Cloud Practitioner (CLF-C02)
- Elasticsearch Engineer