PRATIK INGALE

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SUMMARY

Python Backend Engineer with **3+ years of experience** designing **REST APIs**, building **multithreaded workflow orchestration systems**, and developing reliable backend automation in **cloud-native environments**. Skilled in **Python**, **Flask**, **SQLAlchemy**, **state-machine design**, and **modular backend architecture**. Strong track record in building **reusable Python libraries**, implementing **event-driven execution flows**, and improving system reliability across **distributed platforms**. Hands-on experience integrating backend services with **Kubernetes-based deployments** and **CI/CD workflows**

PROJECTS

Async Workflow Orchestrator (Python Backend)

- Designed a production-style **asynchronous workflow orchestration engine** in Python using **asyncio**, **thread-based workers**, and **state-machine-driven execution**
- Built **REST APIs** with **FastAPI** to trigger workflows, track execution state, manage retries, and expose transition history
- Implemented **persistent workflow state** and **audit logging** using **SQLAlchemy** with **SQLite/PostgreSQL** support

TECHNICAL SKILLS

Languages & Backend: Python, Flask, FastAPI, SQL, Bash
Python Ecosystem: SQLAlchemy, AsyncIO, Alembic, Transitions, Pydantic, Pytest
Database: PostgreSQL, SQLite, Schema Design, Data Modeling
DevOps & Cloud: Kubernetes (AKS, EKS, GKE, OCP, TKG), Helm, Docker, GitLab CI, Jenkins, Ansible, Git, Gerrit
Observability & Infrastructure: Prometheus, Grafana, Linux

PROFESSIONAL EXPERIENCE

NOKIA SOLUTIONS NETWORKS Bengaluru, KA
Senior Software Engineer July 2024 – Present

- **Re-architected a monolithic workflow engine** into a **modular**, **Python orchestrator** using **event-driven state machines** and **worker queues**; enabled **parallel execution across 5 sub-state machines** (5–7 states each), improving **scalability** and **fault isolation**
- Designed and deployed **6–10 Flask-based REST API** endpoints for orchestration triggers, cleanup workflows, CRUD operations, and Jenkins automation; integrated with **PostgreSQL** and internal state stores, **reducing manual ops effort** and improving **reliability**
- **Recognized for Python engineering leadership**, creating **reusable automation libraries** and driving **code standardization** adopted across multiple teams
- Developed a **master–worker Python framework** for **parallel image rebuilds**, cutting build time from **8 hours → under 2.5 hours** and significantly accelerating release cycles
- Defined **code-quality guidelines** and standardized **Python best practices**, improving **maintainability** and **onboarding efficiency** across the engineering group
- Automated **Helm chart** and **registry synchronization workflows** in Python, reducing configuration time from **1 week → under 7 hours** and eliminating recurring configuration defects
- Implemented **unit testing from scratch using Pytest** and improved overall **test coverage by 33%,** while **mentoring 3 engineers** in test-first development
- Trusted with high-impact **cross-team workflow** ownership, coordinating **Python-driven** interactions with **JIRA, Jenkins, GitLab, and Gerrit** for production-grade automation
- Integrated backend automation flows with **Prometheus/Grafana dashboards** for environment **metrics and performance** insights

Associate Software Engineer Aug 2022 – June 2024

- Built **Python-based automation modules** powering deployments on Kubernetes, supporting backend workflows for distributed components
- Developed **Python-driven CI/CD modules** for **Kafka and NGINX Ingress certification pipelines**, improving reproducibility and reducing manual intervention
- Designed and implemented a complete **Kafka/MirrorMaker testing framework** (producer/consumer logic, multi-cluster sync, integrity checks) using Python, Radish, and Mako; expanded messaging validation coverage across environments
- Containerized and refactored automation pipelines by replacing SSH with subprocess and **modular Python utilities**, reducing execution time by **50% (18h → 9h)**
- Automated **namespace-scoped kubeconfig generation and RBAC provisioning** with Python + Ansible, speeding developer onboarding and enforcing secure access

- Implemented **service mesh–aware backend testing workflows** (Istio and non-Istio), deepening understanding of traffic rules, routing, and service-to-service communication
- Centralized **X-Ray test uploads using Python-driven Jenkins extensions**, improving traceability and result consistency across pipelines
- Conducted **structured knowledge-transfer sessions on Azure** architecture, DevOps tooling, and platform engineering fundamentals, improving team readiness and accelerating onboarding for new engineers

Student Trainee Jan 2022 – May 2022

- Deployed **distributed systems** (Spark, Kafka, RabbitMQ) on **Kubernetes**, gaining foundational experience in message flows, backend processing, and cluster-level orchestration
- **Configured ingress controllers and routing rules** for backend services on Kubernetes, improving service accessibility and understanding of API communication patterns
- **Assisted with lifecycle operations** for cloud-native services on NCS and OpenShift, contributing to stable and reliable platform environments

EDUCATION

KLE TECHNOLOGICAL UNIVERSITY Hubballi, KA
Bachelor of Engineering in Computer Science and Engineering Aug 2018 – June 2022
Cumulative GPA: **8.52**