

Mohammad Arham

Python Backend Engineer · Data Engineering · Cloud & DevOps

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PROFESSIONAL SUMMARY

Results-driven Python Backend Engineer with 1.5+ years of experience architecting scalable, cloud-native backend systems, high-performance REST APIs, and automated data pipelines. Proficient in Flask, FastAPI, PostgreSQL, AWS (EC2, S3, Lambda, Athena, Redshift), and Apache Airflow. Expertise in microservices architecture, ETL/ELT pipeline development, ERP customization (Odoo), Docker containerization, and CI/CD automation. Track record of reducing database size by 60%, cutting data latency to 15-minute intervals, and improving pipeline observability by 55%. Passionate about clean code, API security, and data-driven engineering.

TECHNICAL SKILLS

Languages: Python, SQL, JavaScript

Frameworks: Flask, FastAPI, Odoo ORM, Django REST Framework, SQLAlchemy, Pydantic

Cloud & DevOps: AWS (EC2, S3, Lambda, SNS, Secrets Manager, Athena, Redshift), Docker, Jenkins, Nginx, Certbot, CI/CD

Databases: PostgreSQL, MySQL, Amazon Redshift, SQLite

Data & Pipelines: Apache Airflow, ETL/ELT Pipelines, Incremental Sync, Data Ingestion, Task Scheduling, AWS Glue

API & Security: REST APIs, JWT, OAuth 2.0, RBAC, Rate Limiting, SSL/TLS, CORS, HTTPS

Architecture: Microservices, System Design, Async APIs, DB Query Optimization, Caching, Distributed Systems, DSA

Tools: Git, GitHub, Linux, Postman, Swagger/OpenAPI, VS Code

WORK EXPERIENCE

Binary Semantics Ltd | Associate Software Developer

Aug 2024 - Present

Full-time · Gurugram, India · Python, Flask, FastAPI, PostgreSQL, Apache Airflow, AWS, Docker, Odoo

- ▶ **Backend & API Development:** Designed and deployed scalable backend services using Flask and FastAPI with PostgreSQL; implemented JWT authentication, RBAC, OAuth 2.0, and API rate limiting to ensure secure, high-performance RESTful endpoints consumed by analytics platforms.
- ▶ **Data Engineering & ETL:** Architected a config-driven, incremental ETL pipeline using Python and Apache Airflow to replicate Odoo PostgreSQL data to Amazon Athena and Redshift; reduced data latency from daily batch loads to near real-time 15-minute intervals, enabling BI dashboard freshness for executive reporting.
- ▶ **Cloud Infrastructure & Optimization:** Migrated binary file storage from PostgreSQL to AWS S3, shrinking database size by ~60% and significantly improving query response times; deployed all services on EC2 behind Nginx with SSL via Certbot and custom domain routing.
- ▶ **ERP Customization (Odoo):** Built and extended Odoo modules using Python ORM; automated background job scheduling with Airflow DAGs and improved ERP workflow reliability, reducing manual intervention and response times for core business processes.
- ▶ **Third-Party & Real-Time Integrations:** Integrated ULIP, PAN, and DL verification APIs for KYC and finance compliance; implemented Google Maps API for real-time FASTag vehicle tracking in the logistics module, improving operational visibility.
- ▶ **DevOps & CI/CD:** Containerized all backend services with Docker; built Jenkins CI/CD pipelines for automated testing and zero-downtime deployments; managed secrets via AWS Secrets Manager; automated database dump workflows via Airflow with AWS SNS failure alerts.

- ▶ **AI & Chatbot Integration:** Integrated a Rasa NLU-powered chatbot with core backend APIs via REST webhooks; mapped user intents to business logic actions, reducing manual support volume and accelerating query resolution time.

PROJECTS

FastAPI Microservice — Real-Time Analytics API

FastAPI · Async Python · Pydantic v2 · PostgreSQL · AWS EC2 · Nginx · Docker

- ▶ Engineered a high-throughput async FastAPI microservice powering real-time analytics dashboards; leveraged Pydantic v2 schema validation, PostgreSQL connection pooling, and optimized indexed queries to achieve sub-50ms p95 response times.
- ▶ Deployed behind Nginx on AWS EC2 with HTTPS and health-check endpoints; reduced average database query time by ~40% through selective indexing and query plan analysis.

Flask JWT Task Management API

Flask · Flask-RESTful · JWT · OAuth 2.0 · PostgreSQL · Swagger/OpenAPI · Docker

- ▶ Built a production-ready RESTful task management API with Flask-RESTful; implemented JWT authentication with refresh-token rotation, RBAC enforcement, and per-route rate limiting.
- ▶ Fully documented with Swagger/OpenAPI; integrated input validation and centralized error-handling middleware for a clean, maintainable codebase containerized with Docker.

Config-Driven ETL Pipeline — Apache Airflow & AWS Athena

Python · Apache Airflow · AWS Athena · Redshift · PostgreSQL · AWS SNS

- ▶ Designed a modular, YAML-config-driven ETL framework with Airflow DAGs supporting incremental sync, full backfill, and automatic schema evolution for upstream Odoo data into AWS Athena and Redshift.
- ▶ Added SLA breach alerting via AWS SNS and Airflow callbacks; improved data-team incident response time by ~60% — pipeline now serves as the primary data source for 3 internal BI dashboards.

EDUCATION

Jamia Hamdard University — B.Tech in Computer Science | 2020 - 2024 | CGPA: 8.26 / 10.0

New Delhi, India · Relevant: Data Structures & Algorithms, Database Management, Operating Systems, Software Engineering, Computer Networks

CORE COMPETENCIES & KEYWORDS

Python · Backend Development · REST API · FastAPI · Flask · Microservices · Cloud Computing · AWS · Docker · CI/CD · Jenkins · DevOps · Data Engineering · ETL Pipeline · Apache Airflow · PostgreSQL · MySQL · Amazon Redshift · Amazon Athena · S3 · EC2 · Lambda · JWT Authentication · OAuth 2.0 · RBAC · API Security · System Design · Database Optimization · Async Python · SQLAlchemy · Pydantic · Odoo ERP · Git · Linux · Nginx · AI Integration · NLP · Distributed Systems · Real-Time Analytics · Agile · Scrum