

Lakshay Malhotra

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SUMMARY

Software engineer with 3+ years at Secure Meters building AI systems end to end: meter anomaly detection and a service knowledge assistant. Strong in .NET, Python, retrieval, evaluation and deployment.

TECHNICAL SKILLS

AI & LLM: RAG Pipelines, Agentic Workflows (LangGraph), Hybrid Search (BM25 + kNN, RRF), Cross-encoder Reranking, Function Calling / Tool Use, LLM Evaluation & Tracing (Langfuse), Local Inference (Ollama)
Applied ML: Time-Series Anomaly Detection, Imbalanced Classification, Feature Engineering, LightGBM, scikit-learn, PyTorch, Model Evaluation (PR-AUC, precision@k), MLflow
Languages: Python, C# / .NET, TypeScript, SQL
Backend & Data: FastAPI, ASP.NET Core, PostgreSQL, TimescaleDB, Neo4j, OpenSearch, Redis
Infrastructure & Web: Docker, Docker Compose, GitHub Actions (CI/CD), Linux, Cloudflare (Pages, Tunnel), Next.js, React, Tailwind CSS

EXPERIENCE

- Software Application Developer** Jan. 2024 – Present
Secure Meters Pvt. Ltd. Gurugram, Haryana
- Engineered the .NET Core service layer for enterprise metering applications: REST APIs, data access and service endpoints over large PostgreSQL datasets, optimized for production load.
 - Built the data ingestion layer for operational systems: automated cross-system pipelines with integrity checks plus React monitoring dashboards, forming the foundation the internal AI platforms below extend.
 - Integrated Python AI services with the .NET platform for the internal AI platforms below, wiring ingestion, scoring APIs and review workflows into production.
- Graduate Software Engineer** Jul. 2023 – Jan. 2024
Secure Meters Pvt. Ltd. Gurugram, Haryana
- Shipped features across .NET Core APIs, React UIs and PostgreSQL queries on live enterprise systems.

PROJECTS

- Meter Anomaly Detection Platform** | .NET 8, Python, LightGBM, TimescaleDB, FastAPI, Docker
- Built the platform on .NET 8 services (data ingestion, scoring API, review dashboard) with a Python AI service (LightGBM plus unsupervised detectors) that flags theft, tampering and faulty meters into a prioritized field-inspection list from behavioural and tamper features.
 - Built the evaluation methodology around alert-budget ranking metrics (precision@k, PR-AUC) on a public electricity-theft benchmark (measured PR-AUC 0.83, precision@k 0.70), plus shadow-mode comparison against existing rule-based flags.
 - Integrated scoring with existing backend services and a case-review dashboard, and established a feedback loop where confirmed and rejected alerts are captured as labels for periodic retraining.
- Service Knowledge Assistant** | .NET 8, Python, LangGraph, OpenSearch, Langfuse, Docker
- Built the assistant as a .NET 8 platform with a Python agent service (LangGraph): ingestion of technical manuals, error-code tables and service history, hybrid OpenSearch retrieval and cross-encoder reranking (recall@10 86%).
 - Implemented an agent flow with streaming answers, inline source citations and confidence-based escalation to human experts; supports both local and hosted model routing.
 - Built the evaluation stack: a 207-question golden set, 84% citation accuracy, and a calibrated LLM-as-judge regression gate in CI, with local inference keeping cost per query at \$0.
- DataPulse: Scalable Analytics Engine** (Internship phase) | .NET Core, PostgreSQL, React
- Built an analytics engine over large volumes of transactional data (3.2M+ rows): data model, indexing and optimized aggregation queries for responsive reporting at scale.
 - Developed reusable aggregation and reporting pipelines that replaced manual data extraction with scheduled, repeatable processing across operational sources.
 - Delivered an interactive React dashboard for transaction trends and usage analysis, with filters and drill-down views for business users.

EDUCATION

- Bachelor of Computer Science** | Chandigarh Group of Colleges, Mohali, Punjab Aug. 2019 – May 2023
Diploma in Computer Science | Chitkara University, Rajpura, Punjab Aug. 2017 – May 2019