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Mohana Nyamanahalli Venkatesha

Lead AI Developer

SUMMARY

Lead ML developer & Data Scientist with an MSc in Data Analytics and 4+ years of specialized experience in secure, decentralized MLOps systems, backed by 3+ years in data engineering/ML roles. Expert in Federated Learning (Flower) and Edge AI (TensorFlow Lite), with a proven track record of deploying privacy-preserving models across 20+ distributed devices. Transforms complex IoT and Big Data into measurable outcomes, including 25% energy efficiency gains and 92% faster MLOps deployment cycles.

KEY SKILLS

Programming & Databases: Python (Expert), SQL, Bash, PostgreSQL, InfluxDB

AI, ML & Privacy: PyTorch, TensorFlow (Lite), Flower (Federated Learning), RAG, GenAI, Scikit-learn, NumPy, Pandas

Big Data & Cloud: Azure (Data Factory, Databricks, Synapse), Open Telekom Cloud (OTC), Snowflake, Spark, Kafka, Hive, Hadoop, MQTT

MLOps, DevOps & IoT: Terraform (IaC), Docker, Kubernetes, Airflow, MLFlow, Jenkins, CI/CD, Git, Agile, Flask, Home Assistant, Jinja2

Monitoring & Visualization: Tableau, Prometheus, Grafana

PROFESSIONAL EXPERIENCE

Lead AI Developer

Jan 2024 - Present

GreenAutarky GmbH

Hildesheim, Germany

- Architected and deployed a production **Federated Learning system** using the **Flower framework** across 20+ distributed **Home Assistant** edge devices, enabling privacy-preserving heating optimization without centralizing sensitive customer data.
- Built production end-to-end **MLOps pipelines** for time-series heating prediction using **TensorFlow Lite**, achieving a **25% improvement in energy efficiency** through predictive schedule optimization on resource-constrained IoT devices.
- Established a **Docker containerization strategy** for Home Assistant addons, ensuring consistent deployment across heterogeneous customer environments while managing strict resource constraints.
- Designed scalable cloud infrastructure on **Open Telekom Cloud (OTC)** using **Terraform (IaC)**, orchestrating **PostgreSQL, InfluxDB, and Redis** to support 20+ concurrent device connections and high-volume data ingestion.
- Developed an automated configuration system using **Jinja2 templates**, accelerating device deployment speed by **92%** (reducing setup time from 4 hours to 20 minutes) per customer installation.
- Reduced system downtime by **40%** by implementing a comprehensive monitoring infrastructure with **Prometheus and Grafana**, enabling alerting and automated malfunction detection for villa heating systems

Data Scientist

Jan 2023 - May 2023

Hays Professional Solutions GmbH (Fixed Contract with Client Clarios Manufacturer)

Hannover, Germany

- Developed and deployed a many-to-one **LSTM architecture** to predict the **Remaining Useful Life (RUL)** of batteries, utilizing time-series sensor data (voltage, temperature, current) to reduce prediction errors by **13%**
- Engineered a **Flask-based Machine Learning API** to automate data labeling for "nonlinear aging" stages, significantly accelerating the training pipeline for battery degradation models.
- Orchestrated **Big Data workflows** on **Azure and Databricks**, integrating unstructured battery sensor data from **Snowflake** to achieve a **40% increase** in analytics application performance and scalability.
- Boosted product quality by **10%** by integrating third-party external data (usage patterns) into the feature engineering pipeline using **PCA and SMOTE**.
- Leveraged **Azure Data Lake and IoT Hub** to process "curves data," enabling real-time detection of battery drains and reducing maintenance downtime by **20%**.
- Collaborated within an **Agile framework** using Git and Azure Cloud to deliver actionable insights that enhanced infrastructure capabilities and overall project success

Data Scientist

Jun 2022 - Aug 2022

Tennispoint (Fixed Project Contract)

Herzebrock, Germany

- Spearheaded a comprehensive data architecture using **Airflow, Spark, and Kafka** on Azure, reducing data latency by 15% and improving accessibility by 20%
- Streamlined **ETL** via SQL stored procedures to boost efficiency by 25% and developed Tableau KPI dashboards to empower decision-making

Software Engineer

Sep 2014 - Dec 2016

Riseon Technologies Pvt Ltd

Bengaluru, India

- Refined full-stack ETL pipelines using **Python and SQL**, automating data transformations for millions of transactions and saving 8 hours of manual reporting per week
- Created advanced Tableau visualizations that boosted customer engagement by 20% through data-driven marketing insights

EDUCATION

Masters in Data Analytics, University Of Hildesheim, Germany

Oct 2023

Bachelor of Engineering in Computer Science, Malnad College of Engineering, India

Jun 2013

INTERNSHIPS

Working Student, apherisAI, Hildesheim	Jan 2021 - Jun 2021
• Achieved 91% accuracy in pain recognition using PyTorch and established secure Federated Learning pipelines, reducing processing time by 20% .	
• Championed MLOps optimization on Azure Databricks , boosting model accuracy by 20%	
Working Student, Mazda Motors, Leverkusen	Sep 2020 - Oct 2020
• Analyzed sales and financial data using Python and SQL , improving ETL performance by 2% and creating interactive Power BI dashboards for cross-departmental KPIs	
Data Scientist & AI Intern, CamelotIT Lab, Mannheim	Apr 2019 - Jul 2019
• Developed time-series forecasting models in Python, achieving a 15% reduction in prediction error and improving inventory accuracy by 5%	
Jooma GmbH, Hannover	Oct 2018 - Feb 2019
• Pioneered an Anomaly Detection Tool for Jenkins, reducing pipeline failures by 60% and saving developers 30% in root-cause analysis time	

PROJECTS

Predictive UX Analytics (Privacy-First) Independent Open-Source Project	Nov 2025 - Present
• Problem: GDPR/TDDDG compliance forces cookie banners that cause a 70% data loss due to user rejection, leaving companies "data-blind" to UX friction	
• Goal: Building a GDPR-exempt analytics engine that recovers lost insights using Federated Learning and Edge-AI without collecting PII or requiring consent banners	
• Outcome:	
◦ Deployed quantized Transformers (Hugging Face) via ONNX for on-device PII redaction. converted behavior into Embeddings stored in Qdrant for private analysis	
◦ LLM Orchestration: Built a RAG pipeline with Haystack/LangChain for automated UX auditin	
◦ Result: 100% visibility into "Rage Clicks" and user friction with Zero PII storage.	

PERSONAL SKILLS

- Communication Skills • Agile Methodologies • Cross functional Collaboration • End-to-end Project Lifecycle

LANGUAGES AND ACTIVITIES

- English(Professional) | German(A2) | Kannada(Native)
- Engaged in extensive traveling to broaden cultural awareness and gain global perspective

ACHIEVEMENTS

- **Lead Organizer, Google Dev Group Hildesheim:** Spearheaded Google Dev Group Hildesheim, leading the organization of 4-5 Google events (Study Jams, DevFests)
- **OpenMined Community Navigator:** Mentored junior data scientists, resulting in improvement in their productivity/skill level
- **Google Community Board AI/ML Moderator:** Implemented new moderation strategies that reduced community disputes by 20%