

MALLIKARJUN AITHA

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PROFESSIONAL SUMMARY

Data professional skilled in LLM development, GIS analysis, cloud ETL pipelines with Spark, ArcGIS, AWS, and Azure. Proven at optimizing workflows and delivering actionable insights through cross-functional collaboration.

TECHNICAL SKILLS: Python, SQL, R, Spark, Kafka, Hadoop, RAG, Fine-Tuning, LangChain, HuggingFace, LLMs, Prompt Engineering, GenAI, Machine Learning, ArcGIS, GeoPandas, Power BI, Tableau, AWS, Azure, GCP, Linux.

CERTIFICATION:

Building LLM Applications With Prompt Engineering - *NVIDIA Deep Learning Institute*

April 2025

PROFESSIONAL EXPERIENCE

Center for Analytics, University of New Haven

Oct 2024 - Present

Research Assistant

West Haven, CT

- Conducted crime analysis for NHPD using ArcGIS, Python, and SQL, leveraging clustering models like DBSCAN and Hot Spot Analysis. Identified high-crime areas and improved resource allocation by 20%.
- Built automated ETL pipelines with Python, AWS Lambda, and PostgreSQL; streamlined NHPD crime data ingestion; integrated predictive models to forecast trends; and reduced manual processing by 15 hours/month.
- Created 10+ interactive dashboards using Power BI and JavaScript (ArcGIS API), visualizing NHPD crime hotspots and time series forecasts with ARIMA and Random Forest models for proactive policing.
- Implemented incremental data pipelines using Python, SQL, and cron jobs to sync daily crime reports from multiple sources, improving data freshness and reliability across analytics platforms by 40%.

Downtown Evening Soup Kitchen Inc.

June 2024 - Dec 2024

Data Analyst Intern

New Haven, CT

- Designed ETL workflows to consolidate donor data, improving accuracy by 30% and operational efficiency.
- Built a predictive analytics pipeline using Python, SQL, and Power BI to forecast donation trends, which helped manage inventory better and reduced food waste by 25%.
- Optimized 5+ Power BI dashboards to track KPIs like meal distribution efficiency and volunteer retention, integrating PantrySoft, SQL, and Python for real-time insights, improving decision-making by 30%.

Cognizant Technology Solutions

Sept 2021 - July 2023

Associate Data Engineer

Hyderabad, India

- Built and automated data pipelines using Python and SQL to process 10M+ user interaction logs across 15+ countries, enabling A/B testing insights that improved campaign CTR by 18%.
 - Developed and deployed 125+ AMEX promotional campaigns using AEM, JSON, React.js, and CI/CD pipelines, automated online enrollment, and reduced offline promotions.
 - Automated data validation, UI updates, and content deployment with Python, Putty, Shell Scripting, Git, Docker, and cloud-based CRM tools, reduced manual effort and streamlined global web rollouts.
 - Managed 200+ service requests for GCS UI Cardshop across 15+ countries, optimized multilingual webpage updates, and leveraged technologies like React.js, AEM, and AWS to improve card product visibility.
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TECHNICAL PROJECTS

RAG-Based Mental Health Q&A System (LangChain, HuggingFace, FAISS)

Developed a Retrieval-Augmented Generation (RAG) system for the mental health domain, comparing Mistral-7B, Meta-Llama, and Falcon-3 models based on perplexity, sentiment consistency, and response quality.

Real-Time Smart City Monitoring (AWS, Spark, Kafka)

Built a streaming pipeline using AWS, Spark, and Kafka to process 10k+ IoT data points/day, reducing latency by 40%. Visualized traffic patterns in Power BI, enabling urban planners to optimize congestion management.

InceptFace (Facenet-pytorch, Gradio)

Developed a facial recognition system using InceptionResNetV1 and MTCNN for detection, with a custom dataset and robust preprocessing, trained using Adam optimizer and Cross Entropy Loss, deployed via Gradio.

EDUCATION

Master of Science in Data Science

August 2023 - May 2025

University of New Haven | GPA: 3.8/4.0

Bachelors in Electronics and Communication Engineering

July 2017 - Sept 2021

Jawaharlal Nehru Technological University Hyderabad