MALLIKARJUN AITHA

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PROFESSIONAL SUMMARY

Data professional with expertise in LLMs, Data Engineering, Data Analysis, GIS spatial analysis, ETL pipelines, and cloud-based data solutions. Proven success in optimizing data workflows and delivering insights through tools like ArcGIS, Spark, and AWS. Adept at collaborating with cross-functional teams to solve complex data challenges.

TECHNICAL SKILLS

Programming: Python, SQL, R, Shell Script

Data Engineering: Spark, Kafka, Hadoop, FAISS

Machine Learning: HuggingFace, LLMs, Embeddings

GIS Tools: ESRI ArcGIS, GeoPandas

Visualization: Power BI, Tableau, Matplotlib

Cloud Platforms: AWS, Azure, Google Colab

PROFESSIONAL EXPERIENCE

Center for Analytics, University of New Haven

Research Assistant — Oct 2024 - Present

- Conducted crime analysis for NHPD using ArcGIS, Python, and SQL, leveraging clustering models like DBSCAN and Hot Spot Analysis (Getis-Ord Gi*). 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.
- Developed 10+ interactive dashboards using ArcGIS Online, Power BI, and JavaScript (ArcGIS API), visualizing NHPD crime hotspots and time series forecasts with ARIMA and Random Forest models for proactive policing.

Downtown Evening Soup Kitchen Inc.

Data Analyst Intern — June 2024 - Dec 2024

- Designed ETL workflows to consolidate donor data, improving accuracy by 30% and operational efficiency.
- Built a predictive analytics pipeline using Python (Pandas, Scikit-learn), 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

Associate Data Engineer — Sept 2021 - July 2023

- 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
- 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

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's in Data Science
University of New Haven | GPA: 3.8/4.0 | May 2025

Bachelor's in Electronics and Communication Engineering
Jawaharlal Nehru Technological University Hyd | Sept 2021

EXTRACURRICULAR ACTIVITIES

Treasurer, Indian Student Council @UNewHaven

Go-Getter Award, UNewHaven

Campus Connector, UNewHaven