Harish Muthyala

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EDUCATION

Master's of Science in Computer Science, *University of Houston*   Aug. 2024 – May 2026
Machine Learning, Generative AI, Advanced Operating Systems   *Houston, TX*

Bachelors in Computer Science, *Vellore Institute of Technology*   Jul. 2018 – Apr 2022
Design of Algorithms, Computer Networks, Artificial Intelligence   *Vellore, India*

TECHNICAL SKILLS

Languages: Python, Java, C/C++, SQL (Postgres, DynamoDB), JavaScript, HTML/CSS, R
Frameworks: Langchain, RAG, MLops, Tensorflow, pandas, Numpy, Agents, React, Node.js, Flask, FastAPI
Cloud: AWS S3, Lambda, Sagemaker, Bedrock, EC2, ECS, VPC, Codepipeline, Quicksight, Azure Foundations
Developer Tools: Git, Docker, Kubernetes, Postman, VS Code, Jupyter
Credentials: AWS Solutions Architect - Associate, Accenture Trailblazer

EXPERIENCE

Generative AI Engineer   May 2023 – July 2024
Senior Analyst, Accenture AWS Business Group (AABG)   *Hyderabad, India*

- Built an OpenSearch-based similarity scoring system with **threshold filtering** to handle irrelevant user queries in a GenAI credit underwriting RAG pipeline.
- Implemented OpenSearch Serverless vector DB to store embeddings generated via **Titan model**, structuring tabular client data from Excel for efficient retrieval.
- Designed few-shot and **example-based prompt templates** tailored to handle complex financial notations, utilizing claude sonnet, enhancing model accuracy by validating with Bedrock Playground.
- Engineered preprocessing pipelines using Pandas for **data cleaning, chunking, and conversion**, enabling robust and scalable ingestion of tabular financial data.

Machine Learning Operations(MLOps) Engineer   Aug. 2022 – Jan. 2024
Application Engineering Analyst, Accenture AWS Business Group (AABG)   *Hyderabad, India*

- Deployed a **SageMaker Autopilot** pipeline in a VPC to automate churn prediction and API-based inference.
- Maintained real-time **model drift** detection using SageMaker Model Monitor Module
- Automated QuickSight **Dashboard migration** across AWS accounts, preserving access and datasets.

Information Technology Project Analyst   Oct. 2024 – Present
University of Houston   *Houston, TX*

- Handled Migration of **IT services Tool** from FootPrints to TeamDynamix, improving workflows and tracking.
- Partnered with teams to move networking assets from Access DB to TeamDynamix.
- Supported **software rollouts** like MedProctor and Point'nClick with requirement gathering.
- Replaced email-based requests with **structured workflows** for Business Requests and Change MAnagement.

PROJECTS

Model Context Protocol | *Python, Claude, Research, Langchain*

- Conducted comprehensive research on MCP architecture for LLM communication and context management
- Analyzed protocol integration patterns with frameworks like LangChain and demonstrated real-world applications
- Implemented MCP client-server architecture enabling seamless LLM-application communication
- Created implementation examples showcasing file creation and Google Maps integration via MCP servers

Exploratory Data Analysis on Customer Churn Prediction | *Random Forest, Python, Jupyter, Pandas, Git*

- Developed a customer churn prediction model for the telecom sector using RF algorithm with .92 accuracy
- Conducted extensive exploratory data analysis to identify key factors influencing customer attrition
- Implemented machine learning techniques to calculate individual customer churn probability, enhancing retention strategies