Meshal Nayim

San Diego, CA | mnayim@ucsd.edu | +1 858-220-6968 | LinkedIn | GitHub | Portfolio

Education

University of California, San Diego — May 2027
GPA: 4.0/4.0
M.S. in Data Science

Vellore Institute of Technology, Chennai — Jun 2025
B.Tech in Computer Science and Engineering

Experience

Research Assistant — Dec 2025 – Present
Advised by Dr Kun Zhou, Zhiting Hu, Beiwei Huang. University Of California, San Deigo – CA, USA

- **AI Agent MCP Benchmarking** – Developing novel benchmarking tools to stress test AI Agent **MCP** Tools usage and Agent Behaviour Analysis.

Data Warehouse Intern *Ooredoo (Telecommunications company) – Doha, Qatar* — June 2025 – Aug 2025

- **Data Modeling & Visualization** – Optimized LookML models to define metrics, joins, and dimensions for telecoms KPIs, integrating churn, customer, and geolocation datasets from Biq Query according to client requirements.

AI Automation Engineer, *(On-Site)* — Jan 2025 – June 2025
Al Anees (E-commerce company) – Doha, Qatar

- **Automated Financial Reporting** – Developed an end-to-end **AWS** pipeline (S3, Lambda, Textract) to parse bank statements, slashing financial reconciliation time from 1 day to **15 minutes**.
- **AI Resume Screener** – Engineered and led the implementation of an **n8n** pipeline using Gemini & GPT-4 APIs to screen 1000+ applicants, cutting manual screening time by **80%**.

Data Scientist, *(Part-Time/Hybrid)* — Mar 2024 – Jan 2025
Al Anees (E-commerce company) – Doha, Qatar

- **Demand Forecasting** – Developed **PyTorch LSTM models** with **PySpark feature engineering** to predict SKU-level demand (18% MAPE). Models were tracked in **MLflow** and deployed via **Docker** to support inventory planning.
- **Customer Segmentation** – Built **PySpark pipeline** to compute RFM features for 50K+ customers and implemented **K-Means clustering**, creating 5 customer personas used by marketing for targeted campaigns.
- **Model Deployment** – Containerized models using **Docker** and worked with DevOps to deploy as **REST APIs on AWS EC2**. Implemented **MLflow** for experiment tracking and contributed to **CI/CD** automation.

Data Engineer Intern — Jan 2024 – Mar 2024
Al Anees (E-commerce company) – Doha, Qatar

- **ETL Pipeline Development** – Built **PySpark transformation jobs** to clean and migrate 3M+ records from SAP to PostgreSQL, scheduled via **Apache Airflow** for daily automation.
- **Business Intelligence** – Prototyped sales analytics dashboards in **Streamlit** to validate requirements, enabling the BI team to build production **Power BI** reports that reduced stockouts by 20%.

Publications

Detection of Leading CNN Models for AI Image Accuracy and Efficiency — Aug 2024
Meshal Nayim (first author), *et al.* | IEEE IACIS Conference **(Best Paper Award)**

Projects and Contributions

[NeurIPS 2024] OSWorld: Benchmarking Multimodal Agents (Open-Source Contribution) — GitHub

- **Bug Fix & Documentation** – Contributed a merged pull request resolving a critical desktop agent execution bug, including clear documentation and reproducible fixes aligned with the project.
- **Multimodal Agent RPA** – Implemented a token-efficient multimodal agent workflow using GPT-4o-mini, combining summarized task context, screen screenshots, and UI accessibility tree representations for robust GUI interaction.

DocuRAG — Retrieval-Augmented Document Question Answering System — Live App Here

- **RAG System Development** – Engineered a document Q&A system using adaptive PDF chunking and session-isolated vector search with **Supabase (pgvector)** to improve semantic retrieval accuracy across long documents.
- **Cloud Deployment** – Deployed as a scalable, multi-user **FastAPI** service containerized with **Docker** and hosted on **Google Cloud Run**, ensuring reliable session management and stateless request handling.

GPT-2 from Scratch + Fine Tuning | 124M Parameters — GitHub

- **GPT-2 Implementation** – Built and fine-tuned a 124M-parameter GPT-2 model from scratch (tokenizer to transformer blocks), evaluating generation quality against LLaMA-8B.