ARUDHRA NARASIMHAN VENKATACHALAM

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PROFESSIONAL SUMMARY

Data Scientist with a consulting mindset, leveraging machine learning and advanced analytics to drive strategic decision-making and solve complex business problems. Experienced in predictive modeling, generative AI, and automation with a proven ability to deliver measurable business outcomes. Adept at collaborating with cross-functional teams, automation techniques and translating data insights into impactful strategies, and leading initiatives to enhance operational efficiencies. Currently a freelancing **ML engineer** for **Omdena** and **ML Problem Contributor** for **Deep-ML** platform.

TECHNICAL SKILLS

- **Programming Languages :** Java, Python, Database (MySQL)
- **DS and ML Frameworks** : Scikit-Learn, Neural Networks, Transfer learning, Tensorflow, Pytorch, ML-algorithms, NLP (LLM, LLM Fine-tuning) , Time Series analysis, Predictive analytics, Data-Processing (Numpy, Pandas), Data Visualization (Matplotlib, Seaborn, Power BI), UI (Streamlit, Gradio), Statistical Analysis (Hypothesis Testing, A/B Testing), Agentic AI (CrewAI, Phi-Data), Generative AI (Copilot-Studio), LLM APIs (OpenAI, Groq, Ollama), AWS (Sagemaker, API Gateways), Automation(Selenium, Rest-Assured), Git.
- Data Driven decision making, Story-telling, Leadership, Communication

WORK EXPERIENCE

Shamal Holding - Internship — **Dubai, United Arab Emirates**
Data Science and Gen AI Intern — Jun 2024 - Aug 2024

- **Optimized decision-making** by developing **ARIMAX models** for Dubai Real Estate, achieving a **2-3%** MAPE and collaborating with stakeholders to translate data-driven insights into business strategies.
- Developed and presented an **AI-driven business case** for Shamal's Aquaculture asset in the Dubai market, showcasing **CAPEX** and **OPEX** analysis for the first three years to optimize revenue potential and investment strategy.
- Enhanced user experience by improving **chatbot performance** by **10%** through **generative AI-driven analysis** of user interaction logs.
- Standardized customer tracking across business units by implementing **fuzzy logic** for record unification, ensuring consistent database integrity leading to enhanced customer data management.

Tekion Corp — **Chennai, India**
Data Analyst and ML (Automation QA) — Nov 2021 - Sep 2023

- Built and **automated data validation pipelines** using Python and SQL**,** improving test coverage and reducing manual validation by **50%**, created and maintained multiple data dashboards using Superset based on stakeholder demands.
- Developed an **anomaly detection framework** using machine learning models to identify irregular vehicle tracking patterns, reducing critical production issues by **45%** and improving tracking system reliability.
- Worked under high-pressure environments, resolving **critical production issues** affecting real-time vehicle tracking.
- Automated 100+ test cases for in-house tools using Java-based Selenium and Rest-Assured, reducing manual testing by **20%,** accelerating deployments, and enhancing **E2E test case generation** with **generative AI**.

National University of Singapore - Internship — **Singapore**
Data Analytics Intern (Deep Learning) — Dec 2019 - Jan 2020

- Predicted **diabetic retinopathy** using **Convolutional Neural Networks (CNN)**, achieving 81% testing accuracy, enabling early detection in healthcare.
- Deployed an **interactive web interface,** improving accessibility for medical practitioners.

EDUCATION

University Of Birmingham (Sep 2023 - Nov 2024) — **Dubai, United Arab Emirates**
Master Of Science , Data Science — Degree Classification: **Distinction**

- Chancellor's Academic Scholarship Recipient

SASTRA Deemed University (Jul 2017 - Jul 2021) — **Thanjavur, India**
B-Tech Computer Science and Engineering — Cumulative GPA : **8.04/10**

PROJECTS

- **Real Estate Predictive Analytics:** Developed and implemented ARIMAX models for predictive analytics on Dubai real estate, gathering data from REIDIN dashboard, World Bank Records, Dubai Statistics and Dubai Pulse, targeting various community categories, and achieved a Mean Absolute Percentage Error (MAPE) of 2-3% informing high-stakes investment decisions.
- **Speech Impediment detection using fine-tuned lightweight LLM and traditional ML classifiers :** Developed a multi-modal approach for speech disorder classification by integrating audio features using librosa and ASR transcriptions using **LoRA** fine-tuned DistilBERT and various ML classifiers, significantly improving classification accuracy on limited datasets thus contributing towards AI-driven healthcare solutions.
- **Predictive Modelling in Professional Basketball :** Conducted a comprehensive analysis using XGBoost, Random Forest, SVR, and Linear Regression to predict player minutes based on turnovers ,personal fouls, player positions and other performance metrics. Conducted EDA and hypothesis testing (ANOVA-Test) and concluded with all selected models performing equally well thus driving data backed coaching decisions.
- **Flower Prediction using Transfer Learning :** Created a web based flower prediction app during my postgraduate university hackathon. Implemented transfer learning approach and used the "EfficientNet" model for making predictions. The model achieved training accuracy of 93% and validation accuracy of 89%.

CERTIFICATES

1) Machine Learning by Andrew Ng - Coursera
2) Practical Data Science on the AWS Cloud Specialization - Coursera
3) Google Data Analytics Professional Certificate - Coursera
4) Generative AI with Large Language Models - Coursera