

Harshavardhini Selvaraajan

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Coimbatore

Dynamic and results-oriented Data Science Engineer with a robust background in Machine Learning and Artificial Intelligence, seeking to leverage expertise in data-driven solutions within the international market.

Core Competencies

- Data Science & Analytics
- Data Engineering & Big Data Processing
- AI Solutions
- Data Management
- Business Intelligence
- Predictive Modeling & Optimization
- Model Deployment
- Operational Efficiency
- Customer Engagement
- Data-Driven Decisions

Technical Skills

- Machine Learning & AI** Machine Learning, Deep Learning, Natural Language Processing (NLP), Generative AI, RAG, Vector Databases (Vespa, FAISS), Fine-tuning LLM (LoRA, QLoRA)
- Data Engineering & Cloud** AWS Cloud, Google Cloud Platform
- Libraries & Frameworks** Hugging Face Transformers, LangChain, Python, Pandas, NumPy, SciPy, TensorFlow, Keras, Scikit-Learn
- Computer Vision & Image Analytics** Image Analytics, Computer Vision, OpenCV

Certification/ Courses

- Strategic Leadership with AI and ML, Singapore Management University (SMU), Singapore
- AWS Certified Developer – Associate
- Professional Training in Python & Data Science, DevU, Bangalore

Profile Summary

- 5+ years of comprehensive experience in Data Science, specializing in Machine Learning and Artificial Intelligence, with a proven track record of delivering innovative, production-focused AI solutions across multiple domains.
- Currently working as a Senior Consultant at DataPhi-AI, leading AI initiatives across LLMOps/MLOps, Generative AI evaluation and AI-powered CRM solutions from solution design through deployment.
- Worked as a Senior Consultant at EY, engineering an AI-based ICD coding system that applies LLMs and semantic similarity techniques to extract clinical terms from unstructured complaints and generate standardized ICD codes, boosting efficiency and accuracy in healthcare reporting.
- Worked as a Data Science Engineer at ZeroNorth, focusing on the design, deployment, and optimization of AI-driven applications that enhance operational efficiency and customer engagement within maritime operations.
- Successfully developed and deployed a scalable Vessel Reporting Chatbot, significantly improving customer support responsiveness and operational efficiency, underscoring a commitment to excellence in project execution.
- Demonstrated strong leadership and collaboration skills, contributing to successful project outcomes through effective communication, problem-solving, and fostering a positive work environment.
- Expertise in advanced data analytics methodologies, driving actionable insights to optimize fuel consumption and reduce operational costs for maritime vessels.
- Applied predictive maintenance strategies, improving the scheduling of dry-dock intervals, resulting in enhanced vessel longevity and reliability.
- Continuously advancing knowledge in cutting-edge Machine Learning and AI technologies, ensuring the delivery of innovative solutions that address complex challenges in the data science field.

Work Experience

DataPhi-AI, Dubai/UAE — Senior Consultant | Aug'25- Present

EY, Coimbatore/India — Senior Consultant | May'25- July'25

ZeroNorth, Singapore / India — Data Science Engineer | Nov'23 - May'25

Alpha Ori Technologies, India — Data Science Engineer | Sep'21 - Nov'23

Role across the career:

- Integrating advanced document retrieval and natural language processing (NLP) capabilities to guarantee contextually accurate responses to a wide range of maritime-related inquiries.
- Innovating interactive feedback functionalities, enabling users to refine chatbot responses and contributing to continuous improvements in accuracy and user satisfaction.
- Collaborating with cross-functional teams to identify and address operational challenges, ensuring seamless integration of AI solutions into existing workflows.
- Conducting comprehensive testing and validation of machine learning models, ensuring optimal performance and reliability in real-world applications, while implementing CI/CD pipelines using Kubernetes and GitHub for streamlined deployment.
- Developing and maintaining robust data pipelines to ensure efficient collection, transformation, and analysis of large datasets, enabling real-time insights and decision-making.
- Implementing advanced machine learning techniques for anomaly detection, enhancing system monitoring and proactively identifying potential issues before they impact operations.
- Designing and optimizing data storage architectures to support large-scale data processing and ensure high availability for real-time applications.

**Data Science Intern | Crosscope,
Mountain View, California | Apr’21 –
Sep’21**

Title: Cluster-Constrained Multiple
Instance Learning for Pathology

- Developed and trained Multiple Instance Learning (MIL) models with attention-based pooling for Whole Slide Image (WSI) analysis, generating attention scores and heatmaps to highlight key tissue regions and improve classification accuracy.
- Applied deep learning techniques, including RESNET-50 for transfer learning, to enhance interpretability and support medical diagnostics.

Technologies: Python, PyTorch, AWS, Google Cloud Platform, CNNs, RESNET-50 (Transfer Learning), TensorFlow, Keras.

 Education

- **Bachelor’s Degree in Electrical and Electronics Engineering**
 - Sri Ramakrishna Engineering
 - College, Coimbatore, India
 - (June 2012 - May 2016)

Key Achievements:

- Played a key role in driving projects across different markets, enhancing adaptability and cross-cultural collaboration skills.
- Enhanced user engagement metrics through the implementation of interactive feedback mechanisms, leading to improved customer satisfaction ratings.
- Streamlined operational workflows, resulting in reduction in response times for customer inquiries, significantly enhancing overall service delivery.
- Led end-to-end AI solution design at DataPhi-AI, translating business requirements into scalable LLMops/MLOps and Generative AI architectures that support reliable enterprise deployment.
- Contributed to reduction in operational costs through the application of data-driven insights and predictive maintenance techniques.

 Projects

DataPhi-AI, UAE — Senior Consultant

LLMOps & MLOps Engineering | Jan 2026 - Present

Designed and implemented reusable LLMOps/MLOps workflows for enterprise AI solutions, covering automated evaluation, model and prompt version comparison, regression testing, deployment readiness, API health checks, and continuous quality monitoring. Built evaluation approaches for RAG, SQL assistants, and semantic AI solutions to improve reliability before production release.

Tech: Python, LLMs, RAG, DeepEval, FastAPI, Docker, Git/GitHub, AWS, Azure, PostgreSQL, REST APIs

AI-Powered CRM & Lead Nurturing Portal | Aug 2025 - Dec 2025

Designed an AI-enabled CRM portal to replace spreadsheet-based lead tracking and provide a complete view of leads, activities, follow-ups, and pipeline progress. Integrated speech-to-text activity capture with LLM-based summarization and extraction of outcomes, sentiment, next actions, and follow-up suggestions, while keeping lead status changes under user control. Designed the FastAPI/PostgreSQL backend and event-driven AWS processing flow for scalable AI integration.

Tech: Python, FastAPI, PostgreSQL, React, AWS S3, SQS, EventBridge, Lambda/ECS, Amazon Bedrock, Speech-to-Text, REST APIs

EY, India — Data Scientist

ICD CPT Code Extraction | May 2025 - July 2025

Developed an automated ICD code extraction system that transformed unstructured clinical complaints into standardized diagnosis codes, reducing manual effort and improving coding accuracy for healthcare reporting and analytics. Enhanced system scalability to handle large volumes of clinical data, streamlining integration into existing healthcare workflows.

Tech: Python, Transformers, LangChain, FAISS, Pandas, NumPy, scikit-learn, Flask, PostgreSQL, Docker,, Git, JSON, REST APIs

ZeroNorth, Singapore / India — Data Science Engineer

Vessel Reporting Chatbot for Maritime Operations | Dec 2024 - May 2025

Developed and deployed a scalable Vessel Reporting Chatbot on AWS to enhance customer support and operational efficiency. Deployed on AWS for scalability, availability, and secure query handling.

Implemented a two-step response system: immediate Slack acknowledgment followed by detailed responses through background processing. Integrated robust document retrieval and NLP to ensure accurate maritime-related responses. Added interactive feedback functionality to improve response accuracy based on user input, continuously refining the chatbot.

Tech: Python, Slack Bolt API, FastAPI, LLM, Asyncio, Docker, AWS.

Alpha Ori Technologies, India — Data Science Engineer

Cargo Planning - Decision Support System (CP-DSS) | Dec 2021 - Nov 2024

Developed a decision support system for VLCC, Suezmax, and Aframax vessels to automatically generate optimized loading and discharge plans. Used constrained optimization to balance cargo load, ensuring vessel stability and maximizing efficiency. Integrated operational sequences for both loading and discharging processes to improve overall operational efficiency and safety.

Tech: Python, Numpy, Pandas, AMPL, Gurobi.

Personnel Details:

Languages Known : English and Tamil