SIDDHARTHA SHANMUHAVEL

Generative AI – Azure DP-100 – Data Scientist – Machine Learning – Full Stack Development

🏠 Ireland   ✉ siddhartha.shanmuhavel@gmail.com   📱 +353-894061515

🌐 siddhartha-shanmuhavel.github.io   ⓞ github.com/Sidd-Shanmuhavel   🔗 linkedin.com/in/siddhartha-shanmuhavel

PROFESSIONAL SUMMARY

I'm a Full Stack Gen AI Engineer with 9+ years of experience in building and deploying enterprise-scale AI solutions that drive measurable business impact. Specialized in designing and implementing end-to-end generative AI systems, from large language model deployment to production-ready applications.

- I bring 9+ years' experience of seamlessly blending data science and software development. I excel at the entire Data Science Lifecycle, from acquiring and cleaning massive datasets to crafting impactful KPI dashboards, visualizations, ML algorithms and Gen-AI Solutions.
- My strengths lie in:
    - End-to-end Gen AI expertise: Deep experience in LLM fine-tuning, prompt engineering, and RAG systems, complemented by strong MLOps capabilities to deploy and scale AI solutions.
    - Full Stack Implementation: Proven track record in building complete AI systems from data ingestion through to production deployment, using modern cloud platforms and MLOps practices.
    - Adaptability and agility: I thrive in diverse AI and data-driven environments, readily embracing new tools and technologies.

WORK EXPERIENCE

CLOUDSRUS
United Kingdom | *Full Time | 2024 – Present*
Gen-AI Engineer

- **Virtual Customer Agent (VCA)**: Architected an enterprise-grade Email Ticketing automation system using LLMs to process, classify, and route customer email inquiries for Salesforce Ticket Creation, achieving 40% reduction in processing time and 25% improvement in response accuracy. Engineered multi-approach email classification with Azure OpenAI (92% accuracy), developed fault-tolerant document intelligence pipeline with three parallel extraction methods (PyMuPDF, Azure Document Intelligence, GPT-4o), and built production-grade MLOps infrastructure with Databricks and MLflow, ensuring 99.9% model serving reliability. Designed self-learning feedback loops that incorporate user corrections into the MLOps pipeline, resulting in 15% reduction in misclassification rates over time.
- **Greene Genie**: Developed a ***Multi-Agent RAG chatbot system*** for a major UK hospitality chain enabling internal employees to query HR documentation (leave policies, insurance, PTO, maternity benefits etc). Implemented open-source LLMs with LangChain vector store and custom chunking strategies, built using LangGraph for intelligent query routing across multiple data sources, and integrated heterogeneous data sources into unified knowledge base for seamless information retrieval. Implemented comprehensive evaluation framework with similarity scoring and response validation to ensure high-quality answers and continuous system improvement.
- **Key Skills:** Databricks, PySpark, Unity Catalog, Azure OpenAI, MLflow, Python, Asynchronous Programming, Document Intelligence, Multimodal LLMs, LangChain, LangGraph, RAG, Open-source LLMs, Vector Stores

CIRCANA
Athlone, Ireland | Full time | 2021 – 2024
Machine Learning Engineer

- **Product Information Extraction & Recommendation System:** Spearheaded a project leveraging Large Language Models (LLMs) to extract key product attributes from complex HTML code. Implemented fine-tuning of open-source LLMs and Retrieval Augmented Generation (RAG), enhancing accuracy and adaptability over traditional rule-based methods. This initiative expedited product data analysis, bolstering competitive intelligence and market research capabilities.

- **Anomaly Detection in POS Data:** Developed and deployed a bidirectional Long Short-Term Memory (LSTM) model to identify anomalies in receipt and point-of-sale data. Achieved a 35% reduction in false positives and a 15% improvement in overall insight accuracy, streamlining data-driven decision-making processes.
- **MLOps Implementation:** Utilized Docker, Databricks, and Azure Machine Learning to optimize the training, deployment, and management of machine learning models in the cloud, ensuring scalability, 99% uptime reliability, and cost efficiency.
  Key Skills: Azure ML Studio, Docker, Power BI, Python, MS SQL, Snowflake, TensorFlow, Scikit-Learn, NumPy

Invicara Limited
Dublin, Ireland | Full Time | 2020 – 2021
Data Analytics Specialist
- **Digital Twin Analytics:** Led the creation of interactive Sisense dashboards for over 500 real-time sensors within digital twin environments. Integrated data from diverse sources, including PostgreSQL and Azure tables, resulting in an 80% increase in data accessibility, a 12% reduction in anomaly response time, and a 15% boost in customer satisfaction.
- **Client-Focused Analytical Projects:** Conducted comprehensive analyses on energy consumption, indoor air quality, anomaly detection, component failure, and warranty management for various clients. Delivered tangible outcomes, such as a 10% decrease in energy consumption, a 5% improvement in indoor air quality, and a 20% reduction in warranty claims, leading to significant cost savings. Presented detailed critical findings to senior management and C-suite executives, directly influencing strategic decisions and resource allocation.
  Key Skills: Sisense, Jupyter Notebook, Excel, PostgreSQL

Infosys Limited
Chennai, India | Full Time | 2016 – 2019
Senior Systems Engineer
  Key Skills: Python, Tableau, Natural Language Toolkit (NLTK), Google DialogFlow

EDUCATION

Master of Science in Data Science & Analytics
University College Cork | Cork, Ireland | 2019 – 2020

Post Graduate Diploma in Data Science & Engineering
Great Lakes Institute of Management | Bangalore, India | 2018 – 2019

Skills

Technical Skills

- Generative AI: Prompt Engineering, Large Language Models (LLMs), Retrieval Augment Generation (RAG), Fine Tuning
- Data Science & ML: Python (libraries: TensorFlow, Pandas, NumPy, Scikit-Learn, Seaborn, nltk, BeautifulSoup), Machine Learning, NLP (Text Mining & Sentiment Analysis), Web Scraping, Deep Learning, Time Series Forecasting
- Database & Visualization Tools: MS SQL, Snowflake, PostgreSQL, MySQL, DB2, Power BI, Sisense, Tableau
- Programming Languages & Frameworks: Java, HTML5, CSS, Django, Flask, Spring Boot, Hibernate, REST, MVC
- Version Control & Build Automation: GIT, Subversion, Azure ML, Blob Storage, Docker, Jenkins, Apache Maven

Soft Skills

- Communication: Collaborative and articulate, with experience communicating technical concepts to diverse audiences
- Leadership: Proven ability to mentor trainees and conduct knowledge-sharing sessions.
- Teamwork: Extensive experience working in cross-functional teams across various project types.
- Adaptability: Adept at working in Agile environments and within sprints using Scrum

LANGUAGES

English – C1	Deutsch (German) – B1	Tamil – Native	French – A1