Akhileshwar Sanathana

Graduate AI & ML Engineer | Full-Stack & Data Engineering

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Summary

Performance-driven AI Engineer with a Master's in AI and a unique blend of Machine Learning, Data Engineering, and Full-Stack Development skills. Experienced in building production-grade RAG pipelines, optimizing cloud infrastructure (Azure/AWS), and developing React-based AI applications. Background in Digital Marketing Analytics (PeopleLink) aligns perfectly with agency goals. Eager to leverage GenAI and automation to drive marketing performance at Threepipe Reply.

Experience

BGC – Cantor Fitzgerald   January 2024 – July 2024
Data Engineering & Automation Intern   London, United Kingdom

- Pipeline Optimization: Automated critical data workflows by developing PowerShell scripts and SQL-based logic, reducing manual processing time and improving data availability for business teams.
- Cloud Infrastructure: Managed cloud resources on Azure, monitoring compute services and ensuring stability of automated reporting pipelines.
- Collaboration: Partnered with non-technical stakeholders to translate business requirements into technical automation solutions, streamlining agency-style operations.

PeopleLink   June 2022 – July 2022
Digital Marketing & Analytics Intern   Hyderabad, India

- Marketing Analytics: Analyzed marketing campaign performance data to identify trends, optimize spend, and improve conversion rates using statistical methods.
- Data-Driven Strategy: Supported the optimization of outreach campaigns by mining large datasets, providing actionable insights that aligned directly with client acquisition goals.

Education

University of Southampton   September 2024 – September 2025
Artificial Intelligence   Master's Degree
Merit

- Dissertation: Engineered a robust Deep Learning framework using Conformal Prediction to automate uncertainty estimation in sensor data, ensuring high reliability in noisy environments.
- Relevant Modules: Deep Learning (Computer Vision/NLP), Reinforcement Learning, Advanced Machine Learning.

ICFAI Tech University   July 2020 – July 2024
Computer Science and Engineering   Bachelor's Degree
Distinction

- Focused on Data Structures, Algorithms, Web Development, and Software Engineering.

Projects

GenAI RAG Application with Caching & Safety

- GenAI Development: Built a production-ready RAG pipeline using LangChain concepts and OpenRouter APIs to query domain-specific data. Integrated a Redis Vector Database for semantic caching, reducing API latency from seconds to milliseconds.
- App & Deployment: Deployed the model via a Streamlit interface (Python) with a focus on user experience. Implemented safety guardrails and prompt optimization to ensure reliable outputs for professional use cases.

LLMs, RAG Pipelines, Vector Databases, Prompt Engineering, Redis

End-to-End Medical Imaging Classification

- Model Training: Developed high-performance classifiers (ResNet-50, Vision Transformer) achieving 99% accuracy on MRI datasets using TensorFlow.
- Pipelines & Ops: Built reproducible data ingestion and augmentation pipelines, demonstrating MLOps best practices for handling large, unstructured datasets.

TensorFlow, Computer Vision, MLOps, Data Pipelines

Audio Analysis & Genre Classification

- Processed complex audio signal data (Mel-spectrograms) using PyTorch, applying CNNs and LSTMs to extract features for automated genre tagging.

PyTorch, Unstructured Data, Signal Processing

Volunteering

Enactus UK & Ireland   2024 – Present
Technical Lead / Member

Advising on technical feasibility for social enterprise projects and managing digital assets.

Skills

GenAI & ML Stack

Python, RAG Pipelines, LangChain / LLMs, Vector Databases, PyTorch, TensorFlow

Web & DevOps

JavaScript (React.js), FastAPI, Docker, CI/CD Concepts, Git/GitHub, REST APIs

Data Engineering

SQL (MySQL/Postgres), Pandas/NumPy, Data Pipelines, AWS / Azure Cloud, Marketing Analytics

Soft Skills

Client Communication, Requirement Analysis, Technical Translation, Agile Collaboration

Certifications

Amazon Web Services (AWS) Certification   August 2022
Amazon Web Services

Google AI Essentials Certification   August 2025
Google
https://www.coursera.org/account/accomplishments/verify/HJV7ITUANWYO

GitHub Copilot   June 2025
GitHub
https://www.credly.com/badges/f43652cf-9540-4282-9b9e-a9334d703409/linked_in_profile

Publications

Metaverse and Blockchain Use Cases   12 August 2025
Taylor and Francis Group
https://doi.org/10.1201/9781003559269

Published research on digital asset ownership and emerging tech ecosystems, demonstrating strong technical writing and foresight into tech trends.