Akhileshwar Sanathana

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Experience

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

- Task Automation: Automated routine tasks by developing and enhancing PowerShell scripts, integrating data analytics to align with business objectives and improve team efficiency.
- Script Maintenance: Assisted in bug fixes and troubleshooting issues in existing scripts, demonstrating attention to detail and strong communication skills to ensure smooth operations.
- Cloud Technologies: Gained hands-on experience with Azure Cloud, managing resources and optimizing workflows using dashboards and Excel for effective data analysis and reporting.

PeopleLink   June 2022 - July 2022
Digital Marketing and Datamining Intern   Hyderabad, India

- Data Analysis: Supported digital marketing strategies through comprehensive data analysis using Excel and statistics to deliver insights concisely and articulate findings effectively.
- Campaign Optimization: Optimized outreach campaigns by leveraging data mining and analytics, fostering professional growth in a supportive environment while aligning with business objectives.

Education

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

- **Dissertation:** Developed a deep learning framework combining a 1D-CNN with Conformal Prediction to provide robust heart rate estimates and calibrated uncertainty intervals from wearable PPG sensors, effectively mitigating motion artifacts.

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

Projects

Domain-Specific RAG Architecture with Multi-Layer Caching

- Developed a retrieval-augmented generation (RAG) pipeline with a dual-layer semantic cache (L1 exact, L2 cosine) in Redis, reducing response latency from seconds to milliseconds while maintaining verified sources.
- Integrated a fact-checking module enforcing authoritative context and domain safety disclaimers, ensuring medical and financial reliability within a Streamlit-based LLM interface.

Python, Streamlit, Redis, OpenRouter API

Automated Brain Tumor Classification with Deep Learning

- Built and compared deep learning models for MRI-based tumor detection using ResNet-50 and Vision Transformer architectures, achieving 99% classification accuracy.
- Applied data augmentation and transfer learning to improve generalization and reproducibility, packaging code for end-to-end training and evaluation.

TensorFlow, ResNet50, Vision Transformer

Music Genre Classification using Deep Learning

- Implemented and compared CNN and LSTM variants on the GTZAN dataset, achieving 75.25% accuracy using CNNs with Batch Normalization on Mel-spectrogram inputs.
- Streamlined preprocessing, spectrogram conversion, and evaluation using modular PyTorch pipelines and reproducible notebooks.

PyTorch, Librosa, CNNs, LSTMs

Volunteering

Enactus UK & Ireland   2024 - Present
Member

Participating in community projects and social enterprise initiatives.

Skills

Programming Languages

Python, C, C++, SQL, JavaScript (React.js)

ML Tools

TensorFlow, PyTorch, Scikit-Learn, OpenCV, Hugging Face, FastAPI

Data Science

NumPy, Pandas, Matplotlib, Seaborn

Technologies & Concepts

Machine Learning (ML), Deep Learning (DL), Computer Vision, NLP, AI

Soft Skills

Leadership, Innovation, Public Speaking, Technical Writing, Event Management

Certifications

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

Artificial Intelligence Fundamentals   October 2025
IBM
https://www.credly.com/badges/9e6f3425-0797-41f6-ae60-baccad2fdef4/linked_in_profile

Amazon Web Services AWS Certification   August 2022
Amazon Web Services

Publications

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

Explored the integration of blockchain in virtual worlds with an emphasis on security, transparency, and digital asset ownership. Analyzed NFT applications in entertainment, gaming, and art and investigated blockchain-driven DeFi ecosystems.