MAHESWARAN S

Machine Learning Engineer & AI Practitioner

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Machine Learning Engineer with experience in production ML systems for computer vision, time-series, and security. Skilled in scalable pipelines, deep learning, anomaly detection, and hackathon prototypes focused on reliability and deployment.

PROFESSIONAL EXPERIENCE

Machine Learning Engineer Intern – LOC Tech, Chennai Nov–Dec 2025

- Engineered predictive analytics pipelines for client data monitoring, preprocessing and analyzing datasets using Python, scikit-learn, pandas, and NumPy, achieving 94% anomaly detection accuracy
- Built ML models including Random Forest and Isolation Forest for anomaly detection and forecasting, reducing manual review time from hours to minutes while maintaining 85% precision in anomaly flagging
- Implemented end-to-end ML workflow from data integration to deployment, contributing to initial client traction and enhancing automation capabilities for real-time insights

KEY PROJECTS

Multimodal Emotion Recognition (Audio-Visual) – Lead Developer

- Constructed privacy-aware system combining CNN facial analysis and audio embeddings, improving accuracy over unimodal models by 20%
- Designed feature-fusion pipeline enhancing robustness for user feedback applications under explicit consent

Predictive Maintenance for EV Batteries – Lead Developer

- Formulated anomaly detection system using Python and CALCE dataset with Isolation Forest/Autoencoder, achieving 94% prediction accuracy for capacity fade
- Devised time-series ML pipeline for real-time BMS integration, reducing thermal runaway risks and downtime

Mint Money – AI Market Intelligence Platform – Lead Developer

- Architected real-time US equities analysis system with live data via APIs/WebSockets (YFinance fallback)
- Introduced ML signals using LSTM and Random Forest with confidence scoring and feature engineering for robust predictions

RESEARCH CONTRIBUTIONS AND PUBLICATIONS

Co-Author – IEEE & Springer Conferences 2024–Present

"A Novel Deep Learning Approach for Accurate Obesity Detection by Leveraging Synthetic Image Data"

Status: Submitted to multiple IEEE & Springer conferences; recently submitted to SRM AP University

TECHNICAL PROFICIENCIES AND PROFESSIONAL SKILLS

- **Programming & ML/DL:** Python, TensorFlow, PyTorch, OpenCV, scikit-learn, LangGraph, DSA, NLP, YFinance
- **Frameworks & Tools:** FastAPI, Railway, Render, Docker, Git, Postman, Supabase, LightGBM, Autoencoders, RAGs
- **Visualization & Dashboards:** Matplotlib, Seaborn, Plotly, Streamlit, Power BI, Tableau
- **Languages:** English (fluent), Tamil, Hindi

EDUCATIONAL QUALIFICATIONS

Integrated Master of Technology – VIT Bhopal University 2022–2027 (expected)

Major: Artificial Intelligence - CGPA 8.60

Higher Secondary (12th) – Everwin Matriculation Higher Secondary School 2021 Score: 93%

Secondary (10th) – Wesley's Matriculation Higher Secondary School 2019 Score: 87%

CERTIFICATIONS AND CONTRIBUTIONS

- **Certifications:**
  - Oracle Cloud Infrastructure Certified AI Foundations Associate
  - Tata GenAI Powered Data Analytics Job Simulation (Jan 2026)
  - Applied Machine Learning in Python (Coursera – Univ. Michigan, Dec 2023)
  - Goldman Sachs Software Engineering Job Simulation (Sep 2023)
  - Cloud Computing (NPTEL)
- **Contributions and Achievements:**
  - NASSCOM Hackathon Finalist – Developed AirCheck: AI-powered airline customer care agent (booking, status, cancellation)
  - Active participant in national & global AI/security hackathons: SEBI, Shell.ai, VIT Bhopal – Johns Hopkins Health Hack 2025, Global MCP, D3CODE 2025, SIH 2025, KDSH 2026
  - Currently participating in EY Techathon 6.0 (2nd phase ongoing) and ShikshaLokam Hackathon
  - Focus on research-driven, industry-oriented AI solutions, agentic architectures & scalable ML pipelines

LinkedIn | GitHub