MAHESWARAN S

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EXECUTIVE SUMMARY

Machine Learning and Artificial Intelligence practitioner with strong experience building end-to-end, production-oriented ML systems across computer vision, time-series analysis, and security domains. Proven ability to design scalable pipelines, apply advanced modeling techniques (deep learning, anomaly detection, ensemble methods), and translate research concepts into high-impact prototypes. Demonstrated success in competitive hackathons and real-world problem settings, with a focus on reliability, performance, and practical deployment.

PROJECTS

Multimodal Emotion Recognition (Audio–Visual)

- Developed a privacy-aware multimodal emotion recognition system combining CNN-based facial analysis and audio emotion embeddings for static and continuous streams.
- Designed a feature-fusion pipeline to improve robustness over unimodal models, enabling reliable emotion inference for feedback and user-rating applications under explicit user consent.

Predictive Maintenance for EV Batteries

- Engineered an EV Battery Anomaly Detection System using Python and the CALCE dataset, implementing an Isolation Forest/Autoencoder model to predict incipient failures.
- Achieved 94% prediction accuracy in virtual environments for faults like capacity fade, significantly reducing potential thermal runaway risks and downtime.
- Developed a full ML pipeline for time-series data, covering feature engineering from raw voltage/current data to model validation, a scalable solution for real-time BMS integration.

Mint Money – AI Market Intelligence Platform

- Built a real-time financial analysis system for US equities using Python, FastAPI, and YFinance.
- Implemented ML-based signal generation with confidence scoring, feature engineering, and rule-based fallbacks for robust market predictions.
- Designed a scalable backend architecture with live market streaming (WebSockets), snapshot-based fallback for market-closed states, and feature-aligned ML inference using LightGBM with strict schema validation.

EDUCATION

Integrated Master of Technology **Jun 2022 - Jun 2027**
Major: Artificial Intelligence - CGPA 8.58
VIT Bhopal University

- Co-authored a research paper on a novel deep learning approach for accurate obesity detection by leveraging synthetic image data

ADDITIONAL INFORMATION

- **Technical Skills:** Python, TensorFlow, OpenCV, LangGraph, DSA, NLP
- **Certifications:** OCI Certified AI Foundations Associate, Applied Machine Learning in Python (Coursera), Cloud Computing (NPTEL),
- **Activities:** Machine Learning Engineer Intern at LOC Tech, Chennai, contributing to predictive analytics by preprocessing and analyzing existing customer datasets, alongside active participation in national and global AI/security hackathons (SEBI, Shell, Global MCP, D3CODE 2025), where an agentic AI solution was recognized as a Finalist at the NASSCOM Hackathon.