

MAANAAV MOTIRAMANI

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Summary

Applied AI / Full-Stack ML Engineer with production experience across the end-to-end AI pipeline, from data engineering and model development to GenAI product deployment serving 2,000+ users. UNSW International Scientia Scholar (A\$40K merit award).

Skills

- **AI & ML:** PyTorch, TensorFlow, Scikit-learn, XGBoost, Hugging Face, LangChain, LangGraph, RAG, Time-Series, Computer Vision.
- **Data & Analytics:** Python, Pandas, NumPy, Matplotlib, SQL, PostgreSQL, Elasticsearch, Firebase, ETL Pipelines, Web Scraping.
- **Tools & Cloud:** Git, Docker, Azure, Azure ML, Power BI, Tableau.
- **Web & App Development:** FastAPI, REST APIs, Next.js.

Education

Master of Data Science and Decisions, *University of New South Wales* Sep 2024 - Sep 2026

- UNSW International Scientia Scholarship (A\$40K) | Weighted Average Mark (WAM): 78.7 | Specialization: Computational

Bachelor of Technology (B.Tech) in Computer Engineering, *SVKM's NMIMS* Jun 2021 - May 2024

- CGPA: 3.91/4 | Honours in Data Science/Analytics | Dean's List | Technical Achievement Award | Student Ambassador

Experience

AI Engineer, *Edify*, Sydney Feb 2026 - Present

- Building an A-MEM agentic memory using LLM extraction and MongoDB Atlas Vector Search to deliver personalized tutoring experiences on an EdTech platform.

Co-Founder, *Aegis AI*, Sydney / San Francisco Jan 2026 - Present

- Building a real-time Agentic AI safety system for construction sites; secured US\$100K in Microsoft for Startups Azure credits; Columbia AI Challenge Semifinalist; UNSW Pre-X Accelerator (25/300 selected); interviewed with Y Combinator and accelerators.
- Architected a Multimodal Vision pipeline with LLaVA and YOLOv11 to perform zero-shot hazard reasoning on live camera feeds.
- Deployed the FastAPI backend to Azure Container Apps with Docker and Azure Container Registry (ACR).

Founding Engineer (AI & Full Stack Developer), *MentorAll*, Sydney Aug 2025 - Jan 2026

- Shipped a full-stack MVP to 100+ pilot users (UNSW Peter Farrell Cup Top 10 Finalist); engineered a two-stage mentor-matching pipeline using LLM multi-label classification and LLM-as-a-judge A/B testing, improving match quality and user trust.
- Architected Next.js (TypeScript) app with Google Analytics events to track user behavior, designed Airtable data model and automation hooks to recompute matches on specific events.

Machine Learning Engineer, *Creative Innovation*, India May 2023 - Nov 2023

- Built semantic search system over a 10K+ MCQ repository using BERT embeddings, reducing manual drafting workload by 25%.
- Developed churn prediction model on 3K student responses (18.7% churn); ROC-AUC 0.86 (5-fold CV), enabling targeted outreach.

Data Engineer, *Analystt.AI*, India Dec 2021 - Apr 2022

- Migrated 20M records from SQL to Elasticsearch, reducing average query latency and enabling full-text search at scale.
- Engineered an NLP pipeline (spaCy NER, regex parsing) to extract 50K+ structured records from unstructured PDFs.
- Architected 12+ scrapers/API (Scrapy, Selenium) updating 20K+ records daily (saving 8 hrs/week) & a React/FastAPI analytics platform to audit data quality, removing marketing's dependency on engineering.

Projects

Autonomous Grocery Pricing Agent (*UNSW Founders Peter Farrell Cup participant*) | [Video Demo](#) Jan 2025 - Present

- Built a real-time price intelligence agent using Ollama, LangGraph, FastAPI, and custom scrapers across major retailers.
- Added tool-use, HITL interrupts, observability, and persistent sessions; reduced manual price-comparison time by 86%.

Multi-Agent Legal Simulator (*Awarded US\$5,000 API Credits, Mistral AI Worldwide Hackathon*) | [Product Demo](#) Feb 2026

- Fine-tuned on Australian case law (Mistral 7B, LoRA) with RAG and jurisdiction filtering using LangChain and Chroma Cloud.

Plastic Detection (*1st of 770 teams from 19 countries winning US\$1,800, Kyndryl Hackathon*) | [Video Demo](#) Jul 2023 - Sep 2023

- Developed YOLOv8 ensemble with DBSCAN (49.18% recall uplift); cut training time by clustering 6K images via VGG16/PCA/K-Means and augmented a 300-image Saigon River dataset for local edge cases.

Predictive Maintenance Railway | [IEEE Paper](#) Jun 2023 - Aug 2023

- Applied LSTM, XGBoost & Isolation Forest on 1.5M+ multivariate time-series sensor readings; LSTM achieved 95% recall on <1% failure-rate data. Implemented SHAP for explainability.

Publications, Awards & Certifications

- 30+ ML/DS credentials: UWash Machine Learning Specialization and DeepLearning.AI's Deep Learning Specialization ([Full List](#)).
- Co-authored 9 IEEE/journal publications, in NLP, CV & Applied Machine Learning ([Google Scholar](#)).
- Competed in 10 global hackathons (NASA, Indian Govt., etc.) with 3 wins, building predictive models, dashboards, and apps.