

LEKHANA KALYAN RAJ

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AI Full Stack Engineer specialising in Software Development, Large Language Model systems and Computer Vision, with hands-on experience building production-grade GenAI applications, automated AI Agentic workflows and vision-language models. Adept at combining research depth with full-stack deployment across cloud platforms.

EDUCATION

UNIVERSITY OF NEW SOUTH WALES

Master of Information Technology, Artificial Intelligence

Sydney, Australia
February 2024 - August 2026

B.M.S COLLEGE OF ENGINEERING

Bachelor of Engineering, Information Science & Engineering, 9.0 CGPA

Award: Best Project of 2023, ISE Department, for Project ERO

Bengaluru, India
August 2019 - July 2023

EXPERIENCE

HAPPY STUDIOS [Contract]

AI Full Stack Developer

Newtown, NSW

April 2025 - May 2025

- Built an **AI Agentic** based **content scheduler** for happymag.tv using **prompt engineering** and fine-tuned language models - reads their existing articles, learns their editorial voice, and drafts new pieces automatically so writers spend less time on research and more time on storytelling
- Wrote a **multi-source data pipeline** from scratch that pulls content from across the web and gives writers one place to find what they need, instead of hunting across tabs
- Used **RAG** to make sure the generated content actually sounded like them - not just factually correct, but genuinely on-brand
- Moved their entire music library off local servers onto **GCP**, setting up proper storage structure, access controls, and keeping the ongoing costs reasonable

THEODORE [Internship]

GenAI Full Stack Developer

Surry Hills, NSW

January 2025 - February 2025

- Contributed to Neuono - neuono.com The world's first AI-led fashion label, debuted at London Tech Week 2025 and live on iOS & Android capable of generating **16 quadrillion** unique garment combinations, by building custom **Stable Diffusion** + **ComfyUI** pipelines with **LoRA** adapters tuned to perform consistently across styles and user's interests.
- Powered context-aware styling features, translating prompts like "boardroom outfit for a 60-year-old man" into tailored designs, for a platform serving Theodore's 30,000+ app downloads, by building **LLM**, **RAG** and **Prompt engineering** pipelines on **Flutterflow**, **AlloyDB** and **Google Cloud Storage**.

JUNIPER NETWORKS [Internship]

Software Engineering Intern

Bengaluru, Karnataka

January 2023 - June 2023

- Wrote **Python** scripts to track down and fix **Network protocols** such as complex BNG and DHCP networking issues that the subscriber services team had been dealing with manually

MITRA ROBOT [Internship]

Artificial Intelligence Intern

Bengaluru, Karnataka

August 2022 - January 2023

- Trained a real-time **fall detection model** using **Python**, **PyTorch** and **TensorFlow**, deployed live on a **ROS2** robot in a senior care facility in Texas, USA
- Configured communication between **100+ robots** and the Control Center through **WebRTC**.
- Put together a **Computer Vision** dataset of **20,000+ video samples from 25 participants** for gesture recognition - collected, cleaned, and labelled it all, which turned out to be most of the actual work
- Built **CLIP-based Vision Transformers** and **Deep Learning** models so the robot could understand what people were doing with their hands and respond accurately
- Set up **AWS** cloud storage for the robot's video data - trimmed costs without losing anything the model actually needed

PROJECTS

ERO

- Built a classroom robot that combined **Computer Vision**, **Transformers**, **LLMs** and **Text-to-Speech** - the idea was to automate the repetitive parts of teaching so the lecturer could focus on what actually needs a human. Won Best Project of 2023 in the ISE Department
- Built a **Flutter** app to remotely control and monitor the robot in real time, and handled the hardware-software integration myself so it actually ran end-to-end

GAME-NIGHT

- Engineered a real-time, event-driven multiplayer platform supporting 5+ game modes and 15+ concurrent players/room, using **Next.js**, **Node.js**, **Express**, **Socket.io**, and **WebSockets** for low-latency communication, server-authoritative state management, and resilient client sessions.
- Built an **LLM-powered Game Master Agent** using **Python**, **FastAPI**, **LangChain**, **RAG**, **embeddings**, **vector search**, **prompt engineering**, structured outputs, and tool/function calling, grounding context-aware game generation in live game state and curated game knowledge.
- Productionized and evaluated the AI pipeline with **LLM evaluation**, asynchronous inference, automated regression testing, **SAST**, **SCA**, **OWASP TOP 10**, **Docker**, and **OpenTelemetry**-based observability, instrumenting latency, model calls, retrieval performance, response quality, and failure rates across model/prompt iterations.

PUBLICATIONS

- Body Language Recognition: A Gesture Dataset for Computer Vision Tasks - [Kaggle Dataset](#)
- Digital Assistant Robot for Academic Fraternity Using Deep Learning - [DOI](#)
- Assistant Robot for Academic Fraternity: A Survey on Methodologies and Challenges - [DOI](#)

SKILLS

Technical: Stable Diffusion, ComfyUI, LoRA, LLM, RAG, Prompt Engineering, LangChain, LangGraph, LlamaIndex, Embeddings, Vector Search, Socket.io, HuggingFace Transformers, OpenAI API, PEFT/QLoRA, CLIP, OpenCV, YOLO, Vision Transformers, Recommender Systems, PyTorch, AI Agent, TensorFlow, ROS2, Computer Vision, Deep Learning, Text-to-Speech, Flutterflow, Flutter, React, AlloyDB, AWS, GCP, Google Cloud Storage, Docker, FastAPI, ChromaDB, FAISS, Pinecone, Network protocols, WebRTC, Microsoft Azure, DataBricks, MLflow, Pandas, NumPy, Mobile App Development, Testing, Open Telemetry, SAST, SCA, OWASP TOP 10

Language: Python, C, Java, JavaScript, TypeScript, Node.js, Next.js, SQL

Model providers: Anthropic, OpenAI, Google, Mistral, Open-source models

AI Cloud Platforms: Amazon Bedrock, Microsoft Azure AI Foundry, GCP