

RAHUL VIGNESH

Sydney, Australia | 046 838 6695 | rahulvijju2004@gmail.com | [Portfolio](#) | [Resume](#) | [GitHub](#)

PROFESSIONAL SUMMARY

Software engineer who turns problem statements into end-to-end solutions, from requirements and system design to APIs, data pipelines, AI workflows and user interfaces. Builds with Python, FastAPI, React and TypeScript, with testing, evaluation and deployment built into delivery. UNSW student graduating in November 2026, open to software, AI engineering, forward-deployed engineering and AI consulting roles.

CORE COMPETENCIES

Languages & Web: Python, TypeScript, JavaScript, SQL, C, React, Next.js, HTML/CSS

Backend & Data: FastAPI, REST APIs, PostgreSQL, SQLite, ChromaDB, Pydantic

AI Systems: Generative AI, agentic AI, AI system design, RAG, hybrid retrieval, reranking

ML & Evaluation: XGBoost, PyTorch, TensorFlow, pandas, NumPy, LLM evaluation

AI Tools: Codex, Claude Code, Gemini/Groq APIs

Familiarity: Model Context Protocol (MCP), multimodal AI

Testing & Delivery: pytest, regression tests, Docker, Git, GitHub Actions, Vercel, code review

EXPERIENCE

Software Developer Intern / Galaxy i Technologies Inc.

Apr 2024 - Jul 2024

- Contributed to frontend/backend features, database and API integrations, testing and debugging under senior guidance.
- Participated in Git-based code reviews, requirements analysis, deployment support and technical documentation.

PROJECTS

EnergyAI / Building Energy Forecasting & Planning

[GitHub](#)

- Built React interfaces and FastAPI endpoints that bring together meter history, weather, demand forecasts and physics-based solar-planning estimates.
- Implemented a 720-hour recursive XGBoost forecast with rolling lag/history updates; optional PatchTST inference requires a checkpoint and 336 continuous hours of history.
- Added regression checks for timestamp alignment, lag indexing, missing weather and units, targeting failures at the data-to-model boundary.
- Kept raw predictions distinct from history-adjusted monthly energy estimates; documented validation scope and fallback paths so planning outputs can be interpreted correctly.

Document RAG System / Search & Question Answering

[GitHub](#)

- Built document ingestion and persistent embeddings; combined BM25 and semantic retrieval with reciprocal-rank fusion and cross-encoder reranking.
- Designed typed FastAPI contracts with authentication, document permission filters, structured request logs and regression tests for the retrieval-to-answer path.
- Added citation validation and no-context abstention; implemented a 50-case golden-set workflow with separate retrieval, faithfulness, relevance and decline checks.

JobAgent / Application Workflow Prototype

[GitHub](#)

- Connected a React interface and FastAPI services to Gemini and ChromaDB for resume matching, skill-gap analysis and reviewable tailoring.
- Persisted applications, resume versions, reusable answers and audit logs in SQLite, with human approval represented in the workflow state.
- Added explicit non-submission results and four regression tests on a feature branch; discovery and submission adapters remain simulations.

EDUCATION

University of New South Wales (UNSW), Australia

2024 - Present

Computer science and engineering studies | Transfer from VIT | Expected: Nov 2026

Vellore Institute of Technology (VIT), Chennai

2022 - 2024

Robotics and Artificial Intelligence studies | GPA: 9.05 | First two years before transfer

OPEN-SOURCE CONTRIBUTION

- NUS OpenCap project: contributed to open-source tools for video-based human movement analysis.