AKILESH JAYAKUMAR

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Education

University of Wollongong, Faculty of Engineering and Information Sciences   **Oct 2022 - Sep 2025 (Expected)**
Bachelor of Computer Science in Cyber Security   *Singapore*

Singapore Institute of Management   **Oct 2021 - Sep 2022**
Diploma in Information Technology   *Singapore*

Experience

Singapore Department of Statistics | *AI Engineer Intern*   **Jan 2025 - Present**
Tech Stack: *Python, LangChain, Docker, AWS*
- Developing an agentic chatbot by fine-tuning AI models and expanding datasets for contextually aware responses.
- Deploying scalable chatbot solutions on AWS and Government Commercial Cloud, powering WOG operations.
- Automating multiple data concierge workflows, reducing manual effort and boosting operational efficiency.

Home Team Science & Technology Agency | *AI Engineer Intern*   **Apr 2024 - Oct 2024**
Tech Stack: *Python, LangChain, Docker, Redis, PyTorch, Azure ML*
- Refactored system architecture to enable custom prompts and few-shot learning for more tailored LLM outputs.
- Engineered containerised RAG pipelines with RAGAS evaluation, utilising open-source LLMs from HuggingFace.
- Configured scalable microservices using Docker Compose to integrate and containerise core GenAI components.

Central Provident Fund Board | *AI Engineer Intern*   **Dec 2023 - Apr 2024**
Tech Stack: *Python, LangChain, Microsoft 365*
- Developed a GenAI application to analyse employee comments and reviews, delivering sentiment insights for HR.
- Enhanced sentiment analysis accuracy by researching and fine-tuning prompt templates using GPT models.
- Automated report generation workflows, providing HR with rapid access to key metrics and trends.

Projects

NES CatalystX Hackathon 2024 | *Source Code* | *Live Site*   **Oct 2024**
Tech Stack: *Python, LlamaIndex, NVIDIA NIM Microservices*
- Developed a multimodal GenAI tutor with TTS and STT functionalities to improve dyslexic accessibility.

LangGraph Agentic Chatbot | *Source Code* | *Live Site*   **Oct 2024**
Tech Stack: *Python, Gradio, LangGraph, Tavily*
- Built an LLM agent capable of answering queries by searching and retrieving real-time information from the web.

Certifications

GitHub Foundations | *Issued by GitHub (Jan 2025)* | *View Credential*
Neo4j Certified Professional | *Issued by Neo4j (Sep 2024)* | *View Credential*
Neo4j & LLM Fundamentals | *Issued by Neo4j (Sep 2024)* | *View Credential*

Skills

Databases: MongoDB, Neo4j, Qdrant
Languages: HTML/CSS, JavaScript/TypeScript, Python, SQL
Tools & Frameworks: Docker, Git, LangChain, LangGraph, LangSmith