LIN HONG YI

+65 91635848 • hong_yi@u.nus.edu • hongyiii.dev

EDUCATION

National University of Singapore **Aug 2024 - Present**
Bachelor of Engineering (Engineering Science)

- Second Major in Innovation and Design, Minor in Computing
- Engineering Scholars Programme
- NUS Overseas Colleges (Bangkok)

WORK EXPERIENCE

Framed, Founder / Tech Lead **Jul 2025 - Present**

- Designed and implemented an embedding-based retrieval pipeline for photo curation using OpenCLIP ViT-L/14 (Python, PyTorch)
- Developed a multi-stage retrieval stack (feature extraction → filtering → clustering → ranking)
- Deployed a distributed micro-service pipeline for scalable embedding extraction and image processing

Bot Noi Group (NOC Bangkok), ML Engineer **May 2025 - Jul 2025**

- Built a multi-agent orchestration logic and routing on top of the Google A2A protocol, enabling structured message passing and tool routing across agents
- Designed a provider-agnostic agent DevKit, reducing agent configuration to a single JSON spec
- 5x reduction in token usage/cost compared to single agent with MCP tools (deep research)
- Management of distributed context across different agents through routing relevant information and state handling

Fabrica AI, Robotics DevOps Intern **Jan 2024 - May 2024**

- Initiated revamp of logistic flow across cross-functional engineering teams
- Ran tests and collected data on different iterations of robot parameters, correlating performance with hardware changes
- Developed a dataset to collect and parameterise output quality for training a computer vision model

PROJECTS

Presence (indoor localisation) **Jan 2025 - Nov 2025**

- Collaborated with Bang & Olufsen to design a distributed system to track users in an indoor environment
- Built complete Sensor Fusion pipeline for UWB sensors with Pose Graph Optimisation
- Lowered absolute positional error across system by 5x

Improving GraphRAG retrieval through pruning **Aug 2025 - Nov 2025**

- WING @ NUS NLP research group's CS6101
- Scoring of nodes to prune a graph generated by microsoft's graphRAG
- Running evaluations on Single and Multi-hop QA datasets in the medical domain (PuibMed QA & Medhop datasets)
- Achieved 41% decrease in retrieval time with 3.1% better retrieval (recall@k) with Crumbtrail pruning, reducing graph density by 74.98%

Robotics **Apr 2024 - Present**

- Guided projectile launcher + simulation for DJI Robomaster
- Reinforcement Learning for Drone racing (Google Genesis Sim)
- Collaborative SLAM with drone swarm (Gazebo, ROS2)

TECHNICAL SKILLS

- Multi Agent Orchestration (A2A, Google ADK, Langchain), Pytorch
- Information Retrieval (PQ optimisation, Knowledge Graphs, HNSW), Retrieval Augmented Generation
- Devops, Networking, Distributed systems
- ROS2, Genesis Simulation environment

CO-CURRICULAR ACTIVITIES

- NUS Varsity Tennis, Interfaculty games captain
- Residential College 4 House Committee