

EDUCATION

Nanyang Technological University, Singapore Renaissance Engineering Programme

Aug 2023 - Apr 2027

- Specialization in Computer Science
- Master of Science in Technology Management

WORK EXPERIENCE

DSTA

May 2023 - Jul 2023

Software Intern, Computer Vision Team

- Evaluated computer vision-based security systems in live, large-scale event settings (up to 1000 pax), deploying person re-identification and facial recognition technologies to detect potential threats.
- Contributed to the deployment of surveillance enhancements during NDP 2023, improving identification accuracy in high-traffic, occluded crowd environments.
- Applied and benchmarked state-of-the-art deep learning models including **ArcFace** and **AdaFace** for real-time recognition tasks.

NTU-A*STAR Research

May 2024 - Jul 2024

Research Intern (3D Diffusion & Generative Models)

- Engineered and benchmarked 3D generative pipelines (SDFusion, Diffusion-SDF, DreamFusion, Magic3D), optimizing model fidelity, controllability, and generation speed for production-ready 3D assets.
- Evaluated models' ability to capture concrete attributes (e.g., 3-legged vs. 4-legged chairs) and abstract styles (e.g., vintage vs. modern cars)
- Generated 3D meshes, repaired artifacts using Blender, and prepared models for mass production via PLA and resin 3D printing
- Showcased final printed 3D artifacts at the IEEE Conference 2024

DSO National Laboratories

May 2025 - Aug 2025

AI Research Intern (LLM Reasoning & Inversion)

- Integrated **System 2-style fine-tuning** with **context-parametric inversion** research to improve factual reasoning in large language models.
- Designed and implemented novel reasoning augmentations including **summarization**, **salient fact extraction**, and **knowledge correction** techniques to refine parametric memory.
- Contributed toward advancing interpretability and reliability of LLM responses through modular cognitive pipelines.

ACCOMPLISHMENTS

- **Google AI Hackathon 2024 – 3rd Place**
Designed an image-to-speech translation system that converts medical documents into dialects commonly used by elderly patients, improving accessibility in healthcare.
Technologies: Speech-to-text, text-to-speech, dialect translation models
- **LTA Hackathon – 3rd Place**
Developed a real-time safety alert system to notify both cyclists and pedestrians when bicycles encroach on pedestrian paths. Aimed at enhancing shared path safety in Singapore.
Technologies: YOLOv5, Flask, WebSockets, GPS integration
- **E-Waste Recycling & Community Platform**
Created a web app that helps users locate nearby electronic waste recycling points. Integrated a Reddit-like forum for questions and discussions, with sentiment analysis for harmful content moderation.
Technologies: React, Flask, PostgreSQL
- **HACKX 2024 – Autonomous Ship Berthing System**
Engineered a smart system to assist with autonomous ship berthing, combining real-time computer vision and hardware control.
Technologies: Arduino, YOLOv5, React, Flask, 3D Printing
- **Support Donation Recovery Platform**
Created a platform to aid individuals recovering from addiction through donation-based support. Integrated OpenLedger's Open-Payment API for secure transactions and featured recovery tracking dashboards.
Technologies: Flask, PostgreSQL, OpenLedger API

- **AngelHack 2024 – Volunteer Connect Platform**
Built a web-based platform to match volunteers with community initiatives and help organizers source manpower efficiently. Integrated NLP for matching and automated communication.
Technologies: React, Flask, PostgreSQL, NLP
- **SUTD What The Hack 2023**
Developed a voice-powered mobile payment assistant tailored for elderly users, reducing UI complexity through speech interface.
Technologies: Speech-to-text, text-to-speech
- **Telegram Matchmaking Bot**
Built a Telegram bot that connects users based on social compatibility and food preferences.
Technologies: Flask, PostgreSQL

RESEARCH WORK

Undergraduate Research Experience on Campus (URECA)

Aug 2024 - Dec 2024

Research on Real-Time Semantic Segmentation for Autonomous Robots

- Developed real-time vision system integrating YOLOv11 tracking with semantic segmentation (DeepLabV3+, MobileNet), improving segmentation accuracy and temporal consistency in dynamic environments.
- Improved segmentation accuracy and temporal consistency in dynamic environments such as Cityscapes
- Achieved strong generalization to unseen datasets (e.g., VSPW) with zero-shot domain transfer capability
- Enhanced performance over baseline models without additional fine-tuning on new domains

SKILLS

- Languages: Proficient in English, Chinese
- Technical skills: C, Java, Python, React, Flask, SQL, AutoCAD, Microsoft Office