

## WORK EXPERIENCE

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**NUS Office of Internal Audit, AI Engineer Intern****Sep 25 - Present**

- Built internal tooling to detect fraudulent invoice PDFs using spaCy-Layout for OCR, PyMuPDF for metadata extraction, document similarity analysis using TF-IDF and cosine similarity, and PDF history via xref table extraction; containerized with Docker and presented via Gradio.

**Changi Airport Group, Machine Learning Engineer Intern****May 25 - Aug 25**

- Improved taxi passenger demand forecasting at Terminal 3 by applying time series decomposition and feature engineering to XGBoost, increasing accuracy from 48% to 62%. Deployed models with CI/CD using BitBucket, AWS CloudFormation, ECR, and Lambda.
- Performed EDA and critical path analysis on 18,000+ flight turnarounds to identify ground-crew bottlenecks, delivering reports and recommendations that reduced departure delays.
- Developed an automated data pipeline on Amazon SageMaker with bash scripting to integrate flight arrivals, baggage, and passenger flow data, cutting monthly data processing time from 12 to 8.5 hours and enhancing debugging through improved logging.

**Cisco-NUS Accelerated Digital Economy Corporate Laboratory, Research Assistant****Jan 25 - May 25**

- Implemented DEEPSort with YOLOv8 for lightweight real-time human detection and tracking using overhead fisheye footage, achieving 84% mAP accuracy at 15FPS.
- Developed a data pipeline to convert corrected video feeds into standardised JSON for low-latency bounding box streaming in motion analysis digital-twinning applications.

**Rockship, AI & Computer Vision Engineer Intern, NUS Overseas College Vietnam****Jan 24 - Jun 24**

- Built a [RAG pipeline](#) using Langchain and ingest 50+ publicly available n8n workflows to generate simple n8n workflows. Leveraged LangSmith to enhance observability through performance monitoring of agent workflows.
- Developed and deployed robust, scalable LlamaIndex RAG APIs for text and image embedding with built-in OCR safeguards, adopted as boilerplate by internal engineering team to accelerate prototype development.
- Improved YOLOv8 object detection mAP by 20 percentage points and integrated model within an ARKit iOS Swift app for precise alignment and distance measurement of nails on wall.

**DSTA Land Systems, Robotics Engineer Intern****May 23 - Jul 23**

- Integrated VSLAM RTAB-Map algorithm for simultaneous mapping and localisation on DJI's Robomaster platform.
- Built a centralised framework to coordinate multiple robots, leveraging ROS and MQTT for real-time comms.

## PROJECT & HACKATHON HIGHLIGHTS

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**Personal Website with RAG Chatbot | [Github Link](#)****Oct 25 - Nov 25**

- Built a Retrieval-Augmented Generation (RAG) chatbot using custom content retrieval (from my website's pages) and LLaMA 3.1 via Groq-SDK API to deliver context-aware, AI-driven responses on my personal website.

**AISG National AI Challenge 2024 (Top 3) | [Github Link](#)****Feb 24 - May 24**

- Engineered Chain-of-Thought prompts for GPT-3.5-turbo within LangChain, delivering detailed and user-friendly fraud warnings and explanations for email analysis.
- Integrated Gmail API into a Chrome extension to securely retrieve and analyse email messages, enabling seamless access for real-time fraud detection and future user-facing features.

## EDUCATION

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**National University of Singapore****Jul 25 - Present***Master of Science, Data Science and Machine Learning (Full-Time)*

- Relevant Coursework: Scalable Distributed Computing for Data Science, Data Science in Quantitative Finance

**National University of Singapore****Aug 22 - Jul 25***Bachelor of Engineering, Major in Computer Engineering*

- GPA: 4.51 / 5.00 (First Class Honours)
- Engineering Scholarship Programme – scholarship awarded to the top engineering students in NUS.
- NUS Computing Club - Project Director of LifeHack 2023 | Residential College 4 - Open House 2023 Programmes Sub-Comm, Freshmen Orientation 2023 Photographer & Videographer | E-Scholar Comm - Web Developer

## TECHNICAL SKILLS

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- Programming Languages - Python, C, C++
- Web - Next.js, Node.js, TypeScript, FastAPI
- Database / Data Visualisation - MySQL, Tableau, MongoDB, Supabase
- AI / ML - PyTorch, TensorFlow, OpenCV, NumPy, Pandas, PySpark, CoreML, scikit-learn, NLP, Generative AI, LoRA, Fine-Tuning LLM, LangChain, LlamaIndex, Agentic AI, RAG, Prompt Engineering, MLOps
- Cloud - AWS, Google Cloud Platform (Professional Machine Learning Engineer Certified)
- DevOps - Docker, Github Actions, Git
- Others - Computer Networks, Data Structures & Algorithms, RTOS, ROS, MQTT