Matthias **Ong**

INFORMATION TECHNOLOGY | SOFTWARE ENGINEER | AI ENGINEER

Carlton, Victoria, 3053, Australia

☐ (+61) 0413 055 314 | ✉ matthias@ong.slmail.me | 🏠 matthias-ong.github.io | ⊙ github.com/matthias-ong | in

www.linkedin.com/in/matthias-ongse

Summary

Current Master of Information Technology student at University of Melbourne with a deep passion for software engineering and AI looking for an internship role. Completed paid internships as a software engineer and AI Project intern. Always learning and geeking out in my free time.

Education

University of Melbourne
Melbourne, Australia

MASTER OF INFORMATION TECHNOLOGY (ARTIFICIAL INTELLIGENCE SPECIALISATION)
Jul. 2024 - Jun. 2026

- **Current WAM:** 87%
- Got an **Engineering and IT Graduate Scholarship** which is offered to talented students in Engineering or Information Technology.
- **FEIT Hackathon Festival 2024 Runner-up**, won a $3000 price for our solution, EcoQuest, a platform designed to encourage sustainable actions among hotels, investors and guests through utilities consumption analytics, gamification and transparency.
- **Relevant Coursework:** Software Processes and Management, Cloud Computing, Artificial Intelligence, Machine Learning, Database Systems

Singapore Institute of Technology, Joint Degree w/ Digipen
Singapore

B.S. IN COMPUTER SCIENCE W/ HONOURS WITH HIGHEST DISTINCTION
Sep. 2020 - May. 2024

- **GPA:** 4.55/5 (Honours with highest distinction)
- **SiTizen Ambassador** - Student Leadership under Community Leadership And Social Innovation Centre, roles include emceeing, hosting, planning and running various school events.
- **Teaching Assistant** - Taught students CSD2160 Operating Systems and CSD2181 Data Structures, conducted weekly consultations and grading
- **Overseas Immersion Programme** - Completed 12 weeks of study in Redmond, WA, USA
- **Relevant Coursework:** Game Development, Calculus, Linear Algebra, Computer Graphics, Modern C++ Design Patterns, Mobile Development

Work Experience

DSO National Laboratories
Singapore

AI PROJECT INTERN
Aug. 2023 - Apr. 2024

- Built a reinforcement learning (RL) simulation environment to test cybersecurity network configurations with RL AI agents, using Microsoft's CyberBattleSim, OpenAI Gym, Python.
- Simulated a Windows Active Directory network, Microsoft servers, Sharepoint, Exchange, file server, clients, etc.
- Successfully trained a reinforcement learning attacker agent to model a real-world attacker.
- Analysed attacks results and performed data visualisation to report findings to supervisor.

Ministry of Home Affairs, Singapore
Singapore

SOFTWARE ENGINEER INTERN
May. 2023 - Aug. 2023

- Developed an internal full-stack cross-platform app (iOS, Android, Web) using HTML, CSS, TypeScript, React, Ionic Framework and Google Cloud Firebase and more to improve quality of life of officers.
- Researched and prototyped a custom AI-powered web application on internal datasets using LangChain, Azure OpenAI API and Python for future organisational use.

Projects

FEIT Hackathon Festival 2024 Runner-up
Sep 2024 - Sep 2024

3-DAY HACKATHON IN A TEAM OF 5, TEAM GREEEN

- Won a $3000 price for our solution, **EcoQuest**, a platform designed to encourage sustainable actions among hotels, investors and guests through transparency and gamification. Proposed an app utilising utilities consumption analytics, generative AI prompts for gamified challenges
- Made UI/UX wireframes on Figma to pitch to stakeholders
- Achieved the "Greatest Social Impact Award" Airwallex Hardware Prize Winner
- Achieved the "Best Team Synergy" Telstra Hardware Prize Winner

AllyAlley *Apr 2024 - Apr 2024*

SOLO FULL-STACK WEB APP PROJECT, FLASK SOCIAL MEDIA WEB APPLICATION

- Social media site with user authentication, uploading, deleting, commenting, liking photo and video posts
- Made with Flask, HTML, CSS w/ Bootstrap, JavaScript, Python, AJAX, SQLite, hosted on PythonAnywhere

MovieCompanion *Mar 2023 - Mar 2023*

SOLO MACHINE LEARNING PROJECT, CUSTOM HYBRID MOVIE RECOMMENDER IMPLEMENTED IN PYTHON

- Performed data cleaning and processing on the MovieLens dataset
- Implemented, evaluated and tested a hybrid ML algorithm (Content-based + Collaborative filtering)

CaptainJumperBoy *Feb 2023 - Feb 2023*

TEAM OF 5, 2D MOBILE PLATFORM GAME IN KOTLIN FOR ANDROID

- Implemented SQLite local database using Android Room to store highscores
- Implemented Physics, gameplay features, helped to use accelerometer, touch sensors for game controls
- Used Android architecture components, Coroutines and LiveData

Iconoclasm *Apr 2022 - Apr 2023*

TEAM OF 10 CONSISTING OF DESIGNERS AND CODERS, CUSTOM C++ 3D GAME ENGINE + RPG HACK & SLASH GAME

- Custom C++ 3D game engine + hack & slash game made using it
- 3D Physics programmer, integrated engine with PhysX, debugging
- Graphics programming with Freetype Font library & OpenGL