Lim Tze Kai

PERSONAL DETAILS

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EDUCATION

Singapore Institute of Technology - University of Glasgow   **2024 - Present**
Bachelor of Science with Honours in Computing Science

> **Related Coursework:** Computer Networks, Embedded Systems, Cloud Computing, Web & Software Development, Operating Systems, Database Systems, and Internet of Things
> **Award:** Best Overall Project for Airport Design Innovation (Overseas Immersion Programme 25)

Republic Polytechnic   **2019 - 2022**
Diploma in Aviation Management

> **Related Coursework:** Internet of Things, Airport Planning and Design, and Airport Management
> **Award:** Module Prize in Airport Planning and Design, REPUBLIC Award, Director's Roll of Honors for 2021 / 2022

Relevant Experience

Singapore Armed Forces   **Sep 2022 – Aug 2024**
Platoon Commander

- Lead and manage BELREX, overseeing operational readiness and training deployment.
- Enforcing standard, safety, discipline and soldier's welfare.
- Digitalise processes to improve accuracy and efficiency in administrative tasks.

Achievement: NSF of The Year (2024), 9th Div Sergeant Major Coin

Sub-Role: Head of Unit Drone Simulation Training Centre

- Built and led the Drone Training Centre from the ground up, defining training standards
- Designed custom Digital Twin maps in Velocidrone to replicate real-world operational areas, significantly enhancing drone operator training realism.

Changi Airport Group   **Sep 2021 – Jul 2022**
RPA Developer

- Execute Robotic Process Automation (RPA) by designing process workflow, programming RPA automation, testing, ensuring quality and maintenance of RPA code.
- Created and maintained documentation, including process design and technical solutions.
- Collaborated with process owners and SMEs to assess automation feasibility.
- Developed low-code application using PowerApps and Power Automate.

Projects

Changi Airport Terminal 4 Simulation (Roblox) – Developed and operated a multiplayer virtual simulation of Changi Airport Terminal 4 on Roblox, achieving 100,000+ unique players through self-directed development.

Lunar Rover (Space Challenge) - Conceptualized perception system for autonomous lunar navigation by integrating LiDAR sensor fusion, SLAM, and AI for real-time mapping in GPS-denied environments.

CAVE Spatial.io (VR Simulation) - Engineered a high-fidelity digital twin of Changi Airport's Co-Working Space using Unity to host a global VR exhibition showcasing robotics and automation innovations.

Wildlife Tracking Application – Developed a GPS-integrated PowerApps solution for Seletar Airport to digitize wildlife dispersal audits and ensure compliance in operator patrol tasks.

Heat-Acclimatisation Application – Built a safety-critical AppSheet platform to monitor soldier acclimatization, using automated logic to eliminate manual calculation errors in training safety protocols.

Flight Routing Machine – Developed a high-efficiency Python search algorithm for travel data processing, integrating a Streamlit frontend with REST APIs and backend logic for real-time results.

Neighbourly – Architected a cloud-native community engagement app for the elderly using AWS Amplify and EC2, implementing a MongoDB database to ensure scalable backend performance.

CoAP IoT System – Engineered a lightweight M2M communication system using C and Pico SDK to facilitate efficient, low-power messaging between embedded hardware components via the CoAP protocol.

After-Sale Management System – Built an automated case management platform using AWS S3, CloudFront, and RDS to streamline customer and supplier communication and optimize post-purchase support workflows.

Drone Programming – Developed autonomous flight scripts and control commands for the DJI Tello drone to perform precise aerial manoeuvres and navigation tasks.

Technical Skills

Programming: Python, Lua, C, Java, SQL, Rust, Kotlin, Assembly
Robotics & IoT: Embedded System, CoAP, Drone Operations (UAV), Linux CLI
Tools & Platform: GitHub, Docker, REST APIs, UiPath, Microsoft Power Platform, Microsoft Office
Design & Media: Canva, Paint.net, Roblox Studio

Volunteering & Leadership Experience

SIT Aviation Society   **Sep 2024 – Present**
President

- Founded and lead a community of aviation enthusiasts in SIT.
- Organized events including flight simulations, drone workshops (photography, programming), industry visits, safety workshops and networking sessions.
- Developed strategic initiatives to drive membership growth and increase student engagement.