Lucas Leong

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EXPERIENCE

Software Engineer Intern — Aug. 2025 – Oct. 2025
Precix — *precix.io*
- Explored reverse engineering of proprietary ultrasound firmware DLLs and OpenCL kernels to study real-time medical imaging pipelines using IDA Pro and windbg
- Developed embedded C firmware for IMUs and ultrasound probes, implementing multithreaded data acquisition and wireless transmission on Raspberry Pi CM5 and ESP32-P4/C6.
- Prototyped end-to-end system integrating sensor and imaging data into an ElysiaJS backend with a Svelte-based frontend for real-time visualization using websockets.

Software Developer — Feb. 2024 – May. 2024
eas-ai.com
- Developed a full-stack web application using NextJS, Prisma, PostgreSQL and Docker, providing a platform for funeral parlors to sell funeral packages for customers
- Ensured timely delivery of product by completing sprint tickets and helping colleagues with blockers using Jira.
- Worked in an agile and fast paced environment with multiple colleagues and stakeholders closely to facilitate cross disciplinary coordination

PROJECTS

HackOMania 2025 | *React Native, Flask, SQLite, OpenAI Vision API* — Feb. 2025
- Developed a full-stack React Native mobile app for HackOMania 2025 hackathon, enabling users to share food images, analyze nutritional content, and track health scores.
- Integrated OpenAI Vision API with Flask backend to perform AI-driven food image analysis and calculate health scores for user posts.

Balatro Neural Network | *Python, Lua, Smods, Lovely Injector* — Feb - May 2025
- Developed a Balatro game mod with Smods and Lovely Injector that connected to a Python server for automated gameplay.
- Implemented a client-server system using Deep Q-Learning to process game state and make real-time in-game decisions.

Serotonin | *Objective-C, C, SwiftUI* — Jan. 2024
- Published open source project on GitHub gaining over 650 stars and over 65,000 downloads
- Created a semi-jailbreak for iOS 16.0-16.6.1 on GitHub, allowing users to free their devices
- Used new technique with kernel read/write to hijack launchd execution

AI News App - Hack&Roll 2024 | *Flutter, Dart, Flask* — Jan. 2024
- Created a news app in Flutter that utilises sentiment analysis to determine whether a news article was positive or negative during Hack&Roll 2024.
- Helped create Flask server that used a sentiment analysis model to read news articles and determine their positivity.
- Used BeautifulSoup to scrape news articles from CNA for in-app previews of news articles.

BrainHack - TIL-AI | *Jupyter, Docker, Python, TensorFlow* — June. 2023
- Achieved 8th place in BrainHack TIL-AI semifinals in team "unsupervised learners"
- Leveraged Docker Compose to containerise AI projects to run remotely on physical robot hardware
- Finetuned vision models to fit zero shot object detection

SKILLS

Languages: Python, JavaScript, TypeScript, C, C#, Bash, Kotlin
Technologies: React, Node.js, Flask, NextJS, Ant Design, FastAPI, Linux
Developer Tools: Git, Docker, Vercel, Snowflake
Design: Figma, Canva

EDUCATION

Nanyang Polytechnic — Singapore, Singapore
Diploma in Information Technology — *Apr. 2023 – Apr. 2026*