

Liam Christian

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EU, UK, CANADIAN Citizen

EDUCATION

City, University of London

Bachelor of Science in Computer Science

London, UK

Sep. 2025 – May 2028

EXPERIENCE

Computer Vision Engineer

2025 to 2026

NATO SAPIENCE Autonomous SAR Project

- Led perception software development for a custom 5kg autonomous search and rescue octocopter, securing 1st place in the year long NATO SAPIENCE competition against four international universities during a live disaster simulation in Katwijk, Netherlands.
- Engineered a real time multi sensor fusion pipeline (IR, RGB, LiDAR) deployed on an NVIDIA Jetson Orin Nano, enabling robust GNSS denied navigation, decentralized multi agent teaming, and automated triage execution.
- Architected and optimized object detection, instance segmentation, and spatial tracking pipelines using YOLO, ByteTrack, and the Segment Anything Model in C++ and Python.
- Built automated data pipelines to train models on high performance computing clusters using Slurm and Apptainer, supplementing real world data with high fidelity synthetic scenes generated in Unreal Engine to improve edge case resilience.

Head of Firmware

2025 – Present

University Formula Student Team

- Leading a team of 6 software and firmware developers in the design, development, and testing of the vehicle's embedded control systems.
- Engineered the team's core Hardware in the Loop testing tool, a GPS simulator for validating navigation systems. The tool simulated realistic vehicle dynamics (NumPy, SciPy) and could intentionally generate faulty data streams to stress test system resilience before streaming to the vehicle's CAN network.
- Developed the real time data acquisition and analysis pipeline, processing CAN bus telemetry and using a live visualisation dashboard to help diagnose faults and inform engineering decisions.

PROJECTS

NASA Space Apps Challenge | *Python, OpenCV, React, JavaScript*

- Achieved **first place in the United Kingdom** in a 48 hour hackathon by co-developing a prototype for an autonomous hydroponics system for a Mars mission.
- Contributed to both the back end computer vision system using Python and OpenCV, and the front end monitoring dashboard using React and JavaScript.

Spotify Rust Web Client | *Rust, WebAssembly (WASM), Egui, Spotify API, OAuth 2.0*

- Engineered a high performance web client by compiling a Rust codebase to WebAssembly, securely interfacing with the Spotify API via the OAuth 2.0 authorisation flow.
- Designed and implemented a custom, tileable windowing interface using egui to solve a key user experience limitation in the official Spotify client.

Sainsbury's Product Scraper | *Python, MySQL, Multithreading, Data Pipeline, Reverse Engineering*

- Created a multithreaded Python scraper to process over 40,000 products daily, creating an automated data pipeline to track price history and identify significant discounts.
- Designed a robust data normalisation system to handle complex and inconsistent pricing data for reliable storage in a relational MySQL database.

TECHNICAL SKILLS

Languages: Python, Rust, C++, JavaScript, TypeScript, Java, SQL, HTML/CSS

Machine Learning & Vision: PyTorch, YOLO, SAM, OpenCV, Multi-Sensor Fusion, NumPy, SciPy

Embedded & Robotics Hardware: NVIDIA Jetson, CAN bus, LiDAR (Ouster), Pi Zero

Developer Tools & OS: Git, Docker, Linux (Ubuntu, Bash), Tailscale, VS Code, IntelliJ, Windows

Web Dev & Databases: React, WebAssembly (WASM), Egui, MySQL, PostgreSQL