

Tom Lam

Computer Science Student | Machine Learning Enthusiast

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SUMMARY

- Second-year computer science student with a passion for machine learning and computer vision
- Familiar with web development and ML frameworks, e.g. Next.js, React, Django, FastAPI, PyTorch

EXPERIENCE

Perception Team Lead

Nov 2024 – Present

Bristol Formula Student AI, University of Bristol 🌐

Bristol, UK

- Trained a custom YOLO model on the FSCOCO dataset to detect traffic cones
- Developed Python scripts for data preprocessing, augmentation, and automated dataset ingestion workflows
- Benchmarked detection performance and contributed evaluation results to the Autonomous Design Report
- Built a 3D cone localization system by integrating YOLO detections with ZED stereo depth in a ROS2 node
- Optimized and deployed camera configurations for the ZED 2i using zed-ros2-wrapper during live competitions

PROJECTS 🌐

Bristol FSAI Website 2025-2026 (in development) | TypeScript, Next.js, Tailwind CSS | 🌐

- Spearheaded the development of the Bristol FSAI website, implementing dynamic content for team rosters, subteams, blog/news posts and events, along with reusable APIs for content retrieval
- Managed the full development cycle including local setup, development and production builds, static assets management, and deployed the site on Vercel for production.

ChronoChat | Python, Next.js, Tailwind, TypeScript, FastAPI, ChromaDB, Ollama, Whisper, CLIP, BLIP | 🎧

- Built a multi-modal RAG system that enables querying over YouTube and local videos using audio and caption
- Developed a full-stack AI application with a FastAPI backend and Next.js frontend, featuring real-time WebSocket chat and PDF/image support
- Integrated Ollama-powered local LLMs for reasoning, retrieval mode selection, and multi-video chat support with streaming markdown-formatted responses.

BristolLink | React, Django, Tailwind CSS, PostgreSQL, Heroku | 🌐

- Developed an anonymous match-making platform for Bristol University students during Valentine's Day 2025.
- Built RESTful APIs to handle token authentication and email verification system with automated notifications.
- Integrated PostgreSQL with the pgcrypto plugin for encrypted data storage, validated by a security report.

EcoSim | [BEST ML PROJECT — BRISHACK 2025](#) | Java, JavaFX | 🎧

- Developed an ecosystem simulator modeling animal hunting, fleeing and breeding behaviors in a group of 6.
- Featured procedural terrain generation with Perlin noise and predator-prey dynamics using Monte Carlo Tree Search (MCTS).
- Implemented a real-time graphical interface with event logging and population statistics using JavaFX.

EDUCATION

University of Bristol

Bristol, UK

B.Sc. Computer Science — **Y1 Grade: First Class (81%)**

Sep 2024 - Present

- Computer Architecture 81% | Imperative & Functional Programming 86% | Maths A (Discrete Maths) 52%
- Maths B (Linear Algebra) 95% | OOP & Algorithms 90% | Software Tools 83%

University of Warwick 🎓

Coventry, UK

International Foundation Programme in Computer Science — **Grade: Distinction (92%)**

Sep 2023 - Jun 2024

AWARDS & HONORS

Netcraft Prize

Top 10 First Year CS student at the University of Bristol 2024-2025

SKILLS

Programming languages: Python, TypeScript, C, Java, Haskell

Frameworks: Next.js, React, Django, Tailwind CSS, Matplotlib, NumPy, Pandas, PyTorch, Scikit-learn, OpenCV

Languages: English, Cantonese, Mandarin