

Tom Lam

Computer Science Student | Machine Learning Enthusiast

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SUMMARY

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

EXPERIENCE

Team Lead

Nov 2024 – Present

Perception Team, Bristol Formula Student AI, University of Bristol 🏠

Bristol, UK

- Trained a YOLO object detection model on the FSCOCO dataset for cone recognition
- Implemented a 3D cone position estimator using the trained model and ZED cameras in ROS

PROJECTS 🌐

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.

Scotland Yard AI | Java, JavaFX

- Developed AI agents for Scotland Yard using algorithms like One-Step Lookahead, Paranoid Minimax, Expectimax Minimax, and Monte Carlo Tree Search (MCTS), following OOP design patterns.
- Implemented optimizations including move filtering, delayed game state initialization and root parallelisation.
- Designed intelligent detective agents incorporating uncertainty handling and coalition reduction strategies.

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](#).

Claude-haskell | Haskell, Unit Tests | 🌐

- Developed an unofficial Haskell binding library for [Anthropic's Claude API](#)
- Supported text and media messaging, token counting, retrieving model details and batch processing
- Designed utilities and documentations for creating new custom API requests

Land Cover Segmentation with UNets | Python, PyTorch, Matplotlib, NumPy, ML | 🌐

- Implemented [UNet](#) and [ResUNet-a](#) in PyTorch
- Trained models to perform semantic segmentation on the Multi-Source Satellite Imagery for Segmentation Dataset on Kaggle

LeNet-5 from Scratch | Python, NumPy, Pillow, ML, Linear Algebra, Tkinter | 🌐 📝

- Implemented the LeNet-5 model from Yann Lecun's paper (1998) using NumPy
- Created a handwritten digit recognition app with my LeNet-5 model
- Implemented a primitive neural network library with a handful of NN modules

EDUCATION

University of Bristol

Bristol, UK

B.Sc. Computer Science

Sep 2024 - Present

University of Warwick 🎓

Coventry, UK

International Foundation Programme in Computer Science

Sep 2023 - Jun 2024

- **Grade:** Distinction (92%) - Pure Maths 97%. Further Maths 98%. Computer Science 90%.

SKILLS

Programming languages: Python, C, Java, Haskell

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

Languages: English, Cantonese, Mandarin