

# 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 functional programming
- 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 model for object detection on the FSCOCO dataset for cone recognition
- Implemented a 3D cone position estimator from the ML model and the ZED sensors 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.

### 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

## COURSES & CERTIFICATIONS

### IBM AI Engineering Specialization 🌟

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