

Education

Oct 2025 – Present **BA (Hons) Computer Science, *University of Cambridge***, St John's College
Current Average: 77% (First Class Honours equivalent, based on Jan 2026 Mocks)

Relevant Coursework:

- Algorithms I & II
- Operating Systems
- Machine Learning & Real World Data
- Mathematical Methods I & II
- Discrete Mathematics
- Foundations of CS (OCaml)
- OOP (Java)
- Digital Electronics
- Databases
- Graphics

2023 – 2025 **A-Levels, *University of Liverpool Maths School***

Grades: 4 A*s

Mathematics, Further Mathematics, Physics, Computer Science.

Technical Skills

Languages Python, Java, OCaml, C#, Bash, SQL

DevOps & Tools Linux (Debian/Arch), Git

Concepts Machine Learning (TensorFlow), Computer Architecture, Systems Design

Selected Projects

Summer 2024 **Data Science & Machine Learning, *YOZU (Company Supervised)***

- Commissioned to design and implement an AI model predicting pothole formation based on traffic and road surface data.
- Engineered a custom road surface index and architected an **attention-based neural network** using **TensorFlow**.
- Trained the model on extensive public datasets (Leeds City Council) integrating traffic volume and collision metrics, utilising strict **train/test splits** to ensure robustness.
- Achieved **~92% predictive accuracy**, delivering technical documentation and future integration strategies to executive stakeholders.

2024 **Sea-bed Survey Route Optimiser, *Crown Estate Hackathon (Winner)***

- Secured **1st Place** by engineering a multi-objective route optimisation engine for seabed surveying vessels.
- Implemented **Dijkstra's algorithm** in Python, integrating a live Weather API to dynamically penalise routes based on **tide and current resistance**.
- Engineered an interface with **OpenAI's API** to parse natural language route hazards (e.g., wildlife zones), optimising the final path for total viable distance.

2024 **Embedded Occupancy Estimator, *STEM Enrichment Project***, Liverpool

- Built a standalone occupancy tracking system using **C++ on an ESP32** microcontroller.
- Developed a **hybrid detection method** correlating Bluetooth (BLE) MAC addresses with camera-based motion triggers.
- Engineered a lightweight networking interface, serving **real-time JSON payloads** of captured device telemetry via WebSockets for external processing.

Leadership & Extracurriculars

2024 – 2025 **CS Enrichment Lead, *University of Liverpool Maths School***, Liverpool

- **Orchestrated and delivered** CS workshops for Year 12 students, covering practical programming, **algorithmic concepts**, and **game theory** (e.g., **Prisoner's Dilemma**).