Luke Guppy

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Education

University of Warwick
1st Class Honours in Computer Science (2021–2024)

Lawrence Sheriff School

Maths	A*
Computer Science	A*
Further Maths	A
Physics	A

(2019–2021)

Languages

- C++
- Java
- C#
- C
- Python
- Haskell
- JavaScript

Skills

- Data Structures
- Docker
- Git
- Linux
- Agile
- Communication
- Adaptability
- Problem Solving

Contact

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github.com/lukeguppy

PROFILE

Graduate Software Engineer with a 1st-Class Honours in Computer Science. My experience at Leonardo Helicopters and University has provided me with expertise in software and autonomous platforms, including the delivery of mission management systems demonstrated to defense stakeholders. I possess a strong and diverse technical skillset, with proficiency in C++, C#, Python, Git, and Docker, applied across domains from machine learning to autonomous mission control.

WORK EXPERIENCE

Graduate Software Engineer (Leonardo Helicopters) Aug 2024–**Present**
Autonomy, Technology and Innovation (May 2025–Present)

- Implemented **optimisation solvers for task assignment**, delivering a proof-of-concept capability that supports the development of scalable autonomous systems.
- Built **a python ROS 2/Docker drone simulation environment**, enabling prototyping of reinforcement learning and multi-agent autonomy for future mission systems.
- Designed and tested **behaviour tree architectures** for mission control, improving scalability and decision-making reliability in simulated operations.

Tactical Processing (Aug 2024–May 2025)

- Contributed to the **C++/Docker mission management system** for a prototype autonomous helicopter, developing decision-tree and objective management infrastructure later demonstrated to stakeholders.
- Built and validated **gRPC services** to ensure robust multi-system communication, supporting successful prototype integration and customer-facing demonstrations.

Work Experience (Metaswitch Networks) 2019

- Implemented and tested error checking for translation software during a two-week placement.

Dog Walker (Dogs Lead) 2015–2019

FINAL YEAR DISSERTATION (1ST-CLASS)

- Built a **PPO deep reinforcement learning agent** to control a car navigating a custom Unity simulation of traffic lights and other vehicles. Designed to have an extendable reward system for any additional behaviours.
- Utilised **C#, Unity, and PPO Deep Reinforcement Learning** to create an extendable reward framework, demonstrating the design and implementation of intelligent systems to solve complex problems.

OTHER PROJECTS

- **Small-scale LLM-style token predictor (Python):** A scaled down version of the common AI transformer systems behind ChatGPT and other LLMs. From scratch, this implements the same learning and predicting capability scaled down to a simple next word predictor.
- **AI Scheduling (Python):** Designed optimisation algorithms for dynamic pricing using discount criteria, balancing revenue and demand.
- **Delay-Tolerant Networking (C++, NS3):** Built and evaluated routing protocols for mobile nodes in intermittent connectivity, improving resilience and throughput.
- **Systems Development:**
  - C#: WPF wave diffraction simulator; project monitoring web app.
  - Java: Normalised database system; maze-solving algorithm; restaurant data structure system.
  - C: Packet sniffer for attack detection; in-terminal text processor.
  - Haskell: Wordle solver using probabilistic reasoning; Snake game with functional graphics.
  - JavaScript: Browser-based 3D game using THREE.js.

ADDITIONAL

Duke of Edinburgh (Bronze/Silver)
World Challenge expedition to Ecuador (planned, cancelled due to COVID-19)
Spanish (A2/B1).