Myles Foy

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Education

Durham University 2022 — Present (2026 graduation)

Bachelor of Science, Mathematics and Statistics

- I achieved an 83% average in my second year, putting me on track for a first-class degree.
- For my dissertation I used multi-agent reinforcement learning and Gibbs distributions to train simulated drones to effectively navigate complex environments.
- Relevant modules: Machine Learning and Neural Networks, Bayesian Computation and Modelling, Data Science and Statistical Computing, Statistical Inference, Statistical Modelling, Probability I/II, Markov Chains.

Work Experience

Operational Researcher Placement Student September 2024 — September 2025

Department for Work and Pensions

- Developed and maintained the Policy Simulation Model (PSM), a SAS-based static microsimulation model whose outputs influence the annual government budget.
- Significantly improved Universal Credit modelling by developing a logistic regression model and integrating it into the PSM to simulate claimant decisions.
- Led PSM training for other analysts to standardise policy costings and consolidate results across the department.

Personal projects

Robot Arm with Inverse Kinematics and Simulation temperancee.xyz/projects/robot_arm/

- Wrote an object-oriented analytical inverse kinematics solution for 5 and 6 degrees of freedom arms in Python, complete with a simulation using matplotlib.
- Designed and built a 3D printed robot arm using FreeCAD, controlled via a web app which communicates with a Raspberry Pi Pico programmed in MicroPython.

DIY Quadcopter github.com/temperancee/wayfinder

- Wrote an IMU driver in C and fused sensor data with a Kalman Filter implemented using FreeRTOS.
- Used KiCAD to design a PCB for the flight computer comprising unidirectional motor drivers, an IMU, a barometer, and a XIAO ESP32S3 microcontroller.

Volunteering and Societies

Code Club Oct 2022 — June 2024

- Organised and ran weekly after-school Code Club sessions at a primary school in County Durham, teaching children how to program in Scratch and with BBC Micro:Bits, as well as helping at sessions run at the university.
- Developed my ability to communicate complex topics to others, even young children.
- Won the 2024 Durham University Volunteer of the Year award for my work.

Durham University Spaceflight Society Oct 2022 — June 2023

- Designed and successfully launched a small model rocket with a sensor payload.
- Led our PCB design team for the 2023 National Rocketry Competition.

Skills

Programming Languages:

- Python - advanced language knowledge and experience with libraries including matplotlib, numpy, pandas, and pytorch.
- C - strong language knowledge, with FreeRTOS experience for programming microcontrollers.
- R - knowledgeable in data manipulation and visualisation using tidyverse packages, implementing machine learning models, and Bayesian modelling and inference.
- SQL - experienced with data manipulation. I frequently used SQL to perform ad hoc analysis during my time at DWP.

Technologies: Git (including CI/CD for my Hugo website), Linux, CAD modelling (FreeCAD), PCB design (KiCAD)

References available upon request