ADAM MORRIS

Professional Summary

Recent engineering graduate with a master's degree in Engineering Mathematics, combining mathematical theory, practical engineering and scientific computing skills to solve real-world problems. Seeking an opportunity to apply expertise and make a meaningful impact in the field. Passionate about embracing emerging technologies, such as Artificial Intelligence and Robotics systems. Strong work ethic, detail-oriented, and committed to delivering high-quality results. Eager to contribute to innovative projects and further develop as a professional engineer.

Work History

Demonstrator, 10/2023 to 05/2024
University of Bristol **-** *Bristol*
Role aiding Engineering Mathematics students in their Mathematical and Data Modelling projects.

- Displayed excellent results in the completion of this unit to be offered this role
- Provide academic support to groups of students including technical writing and methodologies
- Research and understand a range of unfamiliar topics in a short timespan
- Planning and organisation of meetings with multiple groups simultaneously

Research Engineer, 06/2023 to 10/2023
SportsViz **-** *Remote*
Research project investigating the impact of novel data interpretation and artificial intelligence on elite sports performance analysis with the Football association of Wales (FAW).

- Authored technical reports outlining the current literature on the subject and potential future plans for this work
- Engaged in professional work environments with a range of clients from different backgrounds
- Displayed examples of the technical capabilities of artificial intelligence and data analysis at the international sports level

Education

Meng, Engineering Mathematics, 09/2020 to 07/2024
University of Bristol **–** *Bristol*

- Master's Thesis: Anti-Aligning Robots
- Key Focuses: Artificial Intelligence, Robotics, Mathematical and Data Modelling
- Class: *1st (TBC)*
- Societies: Treasurer and Sports Secretary of Welsh Society

A-Levels, 09/2017 to 07/2019
Ysgol Gymraeg Ystalyfera Bro Dur **-** *Swansea*

- Mathematics (A*), Further Mathematics (A), Physics (A), Computer Science (A), Welsh Baccalaureate (A)

Example Projects

Master Thesis: Anti-Aligning Robots

- Built a dynamic Python agent-based model for simulating anti-alignment collective dynamics
- Ran data collection, visualisation and analysis of simulations to investigate emergent behaviours and key system parameters
- Ran experiments on a swarm of Kilobot robots to investigate translation of result to a real-world system
- Gained experience working in a professional environment at the Bristol Robotics Laboratory

Auto PID Tuning using Genetic Algorithms

- Programmed using Arduino/C/C++ on the Pololu 3pi+ Robot for straight line speed control
- Implemented a GA able to converge in less than 10 generations for both constant and changing demand
- Analysed performance based on average wheel speed of a GA produced PID controller

AI Aircraft Detection in Satellite Imagery

- Developed a Convolutional Neural Network model in Python using Tensorflow and Scikit-learn
- Utilised the state-of-the-art YOLO v7 model tuned to custom dataset
- Performed Principle Components Analysis to build a k-Nearest Neighbour predictor

Soft Skills

- Problem Solving
- Detail Oriented
- Leadership
- Team Collaboration
- Communication
- Time Management

Technical Skills

- Machine Learning and AI
- Multiple Programming Language
- Software Engineering Principles (including Git)
- Mathematical and Data Modelling
- Engineering and Physics Principals
- Scientific Computing and Data Analysis

Languages

Fluent (Speaking):

- English
- Welsh

Proficient (Programming):

- Python
- MATLAB
- LATEX

Exposure (Programming):

- C/C++/Arduino
- HTML & CSS
- SQL

Contact

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