
DAN BUXTON

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PROFILE

I am a driven and creative individual with a passion for Physics, Computer Science, and Mathematics. I have a strong ability to learn and adapt quickly, as well as work independently or as part of a team. I am looking for a challenging position in the field of technology, both in software and hardware, where I can use my skills to make a significant and creative contribution.

SKILLS

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| ✓ C# and Unity | ✓ Linux, Networks and Cloud Computing |
| ✓ Dart and Flutter | ✓ Fusion 360 and (FDM/SLA) 3D Printing |
| ✓ Javascript (Svelte, React Native, Tailwind) | ✓ Adobe Suite (particularly Photoshop) |
| ✓ Python (SciPy, Pandas, Matplotlib) | ✓ Electronics (particularly drones and Pi 3) |

EXPERIENCE

Eye of the Wind (Charter Tall Ship)

Trainee Deckhand | July 2023 - October 2023

Technology from Sage

Data Analyst Intern | May 2023 - June 2023

- Collated data from many sources and created dynamic tables and graphs.
- Used Python to automate data collection, clean up and scraping.

Events and Hospitality at Assembly, Underbelly and McLaren's on the Corner

Front of House/Ice Rink Marshal | August 2022 - January 2023

- Coordinated events of 500+ guests multiple times a day, ensuring safety and accessibility.
- Demonstrated excellent communication with guests and team members, often with radios.

EUSDC (Edinburgh University Skydiving Club)

Treasurer/President Volunteer | August 2019 - August 2022

- Managed accounts and budgeting while adapting to COVID-19 challenges.
- Led a successful team and expanded the club to over 100 members.
- Organised biweekly courses and hosted weekly socials to create a welcoming atmosphere.

Reaction Engines

Engineering Intern | August 2018

- Shadowed engineers and gained insights into project management and teamwork.
- Trained with 3D printers for rapid prototyping, this included both FDM and SLA printing.
- Learned to use SolidWorks for component creation, editing, and analysis.

QazaqAir Almaty

Engineering Intern | July 2016

- Assisted the engineering department of a fledgling airline.
- Learned about aircraft maintenance protocols and safety measures.

Wessex Water

Software Engineer Intern | June 2015

- Gained experience in quality assurance and developed applications and tools using C#.
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EDUCATION

University of Edinburgh | 2017 - 2022

2:1 MPhys in Computational Physics

- Masters in solid state magnetic material simulations for AI acceleration.
- Text Technologies for Data Science Best Project Award.
- Dissertation in simulating motile bacteria congregations and application in micromachines.

Supercomputing Course at Southampton University | June 2016

- Learnt about Supercomputing applications, including aerodynamics and material stress.
- Developed skills with Linux, embedded systems, and networked computing.

Bradfield College | 2015 - 2017

AABB Maths, Further Maths, Physics and Computer Science A Level

- A in EPQ on "Where in the Solar System should Humanity make it's next home?"
- Completed Gold, Silver, and Bronze Duke of Edinburgh Award
- Awarded McKinnon Academic Prize, Physics Prize, and Computer Science Prize
- Member of the School Fencing team and Model United Nations team.

PORTFOLIO

Logaroo - Logbook App for Sports and Activities



- Built a reactive logbook app using Flutter for deployment on Android, iOS, and web.
- Implemented a backend with Firebase for user authentication and a NoSQL database.

Wikipedia Search Engine - Text Technologies for Data Science Group Project



- Developed an inverse positional index to enable IR and TF-IDF searches on Wikipedia.
- Utilised word embedding search and the GPT-3 API for question answering.
- Optimized initial Python backend using C++ libraries, accelerating responses by 100 times and connected to React front end with Django.

Simulating 2D Magnetic Materials for Reservoir Computing - Masters Project

- Investigated the viability of CrBr₃ and CrI₃ as 2D magnetic materials for reservoir computing, a physics based AI training accelerator.
- Utilised an atomistic simulator to simulate and analyse their behaviour.

Genetic Algorithms - Natural Computing Partnered Project



- Created various genetic algorithms and a neural network for pattern matching.
- Conducted a comprehensive study on different methods, evaluating their pros and cons.

Dynamic Simulation of Bacteria for powering Micro Machines - Honours Project

- Utilised a smooth particle hydrodynamic simulator to investigate swimming bacteria and their potential use in bacteria-powered machines.
- Created programs to analyse and visualise bacteria concentrations and flux.

A New Adrift - Sandbox Unity Game Demo



- Developed a sandbox demo with fully customizable ship frames using a coordinate system.
- Created an island generator using a combination of marching cubes and waveform collapse.

Grover's Algorithm Simulation - Quantum Computing Group Project



- Developed a simulation of Grover's Algorithm, including qubits and quantum logic gates.
- Demonstrated the time complexity of Grover's Algorithm and provided a quadratic speedup compared to classical alternatives.

Two Medical Data Projects - OxfordHack and Hex Hackathon in Eindhoven

- One was a website for visualising diseases on a map using a medical database, the other was using Solidity and the Ethereum blockchain to store and send medical data.
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