

Ross Burns

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Profile

I'm a Physics student with a strong interest in data, programming, and problem-solving. My background in mathematical modelling and computational simulation has given me a solid understanding of how to turn complex data into clear, actionable insights. Through projects using Python, SQL, and tools like FastAPI and Power BI, I've built practical experience in developing analytical applications and working with real datasets. I enjoy combining scientific rigour with coding to create solutions that are both precise and reliable.

Education

BSc (Hons) Physics | *University of the West of Scotland* | Expected May 2026

- Expected Grade: 2.1/1st
- Engaged in advanced coursework across quantum mechanics, numerical analysis, and mathematical physics.
- **Dissertation:** *Investigating Summing Effects in High-Purity Germanium Detectors* — developed Monte Carlo simulations (GEANT4) and Python-based data analysis pipelines to quantify systematic summing effects and improve gamma-ray detector precision.

BSc (Hons) Sports & Exercise Science | *University of West of Scotland* | 2020

- Grade Achieved: 2.1
 - Focused on biomechanics, physiological performance analysis, and data interpretation.
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Technical Skills

- **Programming & Tools:** Python, SQL, FastAPI, React, Power BI, Excel, Linux, GEANT4, Git, VS Code
- **Data Analysis:** Data cleaning, visualisation, exploratory data analysis (EDA), statistical modelling, dashboard design
- **Machine Learning:** Feature engineering, model training, evaluation metrics (accuracy, F1, ROC-AUC)

Technical Projects

SwimSmart Tracker – Full-Stack Performance Analytics Tool

Developed and deployed a full-stack web app for swimmers and coaches to log and visualise training data using FastAPI, React, and SQL. Designed structured data models and automated dashboards for pace and RPE analysis with CSV export. Optimised queries and caching for speed and reliability, strengthening full-stack development, database, and data-visualisation skills through real-world application design.

Data Analytics Projects – Excel, Power BI, SQL, Google Sheets

Completed data analytics projects focused on cleaning, transformation, and interactive visualisation. Built dashboards and reports with SQL and Power BI to extract insights from structured datasets, improving analytical accuracy and the ability to communicate findings clearly.

Training Certificates

- **IBM Data Analyst Professional Certificate:** Comprehensive training in Python, SQL, and Power BI for data wrangling, visualisation, and analytical storytelling.
 - **Udemy Complete A.I. & Machine Learning Data Science Bootcamp (In Progress):** Covers supervised and unsupervised learning, feature engineering, data preprocessing, and model evaluation using scikit-learn and TensorFlow.
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Achievements & Experience

- **2× Court Medal Recipient** – Awarded for ranking top of cohort in both first and second year of the Physics degree.
- **Swimming Coach & Former Elite Athlete** – Over 20 years of competitive experience, including national and Commonwealth trials. Apply data-informed coaching and analytical thinking to performance improvement.
- **Lifeguard (6 Years)** – Responsible for safety and emergency response in high-pressure aquatic environments; developed strong teamwork and leadership skills.