

Marcus Turner-Wood

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Personal Statement

Eager and motivated third year Physics with Nuclear Science student with a strong interest in nuclear physics and its applications. Founder and President of the University of Liverpool Nuclear Society, working closely with the Nuclear Institute and helping to build a UK-wide network of nuclear societies. Selected for the Liverpool Enterprise and Leadership Academy and recognised for initiative, motivation, and a proactive attitude to learning. Affiliated the University of Liverpool with the nuclear institute.

Key Skills

- Python, machine learning, deep learning, and data analysis
- Complex problem solving, statistical analysis, and decision analysis
- Leadership, project organisation, and public speaking
- Strong networking skills, particularly within the nuclear industry
- Independent technical learning through personal projects

Education

University of Liverpool

09/2023 – Present

BSc Physics with Nuclear Science

Current average: 68%. Relevant interests include nuclear physics, detector physics, computational modelling, data analysis, and machine learning. Titles of projects completed in an academic setting are as follows:

- Gamma-Gamma Coincidence Spectroscopy of ^{175}Au : evidence for shape coexistence and a machine-learning coincidence interpreter
- Radioactive Waste Classification, Non Destructive Assay and the Role of Digital Twins
- Radio-isotopes in Fusion-Fission Hybrid Reactors
- Evaluating Applications of Machine Learning to FTIR Histopathology
- Pressure Sensitive Bed Sheet for falls and pressure ulcer management in hospitals. Made a predictor using machine learning based on position, sleep stage and weight distribution.

Further details of university projects available on request.

Liverpool Leadership and Enterprise Academy

01/2025 – Present

Selected student

Earned a place as one of 20 students selected from 180 applicants across the science and engineering departments, based on previous e-commerce experience and demonstrated leadership.

Churchill Academy and Sixth Form

09/2021 – 05/2023

A Levels and GCSEs

A Levels: Mathematics B, Physics C, Further Mathematics C. GCSEs: three grade 9s, four grade 8s, and two grade 7s, including Triple Science, Economics, French, Design and Technology, and Geography.

Leadership and Additional Experience

President and Founder, Liverpool Nuclear Society

Founded the society to bring together students interested in nuclear science and the nuclear industry. Organised guest lectures, presentation evenings, and career-focused activities, while also affiliating the University of Liverpool with the Nuclear Institute. Large and growing network of academics and industry professionals over the nuclear industry.

Nuclear Institute Educational Affiliate

Attended Young Generation Network talks and Nuclear Institute branch formal dinners, contributed to volunteer outreach, and supported country-wide networking between nuclear societies. Attended all of these alone with the purpose of meeting new and like-minded people.

Mentoring Scheme

Set up a sixth form mentoring scheme involving 28 students, providing academic support to younger and struggling

students. Used decision analysis to organise the project and successfully maintained mentorships for 26 of the 28 applicants. The programme was independently conceived and backed by middle and senior staff.

Public Speaking

Delivered assemblies to pupils about sixth form life, explained teaching techniques to prospective tutors, and presented to sixth form students about the application process for the tutoring scheme.

Gold Duke of Edinburgh Award

Took a leadership role during expeditions, including planning routes, food and drink rationing, campsites, emergency escape routes, and support for less able team members. Demonstrated calm decision-making and confidence in challenging situations.

Work Experience

Research of Plastic Scintillators with Medical Applications

06/2025

Sapienza University of Rome

Conducted research into detectors composed of layers of plastic scintillating fibres. Used Python-based analysis and incorporated machine learning techniques, then presented the work to a group of researchers and PhD students.

Quality Control Lab Technician

Summer 2024

Thatcher's Cider

Conducted tests and assessments on the quality of fruit, juice, and aromas during the blackberry season. Performed an average of ten tests per hour and reduced hourly test times by over 30% using decision analysis. Completed 12-hour day and night shifts while consistently arriving early or on time.

Front of House Member

07/2021 – 09/2023

Beefeater Pavilion, Weston-super-Mare

Worked in a customer-facing role over two years, developing communication, reliability, teamwork, and time-management skills.

Other Short-Term Roles

Data entry at an estate agency and manual labour for a local building company.

Personal Projects

- Python project for NeuWave involving code to track ships and extract information such as velocity, fuel usage, and route history. Also developed six online e-commerce businesses and received mentorship from an industry leader in the party and concierge sector.
- Blog containing articles I found to be important or interesting. Used HTML to present the blog and conducted research into topics such as: On Amanita Muscaria, Report on Lucretius: Physics, Philosophy, Poetic Form, and Influences, Epicureanism in the Modern Day and the Perversion of Hedonism, Report on the Effects of UKRI Funding Cuts, Dalí's Scientific Influences, A Guide to Materials for Fusion, An Economic Overview of STEP, On the Physics of Stellarators for the General Reader, and An overview of Europe's fusion reactors for the general reader. Website: <https://marcusturnerwood.github.io/>.
- Plasma modelling in a stellarator. Used the codes VMEC, Variational Moments Equilibrium Code, and SPFINCS, Stellarator Plank-Fokker Iterative NeoClassical Solver, to build a small PINN that predicted plasma confinement times from operating conditions and stellarator geometry.

Hobbies and Interests

Committed to a healthy lifestyle through weight training, running, boxing, and mixed martial arts. Passionate about hiking, especially in the Lake district, with multi-day expeditions completed in the Lake District and Dartmoor. Academic interests include physics, mathematics, philosophy, ancient history, mycology, literature, cinema, and surrealist art. Competed in a boxing match in front of around 500 people showing extreme composure against nerves and anxiety.