James Tufnail

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Education and awards

DPhil Materials Science (Nuclear Fusion CDT), Oriel College, University of Oxford 2022 – on

- Plan, write proposals, and conduct experiments on radiation damage of superconductors for fusion
- Collaborate with UK Atomic Energy Authority engineers to help design world's first prototype fusion reactor
- Teach 2nd year Maths for materials science and X-ray diffraction modules

MSc Nuclear Science and Engineering, University of Bristol 2021 – 2022

- Graduated as **top student** with 76% overall grade
- Thesis *"Investigating the post-weld heat treatment of Eurofer and castable nanostructed alloy welds for fusion."* awarded 77%.

BEng Materials Engineering, University of Exeter 2018 – 2021

- Graduated as **top student** with 79% overall grade and **two Deans Award's** for Academic Performance
- Thesis "The effects of steady-state and slow transient plasma heating on the microstructure and integrity of fusion grade CuCrZr." included my correlated thermo-mechanical ANSYS model and was **awarded 86%.**

Experience

FuseNet, Student Council Chair, Eindhoven University (voluntary work) 2024 – on

- Lead an international team of 7 young European fusion researchers in promoting the work of FuseNet
- Develop **networks with European researchers**, organisations, and industry, and aid in policy development
- Represent the voice of European students to Governing Body and Academic Council

European Nuclear Educational Experimental Programme, Czechia and Slovakia (1-month school) 2022

- Represented the UK as the British member of the ENEEP provided by Czech and Slovak Technical universities
- Worked with a team of 8 European nuclear physicists on experiments including **operating the VR-1 reactor**
- Presented results to head of Slovak Physics Academy and other eminent Czech/Slovak physicists

Design a Martian Nuclear Reactor Fleet, University of Bristol (6-month research project) 2021 – 2022

- Lead a diverse team of physicists, engineers, and geologists designing a nuclear reactor fleet
- Balanced and mediated varying enthusiasm and energy from group members towards a common goal
- **Lead the winning presentation** to the cohort and wrote and edited the project report, awarded **79%**

UK Atomic Energy Authority, Fusion Materials R&D, Culham (3-month internship) 2021

- Designed and developed novel material processing technique for testing of irradiated materials
- Reviewed, researched, and collated results into a report for senior engineers

Self-employed, Math and Physics Tutor, Oxford (part-time work) 2021 – on

- Network and develop relationships with parents and tutees from a range of backgrounds and ages
- Plan and deliver structured lessons, help with exams, and complete administrative and legal requirements

Skills and interests

Languages: English– native, French – conversational, German – conversational
IT: Advanced proficiency in Python (inc. machine learning) proficient in LateX, ANSYS, and CAD
Sport: College rugby team, University MMA (varsity), BJJ blue belt, ballroom dancing
Charity: Raised £1100 for Motor Neutron Disease by running a 44-mile ultramarathon