# Dylan Green

PhD Researcher | Department of Engineering Science
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PhD student at the University of Oxford researching floating wind turbine wake dynamics using high-performance computing. Interests include computational fluid dynamics and large-scale simulation, with a focus on applications to renewable energy engineering.

## Education

**PhD (DPhil) Wind & Marine Energy Systems & Structures** *2023–Present*
University of Oxford — Oxford, Uk

- Investigated the impact of floating platform motions on the floating wind turbine wakes using the Actuator Line Model (ALM).
- Developed and extended the in-house OpenFOAM-based ALM code.
- Performed high fidelity large eddy simulations using OpenFOAM on high-performance computing (HPC) clusters to resolve transient wake behaviour.
- Validated numerical model against open-source experimental results.
- Extensive use of ARCHER2 and ARC HPCs.
- Used Python and Paraview for data visualisation.

**EPSRC Centre for Doctoral Training** *2023–2024*
University of Strathclyde — Glasgow, Uk

- Short intensive courses providing a holistic understanding of offshore renewable energy engineering.

**MMathPhys Master of Mathematics & Physics with Honours** *2019–2023*
University of Manchester — Manchester, Uk

**Grade: First-class honours (82%)**

- Took a mix of applied and therotical courses focusing on continuum mechanics, numerical methods and scientific computing.
- MMath Project: *Finite Element Solutions to the Helmholtz Equation*. Developed a C++ finite element solver for the Helmholtz equation. Assessed boundary conditions for wave scattering problems, including perfectly matched layers, Dirichlet-to-Neumann maps, and approximate radiation conditions
- MPhys Project: *Quantifying Correlation Between Geometric Uncertainties in Rectum Contouring and The Resulting Patient Toxicity*. Applied a deep learning algorithm to standardize rectal contouring. Performed statistical analysis to determine the correlation between patient outcomes and contour deviations. Resulted in publication.

## Experience

**Conference Organiser** *2026–Present*
Wind & Marine Systems & Structures Centre for Doctoral Training — Oxford, Uk

- Organiser of student-led Future Wind & Marine Conference hosted in Oxford in April 2027.
- Responsible for fundraising and bookkeeping of event.

**Lab Demonstrator** *2025–Present*
Department of Engineering Science, University of Oxford — Oxford, Uk

- Supervised & supported several groups of 24 students in the material testing and computational labs.
- Assisted in experimental design, data interpretation and provided one-on-one support for algorithm design and debugging.
- Responsible for marking through interview style assessment

**Research Intern** *2022*
Manchester Centre for Nonlinear Dynamics, University of Manchester — Manchester, Uk

- Project: *Biometric Modelling of Retinal Injections* - Experimental work aimed at identifying nonlinear dynamics in retinal injections focusing on viscous fingering instabilities.
- Designed and executed fluid injection experiments, analysed and presented results to multi-disciplinary research team.

**Work Experience: Low Frequency Demand Disconnection Team** *2019*
National Grid — Warwick, Uk

- Worked as part of Low Frequency Demand Disconnection team wherein I utilised low-order models to optimise demand disconnection procedure during the event of generation failure. Produced report summarising effects of sudden generation failure on system stability.

## Skills

- **Programming** Python | C++ | C | MatLab | Linux
- **Build & Job Automation** bash | SLURM | Make | CMake
- **Data Analysis** Numpy | Paraview | VTK
- **High-Performance Computing** CUDA | HIP | MPI | MP
- **Type Setting** LaTeX| Beamer | Word
- **Version Control** Git | GitHub
- **CFD / Numerical Methods** OpenFoam | FEA

## Awards & Certificates

- **NVidia** - Fundamentals of Accelerated Copmuting With Modern CUDA C++
- **Zero Institute** - Climate Tech Hackathon First Place
- **University of Oxford** - Course on CUDA Programming on NVIDIA GPUs

## Publications & Presentations

- *Support Structure Impacts on Floating Offshore Wind Turbine Wake Aerodynamics* - Paper & Poster, The Science of Making Torque from Wind, Bruges 2026.
- *Energy & Momentum Transport in The Wakes of Floating Turbines* - Presentation, Recent Advances in Turbulent Wind Farm Dynamics Colloquium, London 2026.
- *Sensitivity of the Floating Actuator Line Method to Prescribed Motions* - Presentation, 21st European Academy of Wind Energy PhD Seminar PhD Seminar, Athens 2025.
- *Development and Validation of an Actuator Line Method for Floating Turbines* - Paper & Presentation, XI Conference on Computational Methods in Marine Engineering, Edinburgh 2025.
- *New rectum dose surface mapping methodology to identify rectal subregions associated with toxicities following prostate cancer radiotherapy* - paper, Physics and Imaging in Radiation Oncology 2025.