Alistair Murison

07930 356721 alistair.murison03@gmail.com
linkedin.com/in/alistair-murison alistairmurison.com

First-Class MEng Mechanical Engineering graduate from the University of Edinburgh with experience in mechanical design, component testing, analysis tools such as CFD and FEA, and engineering investigations. Industrial placement experience at Furrer+Frey developed my analytical problem-solving and technical reporting skills, and as President of Edinburgh University Motorsport Club I developed my leadership and project management skills. Seeking a graduate engineering role tackling complex problems, where I can work towards chartership with IMechE.

Education

MEng Mechanical Engineering — The University of Edinburgh Sept 2021 - May 2026
First Class with Honours *Edinburgh, United Kingdom*

- **Selected Modules:** Interdisciplinary Group Design Project, Computational Fluid Dynamics, Advanced Composite Materials, Structural Mechanics and Dynamics, Digital Manufacture, Project Management
- **Master's Thesis:** Engineering Design of Actuated Sensor Alignment Systems for Subsea Applications
- **Extracurriculars:** Formula Student, Motorsport Club, Hillwalking Club, Hyperloop Edinburgh, British Universities Karting Championship (BUKC)
- **Awards:** Services to Sports Award, Colours Award, Volunteer of the Month (x2), Edinburgh Award (x2)

Kinross High School Aug 2015 - May 2021

- **Advanced Highers:** AA, **Highers:** AAAAAAB

Experience

Edinburgh University Motorsport Club Nov 2021 – June 2026
President (May 2025 - June 2026), Vice-President (Dec 2023 - May 2025) *Edinburgh, United Kingdom*

- Led a committee of 13 to develop the Club's strategic direction, increasing membership by 43% in one year, contributing to the Club receiving the Col R.B. Campbell Most Improved Club award.
- Organised Scotland's first student-led Motorsport UK permitted Navigational Rally in a decade. Completed permit applications, sourcing of officials and marshals, and event management.
- Secured grant of £5,000 for competitive team gear, and a £6,000 multi-year sponsorship deal.
- Managed £22,000 of club equipment, procuring and selling equipment to modernise Club inventory.
- Represented the Club within the Scottish Association of Motor Sport Clubs at quarterly meetings and marshalled at Motorsport UK events, including the Mull Rally, Grampian Forest Rally and Extreme E.

Furrer+Frey GB Jan 2025 – July 2025
Undergraduate Engineer (7-month Industrial Placement) *Nottingham, United Kingdom*

- Industrial placement at rail electrification specialist, conducting engineering investigations, component and system testing, risk assessments and technical reporting.
- Led investigation into a non-conformance report following component failures. Identified incorrect casting method as the failure mechanism, communicated through reporting and client meetings.
- Built Excel calculation tool to calculate floor anchor bolt loading during structure loading and testing.
- Replaced poorly installed anchor bolts in onsite warehouse in inadequately thick concrete. Tested and rated to 50 kN in tension for future structure installation and testing. Previous ratings under 15 kN.
- Load-tested a composite cantilever prototype and spanwire arrangements, validating design for launch, and informing further design development and a computational allocation tool.

Edinburgh University Formula Student Sept 2024 – Jan 2025
Packaging and Distribution Systems Engineer *Edinburgh, United Kingdom*

- Developed electrical harness routing and component packaging for a Formula Student car, considering integration of electrical systems within the vehicle.

- Produced electrical wiring schematics in EPLAN for harness design, and designed a high-voltage battery container in SOLIDWORKS. Demonstrated at the IMechE competition at Silverstone.

Edinburgh Parallel Computing Centre June 2024 – Aug 2024
Advanced Computing Facility Mechanical Engineering Intern (Summer Internship) *Penicuik, United Kingdom*

- Produced plant room quick reference guides covering alarm procedures and component failure impacts for the 38MW Advanced Computing Facility, host of the UK's national supercomputer.
- Reviewed and updated plant and computer room drawings, creating two new schematics where documentation was missing using AutoCAD Plant.
- Worked with Energy Team to reverse engineer an electrical metering hierarchy to allow accurate recharging to clients based on component use.

Hyperloop Edinburgh (HypEd) Sept 2022 – Feb 2024
Friction Brakes Project Manager (Oct 2022 - July 2023) *Edinburgh, United Kingdom*

- Led the design process of an electrically and pneumatically failsafe friction brake system for HYPED's prototype hyperloop pod.
- Coordinated Mechanical, Electronics and Software teams through testing and pod integration.
- Design nominated for the Mechanical Subsystem Award at European Hyperloop Week.

Selected Projects

Engineering Design of Actuated Sensor Alignment Systems for Subsea Application | *Master's Thesis*

- Used CFD in STAR-CCM+ to model and validate tidal flow around a subsea sensor frame and gimbal assembly, identifying key flow features. Extracted hydrodynamic loading data to inform requirements.
- Developed a detailed mechanical design in SOLIDWORKS for a subsea actuator housing, including technical drawings and bill of materials.
- Applied FEA to assess structural integrity, pressure resistance and deflection to refine the design.
- Carried out component selection, material selection, sealing design and cost evaluation to deliver a manufacturable subsea concept balancing performance, reliability and cost.

Hyperloop Friction Brakes (Hyperloop Edinburgh) | *Student-led Hyperloop Team*

- Used SOLIDWORKS to prototype and simulate with Finite Element Analysis (FEA) to balance structural integrity, weight, and cost. Produced manufacturing drawings.
- Led manufacture, assembly and testing of brakes, lateral suspension, and active vertical suspension modules, working with workshop technicians to improve manufacturability.
- Completed the Testing and Safety Documentation, including risk assessments, test plans and reports, using Overleaf LaTeX, required to permit demonstration at European Hyperloop Week.

Offshore Wind Farm & Turbine Design | *University Individual Project*

- Used site wind data, measure–correlate–predict techniques and Rayleigh and Weibull modelling to assess offshore wind resource, inter-annual variation and estimate annual, and P90 energy yield.
- Redesigned an offshore wind farm layout using wind roses, turbine spacing and wake loss modelling, supported by mapping and site assessment of environmental, social and operational constraints.
- Scaled and evaluated a large offshore wind turbine in Ashes, generating performance and control curves, assessing aerodynamic loads and wake effects, and LCOE analysis.

Other University Projects: Ford Sigma 1.6L engine strip and rebuild | Gearbox group design project | CFD Simulation of a high speed Shinkansen in a tunnel | Heat exchanger design | Dual Rotor HAWT group design project | Computational model of aircraft flight dynamics in Python

Skills & Competencies

Software: SOLIDWORKS (8 yrs), STAR-CCM+, EPLAN, CATIA V5/3DX, Autodesk Fusion, AutoCAD Plant, SimScale, Python, eLamX2, Abaqus, LaTeX (4 yrs), Onshape, Autodesk Revit (2 yrs), ASHES, Microsoft Office

Technical Skills: CFD, Composite Design, FEA, Project Management, Reverse Engineering, Marine Energy, Vibration Dynamics, Control & Instrumentation, Technical Report Writing, Oral Presentations