

Alasdair C Gray

FINAL YEAR STUDENT, MEng MECHANICAL ENGINEERING

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Education

University of Edinburgh

Edinburgh, United Kingdom

MEng (HONS), MECHANICAL ENGINEERING, GRADE AVERAGE 79% (EQUIVALENT GPA 3.95)

September 2012 - Present

- Senior Discipline Representative for Mechanical Engineering in 4th and 5th years.
- MEng thesis, "Design, Manufacture and Testing of a Composite Crash Structure for a Formula Student Car".

University of California, Berkeley

Berkeley, California

UCEAP YEAR ABROAD

August 2014 - May 2015

- Awarded place on exchange program at UC Berkeley based on academic performance in first two years at Edinburgh.
- Achieved a 3.80 GPA placing in top fifth of College of Engineering.

Technical Experience

Artemis Intelligent Power Ltd

Edinburgh, UK

6 MONTH R&D PLACEMENT

Jan - Aug 2016

- Worked on multiple research and development projects.
- Designed, developed a simulation model of, created and tested a prototype for a new form of hydraulic compliance device.
- Took part in development program for new generation of piston and cylinder, ran testing program and suggested design changes.
- Developed updated design and worked with technicians to manufacture components for first working pump-motor.
- Performed testing on flow control device developed in previous placement, involved setting up, instrumenting and operating test rig.

Edinburgh University Formula Student

Edinburgh, UK

HEAD OF DESIGN REVIEW, SIMULATION LEADER AND DRIVER

Feb 2016 - Present

- Member of senior committee group in charge of reviewing component designs.
- Responsible for performing FEA on critical components and overseeing CFD activities.
- Performed first high fidelity CFD study on EUFS car.
- Primary driver at 2016 Formula Student UK competition.

Artemis Intelligent Power Ltd

Edinburgh, UK

SUMMER R&D PLACEMENT

May - Aug 2015

- Designed a unique flow control device for use in stiff hydraulic systems.
- Created a dynamic system simulation model of the device in Matlab's Simscape and assisted in developing a standardised simulation system.
- Responsible for acquiring parts and performing physical testing

Pelamis Wave Power

Edinburgh, UK

STRUCTURAL DESIGN PLACEMENT

Jun - Sep 2015

- Upgraded design of a davit mount to be welded onto metal hull, allowing for greater personnel capacity during maintenance operations.
- Designed a lightweight and portable hand rail system which fit into existing mounts on hull.
- Devised a new design for a cradle to hold next generation 230 tonne machines during construction.

Technical Skills

Programming

Matlab, Python (Self taught through MIT OpenCourseWare)

Simulation

Abaqus, Star CCM+, Simulink and Simscape, SU² (Stanford University Unstructured), Pointwise, Ansys, Solidworks Simulation, Autodesk CFD

CAD

Solidworks, SolidEdge

Office

Full microsoft Office Suite, LaTeX

Practical

Machining with lathe and 3 axis mill, general mechanical and hydraulic fabrication and assembly

Technical Projects

Design of Micro Systems

Edinburgh, UK

MENG GROUP DESIGN PROJECT

Autumn 2015

- Lead the macro-scale design for jet engine vibrometer, subject to space and operating temperature criteria.
- Designed housing, cooling system and device layout.
- Validated cooling system performance through multi-body CFD heat transfer study in Star CCM+ and system simulations in Simulink.

Design for Manufacturing Project

Berkeley, California

ME 122: PROCESSING OF MATERIAL IN MANUFACTURING

Spring 2015

- Directed group of 5 students in designing a portable hydro turbine with a focus on manufacturability.
- Conceptualised turbine design and lead weekly meetings.
- Designed components in Solidworks and performed analysis using Abaqus.
- Project received A+ grade.

Automated Vehicle Platooning Simulation Project

Berkeley, California

ME 131: VEHICLE DYNAMICS AND CONTROL

Spring 2015

- Created a vehicle platoon model with full powertrain dynamics in Simulink.
- Explored performance of various control methodologies on the behaviour and stability of a vehicle platoon.

Energy System Analysis Projects

Berkeley, California

ME 146: ENERGY CONVERSION PRINCIPLES

Spring 2015

- Series of projects using Matlab to simulate and optimise the performance of various energy production systems.
- Projects included analysis of Gas Solar Hybrid, Solar Water Heating, Photovoltaic/Thermoelectric and Wind Turbine Systems.

Wind Turbine Design and Fabrication Project

Berkeley, California

E26: 3D VISUALISATION AND DESIGN

Spring 2015

- Designed and 3D printed a small wind turbine.
- Created Matlab program to calculate blade angle and chord length distributions.
- Compared tower designs in Abaqus.
- Turbine produced most power in class.

Other Experience

University of Edinburgh

Edinburgh, UK

SENIOR DISCIPLINE REPRESENTATIVE

Sep 2015 - Present

- Responsible for leading student representation within the Mechanical Engineering Department.
- Convene and chair the Staff Student Liaison Committee.
- Represent the student body at discipline committee meetings.
- Founded series of annual social events to improve staff-student relations.
- Currently working to create system to award academic recognition for students' extracurricular engineering work.

Edinburgh University Students' Association

Edinburgh, UK

HOUSE TEAM MEMBER

Jul 2013 - May 2014

- Collaborated with small team of colleagues to set up and run the Student Associations two 1000+ capacity venues, often during highly demanding events such as the Edinburgh International Festival and weekly student nightclub.
- Assessed resolved customer's widely varying problems quickly and efficiently.
- Involved in training new employees.

Hobbies and Interests

Sport

Member of university intra-mural football and basketball teams. Also enjoy weightlifting, squash, tennis, cycling, and golf.

Music

Experienced live performance drummer having performed in high school jazz band, the Edinburgh Schools Jazz Orchestra and own band. Ran own drum cover YouTube channel.