NOAH GAFFRAN

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EDUCATION

Queen's University, Kingston *2018-May 2023*
Final year student, B.A.Sc in Mechanical Engineering, Dean's scholar *GPA:* 3.82/4.3

Relevant coursework:

Control Systems, Thermodynamics, Fluid Mechanics, Heat Transfer, Dynamics and Vibrations, Electronic Circuits and Motors, CFD, FEA and Optimization, Machine Design

SKILLS

- **Programming:** Python (including NumPy, SciPy, and pandas), MATLAB, Arduino
- **Software** Solidworks, Solid Edge, ANSYS Mechanical, STAR CCM+ (CFD), OpenFoam
- **Manufacturing** CNC and manual machining, 3D printing, composite manufacturing

PROFESSIONAL EXPERIENCE

Engineering Assistant Sept 2021-April 2022
Klohn Crippen Berger

- Assisted with new build and refurbishment engineering projects for Canadian hydroelectric dams.
- Designed gate and stoplog upgrades, analyzed pressure management valves for large transient events in penstocks.
- Developed cost estimate for penstock foundation repair project.

Project Coordinator Co-Op May-August 2021
Modern Niagara

- Supported project managers, foremen, and engineers on various HVAC and plumbing construction projects.
- Prepared operation and maintenance manuals for new and upgraded systems.
- Developed labour planning and scheduling utility to improve construction efficiency.

Teaching Assistant Jan-Apr 2021, Sept-Dec 2022
Queen's Faculty of Engineering and Applied Science

- Teaching assistant, grader, and project manager for ASPC 162 Engineering Graphics (2021) and APSC 101 Engineering Design & Practice (2022).
- Graded assignments and reports, ran labs, proctored tests, managed weekly student team meetings, and collaborated on course content with instructors.

NSERC Research Intern May-August 2020
Queen's Computational Materials Physics Research Group

- Investigated the Lattice Element Method as a potential way of simulating behaviour and fracture of porous material such as bone.
- Developed a molecular dynamics tool in Python to prepare simulations with a variety of lattice element variants and initial conditions.

CLUBS AND PROJECTS

Chief Technical Officer 2022
Queen's Rocket Engineering Team

- Responsible for overseeing design and manufacture of two high performance sounding rockets and development of a hybrid rocket engine.
- Ensure projects from all subteams integrate effectively.

Airframe and Internals Team Co-Lead 2021-22
UBC Rocket

- Promoted to lead team of 13 students despite not being a UBC student myself due to excellent performance and leadership abilities.
- Redesigned nose cone and fin geometry, fabricated carbon fibre, aluminium, and riveted stressed-skin sheet metal prototypes.
- Developed ablative thermal protection system, created test stand and test plan.

Aerodynamics Subteam Lead 2019-2021
Queen's Rocket Engineering Team

- Managed a team of approximately 10 members to collaborate on the aerodynamic design and analysis of QRET's supersonic sounding rocket.
- Programmed rocket apogee prediction tool to correlate data between CFD simulation and other simulation methods.
- Designed rocket fins and nosecone using to ensure maximum apogee while maintaining a safe stability at all speeds.
- Designed pitot tube airspeed measurement instrument in collaboration with additional subteams on electronics, manufacturing, and component testing.

MECH 460 Capstone Project 2022
Queen's University Department of Mechanical and Materials Engineering

- Designed a positioning system for neutron detectors at the Reactor Materials Testing Laboratory.