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:* 3.84/4.3

Relevant coursework:

Control Systems, Thermodynamics, Fluid Mechanics, Heat Transfer, Dynamics and Vibrations, Electronic Circuits and Motors, Mathematics and Computation for Mechanical Engineers, Machine Design

SKILLS

- **Programming:** Python (including NumPy, SciPy, and pandas), MATLAB, Arduino
- **Software** Solidworks, Solid Edge, STAR CCM+ (CFD)
- **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.

Engineering Graphics Teaching Assistant January-April 2021
Queen's Department of Mechanical and Materials Engineering

- Responsible for evaluating approximately 100 first year student assignments and labs per week.
- Communicated feedback to students on how they can improve their engineering drawing and CAD skills.

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.

EXTRA-CURRICULAR EXPERIENCE

Chief Technical Officer 2022
Queen's Rocket Engineering Team

- Responsible for design and manufacture of a high performance sounding rocket.
- 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 and metal prtotypes.
- 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 323 Machine Design Project 2020
Queen's University

- Designed a 2-speed gearbox optimized for hill climbing, top speed, and additive manufacturing efficiency.
- Followed AGMA standards.