NOAH GAFFRAN

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EDUCATION

Queen's University, Kingston *2018-Present*
Final year student, Bachelor of Applied Science in Mechanical Engineering *GPA:* 3.84/4.3

Dean's Scholar *Expected Graduation:* May 2023
Available for internship Summer 2022

Relevant coursework:

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

SKILLS

Technical Skills

- Proficient in Python (including NumPy, SciPy, and pandas) and MATLAB for data analysis, numerical simulation, and statistics.
- Knowledge of Arduino and basic electrical equipment
- CAD proficiency in SolidWorks and Solid Edge
- CFD experience in Simscale and Simcenter STAR-CCM+
- Familiar with CNC and manual machining, 3D printing, and carbon fibre construction
- Proficient in Microsoft Word, Excel, Powerpoint, LaTeX

PROFESSIONAL EXPERIENCE

Engineering Assistant Sept 2021-Present
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.
- Reviewed and updated drawings, proposals, and engineering reports.

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.
- Maintained expertise in the class material in order to assist students requiring additional help.

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.
- Significantly lowered the barrier to entry for lattice element molecular dynamics simulation for future project participants and students.

EXTRA-CURRICULAR EXPERIENCE

Airframe and Internals Team Co-Lead April 2021-Present
UBC Rocket

- Promoted to lead team of 13 students despite not being a UBC student myself due to excellent performance and leadership abilities.
- Manage task delegation, member training, and scheduling of subteam responsible for airframe and internals of a hypersonic space-shot rocket.
- Redesigned nose cone and fin geometry.
- Developed ablative thermal protection system, created test stand and test plan.
- Fabricated carbon fibre composites parts using vacuum infusion.
- Designed and prototyped metal and composite parts and assemblies.

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.
- Effectively managed subteam budget and schedule, acquired sponsorship from two major companies.

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