Noah Gaffran

103noah@gmail.com | noahgaffran.github.io

Education

Queen's University – B.A.Sc. in Mechanical Engineering Sept 2018 – Apr 2023
Dean's Scholar, 3.82/4.3 GPA

Skills

Software: Solidworks, STAR-CCM+, Ansys Mechanical, OpenFoam
Programming: Python, MATLAB, Arduino
Manufacturing: Manual and CNC machining, 3d printing, wet layup and prepreg composite fabrication
Credentials: Amateur Radio Operator license, Tripoli High Power Rocketry level 2

Experience

Graduate Research Assistant, RMC – Kingston, ON Sept 2023 – June 2025
- Member of the composite sandwich panel research group, studying effects of barely visible impact damage on the residual strength of carbon fibre facesheet sandwich panels through numerical simulation and physical testing.
- Teaching assistant for multiple undergraduate mechanical and aeronautical engineering courses.

Detonation Research Assistant, Queen's University – Kingston, ON May 2023 – Aug 2023
- Designed shock tube to be used in the study of fuel additives in detonation.
- Determined behaviour of thermodynamic states of hydrogen-oxygen detonation waves when modeled in 1, 2, and 3 dimensions, with and without ozone additives.
- Contributed results to paper published in the Proceedings of the Combustion Institute.

Engineering Assistant, Klohn Crippen Berger – Vancouver, BC Sept 2021 – May 2022
- Developed design and repair proposals and field review plans for mechanical subsystems on various dams in BC as part of the hydromechanical engineering group.
- Designed upgrades to spillway gates and stoplog seals for hydroelectric dam in Yukon territory.
- Prepared and delivered cost estimate to client for major dam penstock foundation repair project.

Project Co-ordinator, Modern Niagara – North Vancouver, BC May 2021 – Aug 2021
- Supported team of project managers, foremen, and engineers on commercial HVAC and plumbing construction projects.
- Improved construction efficiency through the creation of a manpower planning and scheduling utility.
- Created operation and maintenance manuals for new and upgraded building mechanical systems.

Materials Modeling Research Assistant Queen's University – Kingston, ON May 2020 – Aug 2020
- Developed molecular dynamics tool in Python to prepare lattice element method simulations with tunable lattice variants, material geometries, and initial conditions.
- Contributed to research on lattice element method as a potential method of simulating porous material such as bone, co-author on paper published in Modelling and Simulation in Materials Science and Engineering.

Projects

Queen's Rocket Engineering Team 2018 – 2023
- Chief Technical Officer during final year, previously aerodynamics lead.
- Oversaw design and construction of high-performance sounding rockets and the development of a hybrid rocket engine.
- Competed at Spaceport America Cup, best finish of 6th-in-class. Won solids category at Launch Canada 2023.

UBC Rocket Team 2021 – 2022
- Airframe and internal structures lead for liquid rocket project.
- Designed and prototyped aluminum riveted nosecone, intertank structures, and ablative thermal protection system.

Volunteer work
- Kingston regional science fair voulnteer judge 2023, 2024
- Launch Canada university rocket competition volunteer 2024-present. Judge, rules committee, flight safety, and live stream team.