

Nicholas Dakin

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Skills

CAD: SolidWorks, PTC Creo, Fusion360, AutoCAD, GD&T

Software: Microsoft Office, MATLAB, Python, Teams

Technical: P&ID, CNC Machining, 3D Printing, FEA, CFD, FMEA, Sheet Metal, Welding

Languages: Native English Speaker; Proficient in French

Experience

Mechanical Engineering Co-op

May 2023 – Aug 2023

Noram Engineering

Vancouver, BC

- Redesigned pressure vessels for an electrolysis system, reducing vessel count by 50%
- Creating a detailed assembly manual, streamlining electrolytic cell assembly
- Analyzed and validated P&IDs, resulting in plant design specification accuracy
- Specified pumps, heat exchangers, and various components for process systems

Product Design Co-op

Sept 2022 – Apr 2022

ContainerWest Manufacturing

Richmond, BC

- Led the design of portable containerized buildings, expanding the product portfolio by 10%
- Integrated building systems, including electrical, piping, and HVAC
- Modeled parts in SolidWorks (DFM) and created detailed engineering drawings with GD&T
- Conducted cost estimation and scheduling, consistently delivering projects on time and within budget

Junior Engineer Co-op

Sept 2020 – Aug 2021

AVL Fuel Cell

Burnaby, BC

- Designed and fabricated custom tooling hardware using 3D modeling, drafting, and mach
- Performed detailed assembly of hydrogen fuel cell stacks, comprising MEAs, bipolar plates, and unit cells
- Performed root cause analysis on faulty components, driving improvements in fuel cell performance
- Used PTC Creo and 3D printing to prototype fuel cell hardware, reducing component costs by 60%

Projects

River Debris Capture Device

Sept 2023 – Apr 2024

- Designed a self-powered system for river pollutant removal, leveraging CFD simulations and prototypes
- Led bi-weekly stakeholder meetings to align objectives and delegate tasks
- Delivered a functional prototype demonstrating reliable flow dynamics and debris removal

Portable Lifeguard station

Mar 2023 – Apr 2023

- Engineered a portable lifeguard station by retrofitting a shipping container with integrated systems
- Designed a universal piping system adaptable to various water sources
- Collaborated with clients to ensure design met all functionality requirements

Current-Mapping Board

May 2021 – Aug 2021

- Designed and installed hardware to mount a custom current-mapping board onto fuel cell stacks
- Performed assembly, inspection, and testing, integrating DAQ modules and instrumentation
- Calibrated software and system, resulting in precise current distribution mapping capabilities

Education

University of British Columbia – BSc in Mechanical Engineering

May 2024

- Member, UBC Supermileage Design Team: Focused on vehicle mechanics and aerodynamics