



TECHNICAL SKILLS AND CERTIFICATIONS

Mechanical	Simulation/CAD	Electrical	Programming	AI/ML	Certifications
• Machining • Additive Manufacturing • P&ID Design • GD&T Drafting	• ANSYS • Siemens Simcenter • SOLIDWORKS • PTC Creo • DraftSight	• Soldering • Micro-controller Prototyping • Electrical Drawing Interpretation	• C++ / C# • MATLAB • Python • PLC Programming • LabVIEW	• TensorFlow • Predictive Maintenance • MATLAB Optimization	• EGBC EIT • Class 5 Driver's Licence • SOLIDWORKS Professional

EDUCATION

University of British Columbia Bachelor of Applied Science - Mechanical Engineering Co-operative Education Program	<i>Aug 2019 – May 2023</i>
Langara College Certificate in Arts and Sciences — Engineering Transfer	<i>Sep 2018 – May 2019</i>

TECHNICAL WORK EXPERIENCE

Product Design Engineer LTL Munitions • Performed pneumatic and stress calculations for the ReShell Cartridge prototype to optimize stored energy and guide improvement. • Developed a program to estimate projectile velocity and power based on results from previous revision testing, enabling rapid evaluation of design changes. • Designed and tested adapters to integrate the ReShell with 37 mm and 40 mm launchers for expanded training applications.	<i>Aug 2021 – May 2022; Jul 2026 – Present</i> Richmond, BC
Detailed Design Engineer GreenLight Innovation • Developed scripts and processes to automate part ordering, drawing package creation, and project information tracking, eliminating common human errors and reducing project timelines by a couple days. • Converted P&ID and Component lists into fully designed stations with spools, vessels, tubing in CAD • Designed sheet-metal enclosures and structural frames to support and route components within automated test stations. • Served as mechanical lead for the improvement of smaller stations, including frame cost reduction and layout optimizations. • Created parts lists and manufacturing drawings, and resolved manufacturing issues during station assembly.	<i>Nov 2023 – Jul 2026</i> Vancouver, BC
Electrical-Mechanical Engineering Co-op Westport Fuel Systems • Calibrated and wired pressure, temperature, and flow sensors for engineering test benches. • Tested a liquid-nitrogen cooling system for hydraulic fluid to characterize cooling performance and develop an efficient control strategy. • Programmed and installed temperature-control and safety systems for a gas-quality monitoring enclosure. • Designed and programmed a pressure-control system for long-term pressure testing. • Designed LabVIEW user interfaces to simplify test-rig configuration and operation.	<i>Apr – Aug 2022</i> Vancouver, BC
Product Design Engineering Co-op Dometic Marine • Conducted product feasibility studies on Marine Gyro Stabilizers to evaluate solutions that differentiated the product from competitors. • Performed in-depth analysis of a prototype Stabilizer system to predict real-world performance and validate design assumptions. • Evaluated electromagnetic simulation software by comparing usability and accuracy against real-world data collected from test benches designed and assembled in-house.	<i>May 2020 – May 2021</i> Richmond, BC

TECHNICAL SCHOOL PROJECTS

Mechanical Capstone: Predictive Maintenance for Accelerated Air Compressor Wear UBC • Researched portable air-compressor failure modes and user experiences to identify the most probable failure mechanisms. • Conducted a failure analysis of an air compressor to identify potential failure mechanisms and select corresponding sensors. • Designed and programmed a custom data-recording system to collect signals from multiple devices into a single database. • Integrated database access with an LSTM neural network for predictive maintenance analysis.	<i>Sep 2022 – Apr 2023</i> ealexander.ca/ubc-capstone
Stress Relaxation in 3D Printing Materials UBC • Designed the experimental apparatus and methodology to measure stress relaxation in polymer filament under constant strain. • Researched stress relaxation in polymers and 3D-printed materials to develop performance models for different filament materials. • Developed a MATLAB script to automatically process experimental data and fit curves for comparing material performance in short- and long-term applications.	<i>Feb – Apr 2022</i> ealexander.ca/stress-relaxation

REFERENCES UPON REQUEST