Alycia Cheng *4th year Mechanical Engineering Student*

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Skills

Coding/Software — MATLAB, C/C++, C#, Java, Arduino, Google Apps Script

Manufacturing — Lathe, Mill, Drill Press, Band saw, Waterjet Cutter, 3D Printing, Soldering

Simulation Software — Star-CCM+, Ansys Fluent, Ansys Mechanical, Abaqus

Computer Aided Design (CAD) Software — SOLIDWORKS (CSWA), OnShape, AutoCAD, SpaceClaim

Professional Experience

FTXT Energy Technology, Jan 2024 – Aug 2024
Mechanical Engineering Co-op North Vancouver, Canada

- Simulated and modelled flow through an individual cell plate and flow distribution across a cell stack using Ansys Fluent
- Fitted rubber-like sealant to hyperelastic material models such as the Ogden model for large deformations in static structural simulations using Ansys Mechanical
- Validated and verified static structural simulations of seal geometries in compression between bipolar plates
- Performed mechanical testing such as three-point bending tests on flexible graphite samples
- Modelled seal lifetime using compression set data, creep models, and leak test data in MATLAB

UBC Supermileage, *Aerodynamics Project Lead* Aug 2023 – present

- Led a carbon fiber shell manufacturing project for an Urban Concept vehicle for the Shell Eco-Marathon Americas compeition
- Simulated various low-drag prototype vehicle concepts using Star-CCM+ to find and compare the drag coefficients and lift coefficients of each concept
- Modelled various low-drag vehicle designs in SOLIDWORKS within the design constraints of the Shell Eco-Marathon Americas competition
- Led and taught a team of five engineering students to model and simulate vehicle bodies

UBC Supermileage, *Vehicle Mechanics General Member* Sep 2022 – Aug 2023

- Waterjet cut various materials: aluminum parts, carbon fiber sandwiches, plywood etc.
- Participated in the Quebec Supermileage Competition (QSC) in June 2023 placing first in efficiency and second in endurance

Cannepp Boiler Room Technologies, May 2023 – Aug 2023
Engineering Co-op

- Quality controlled $10,000 Victaulic pump skids from drawings using calibrated measuring equipment
- Developed a quality control manual aligned with contractor requirements from TSBC Safety Standards for boilers and pressure vessels

Education

University of British Columbia, *BASc*
Sep 2020 – May 2026
CGPA: 83%

Projects

Capstone Project, *EEG Device for Children*

Earlier Work Experiences

Purdy's Chocolates,
Mechanical Engineering Co-op
May 2022 – Aug 2022

Agroponics Project Member, *UBC Agrobot*
Sep 2020 – Apr 2022