JACOB GAUCHER

MECHANICAL ENGINEERING TECHNOLOGIST/STUDENT

2+ YEARS EXPERIENCE IN PRODUCT DESIGN AND MANUFACTURING

CONTACT

403-919-6709
JacobGaucher@uvic.ca
Victoria, BC, Canada
DESIGN PORTFOLIO:
jakegaucher.github.io/jakegaucher/

EDUCATION

Bachelor of Engineering in Mechanical Engineering (BEng)

University of Victoria

January 2023 – December 2024

GPA 7.8/9 | Graduation December 2024

Advanced Diploma in Mechanical Engineering Technology

Camosun College

January 2022 – December 2022

GPA 3.64/4 | Dean's Honour Roll

Diploma in Mechanical Engineering Technology

South. Alberta Institute of Technology

September 2018 – April 2020

GPA 3.94/4 | Design and Analysis

WORK EXPERIENCE

Mechanical Designer (Chassis and Suspension)

Arma Automotive Inc.

August 2022 – Present

- Designed and manufactured a custom windshield wiper system, increasing efficiency of packaging.
- Design of mechanical automotive components, with an enthusiast driving dynamics focus.
- Re-design of a constant center steady rest, for use with our in house CNC tube notcher. Allows for 1in to 2.5in tubing to be held with a mathematically correct constant center.

CNC Operator (Co-op Position)

JS Foster Corp.

May 2022 – August 2022

- Operated CNC Mills and Lathes (Haas VF4, Puma 350) and inspected machined parts for compliance with specifications.
- Researched and tested new mass finishing protocols to optimize systems for obtaining uniform surface finishing and deburring.
- Analyzed error codes and machining defects from various procedures.
- Carried out First Article Inspections and Final Quality Assurance procedures.

Mechanical/R&D Designer (Design and Aerodynamics)

GiBLI Tech Inc.

June 2020 – May 2021

- Designed the low-wind-speed sensing probe system included in **Patent: WO2021108920A1**.
- Employed CFD Software (SimScale) to create a novel sensor probe with higher accuracy wind speed readings (from 24% error to <1% of true value).
- Designed temperature sensing cavity for low time constant temperature and humidity readings using CFD and real world testing.
- Created test plans, employed test riders to execute testing, analyzed test data, and iterated on design improvements from the results of testing.

For more on my work experience, please visit my website.

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SKILLS

- Hands-On Design
- Machine Shop Use
- CFD Simulation (SimScale)
- FEA Simulation
- Consumer Product Design
- Testing (planning & analysis)
- 3D printing (DFAM)
- Data Analysis (MATLAB, Excel)
- Complex CAD Assemblies
- Consumer Product Design

PERSONAL INTERESTS

- National Level Cycling Competition
- Mountain Biking
- Rock Climbing
- Ski Touring
- Automotive Modification and Enthusiasm
- Cooking and culinary pursuits

References available upon request.

PROJECTS

Formula Hybrid Club

University of Victoria
January 2022 – Present

- Design of two-stroke exhaust system. Minimized weight, while improving manufacturability using off the shelf mandrel bent elbows and a simple expansion chamber.
- Re-designed Pedal box for improved packaging and pedal stiffness.
- Creation of Engineering Drawings, utilizing GD&T practices.

Recommendation for Centrifuge Optimization

SAIT Capstone Project with Ovintiv
January 2020 – April 2020

- Team lead on a capstone project partnered with Ovintiv.
- Provided a design for an improved feed chamber to reduce wear in an Oilsands Centrifuge (Tecumseh 2075).
- Included CFD simulations spearheaded by myself.

Classic BMW Builds

Personal Project
January 2018 – Present

- Daily driver build on a 2004 E46 325iT, including replacement of all suspension components, with a coilover kit install. OEM speaker retrofit (rewired throughout whole car), and many more items.
- Design of custom interior gauge cluster for 635CSi.
- Prototype design for strut tower braces front and rear (*to be tested*).
- In progress motor and transmission swap on 1994 E34 530i Touring Wagon. Conversion from OBD1 to OBD2, and other modernization tasks.

Custom Mountain Bike Suspension Link

Consulting Project.
June 2020 – August 2020

- Re-designed a lower link from a full suspension mountain bike to allow for increased tire clearance, as per the client's request.
- Resulted in a stiffer, lighter, and improved tire clearance (2.4" width).