

# JACOB GAUCHER

## MECHANICAL ENGINEERING TECHNOLOGIST/STUDENT

2+ YEARS EXPERIENCE IN PRODUCT  
DESIGN AND MANUFACTURING

### CONTACT

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Victoria, BC, Canada

### DESIGN PORTFOLIO:

[jakegaucher.github.io/jakegaucher/](https://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 18% error to <1.5% 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).