

# Tom Rotbart Manufacturing Engineering Student

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## TECHNICAL SKILLS

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**Computer:** Star-CCM+, SolidWorks, Siemens Plant Simulation, Python, R, Microsoft Office, Web Dev Languages

**Hardware:** Wind tunnels, Environmental chambers, Waterjet, CNC, Raspberry Pi, Arduino

**Processes:** CFD Analysis & Validation, Carbon Fiber Curing (Pre-Preg, Infusion, Wet)

## EDUCATION

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University of British Columbia

Expected Graduation: April, 2026

*Bachelor of Applied Science - Manufacturing Engineering, Commerce Minor*

## ENGINEERING STUDENT TEAMS

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Formula UBC Racing, University of British Columbia  
*Aerodynamics Lead*

September, 2020 – Present

- Design and simulate dual pass single core radiator to validate cooling system of vehicle using Star-CCM+ heat exchangers and confirmed under ideal cooling conditions, 17kW of heat can be dissipated
- Simulate a sweep of Front Wing locations to validate undertray performance in 3D using Star-CCM+. Determined ride height of 12% chord length maximized rear diffuser efficiency at 4.17 L/D ratio
- Lead a team of six engineering students through aerodynamic projects consisting of designing, developing, validating, and documenting a FSAE vehicle aero package and becoming better engineers

## TECHNICAL PROJECTS

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Wireless Light Switcher, Personal

August, 2021 – September, 2021

- Programmed a Discord bot in python using the Discord API to receive user inputs and implemented pulse width modulation to turn a light switch on or off at a specific user requested time

Garage Door Alert System, Personal

June, 2021

- Wired an electronic circuit to send an SMS text message if detects garage door is open for too long in python to ensure vehicles exiting the house close the garage door
- Constructed separate electronic circuit to turn on an indicator if garage door is opened to alert people inside the house

## VOLUNTEER EXPERIENCE

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Youth Helping Youth, Surrey, BC

September, 2019 – January, 2022

*Information Technology Member, Record Keeper*

- Collaborated with a team of 6 to deploy a secure and organized internal photo storage software using Django framework, HTML, CSS, & JS
- Created, taught, and implemented bookkeeping system for all seven North American branches after self-learning how to book-keep using Microsoft Excel

## INTERESTS & ACTIVITIES

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- Studying CFD Turbulence Modelling (Reading: Turbulence Modeling for CFD by David C. Wilcox)
- Watching Formula 1 and sim racing
- Ultimate Frisbee, Basketball, Speed Cubing (Rubik's cubes)