

Brielle Chenier

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SKILLS

- Mechanical Design: Certified Solidworks Professional (CSWP), Onshape, AutoCAD, 3D Printing, CNC, Waterjet, GD&T.
- Software: Python, C++, Git, Java, LabVIEW
- Languages: English, French

EXPERIENCE

Mechanical Engineering Intern - Battery Team, *Beta Technologies* 🌐

January 2022 – Present
Burlington, United States

- Developing battery pack for electric VTOL aircraft.
- Designing fixtures for battery pack assembly and testing in Onshape
- Performed and analyzed tests to ensure battery pack reliability during crash and short circuit

Mechanical Technical Lead, *Waterloo Aerial Robotics Group*

September 2020 – Present
Waterloo, ON

- Designed quadcopter frame in SolidWorks capable of carrying a 2kg payload and flying up to 3km.
- Built and performed calculations to ensure sufficient lift, flight time, and appropriate landing gear for competition drone.
- Designed device grab, pick up and deploy medical package for fixed-wing aircraft.
- Integrated mechanical system with electrical and firmware for competition airframes.

Engineering Intern, *Eospace*

May 2021 – August 2021
Redmond, United States

- Developed a nitrogen hood in SolidWorks and printed with an SLA printer in order to hermetically seal modulators.
- Designed an oven to cure epoxy by heat cycling devices 2x faster and CNC machined a plate to cool parts in a safer way.
- Developed a LabVIEW program for a solenoid to release air at specific times during a heating process.

Mechanical Team Member, *University of Waterloo Solar Car Design Team*

September 2020 – May 2021
Waterloo, ON

- Designed tools to aid in car manufacturing and increase efficiency during assembly.
- Assembled carbon fiber and Nomex to create four different layups for car outer structure and bottom panel.
- Researched engineering techniques for welding and built welding jigs for car mainframe to support four passengers.

PROJECTS

Friendship Lamp, *Color Changing Lamp* 🌐

October 2020 – February 2021

- Developed a program for a Raspberry Pi lamp to connect via Firebase to a buddy lamp and display matching colors in real-time.
- Created a website in React to remotely control lamp colors.
- Designed lamp case in SolidWorks and 3D printed to house LEDS

EDUCATION

University of Waterloo, *BASc in Mechatronics Engineering*

2020 – 2025
Waterloo, ON

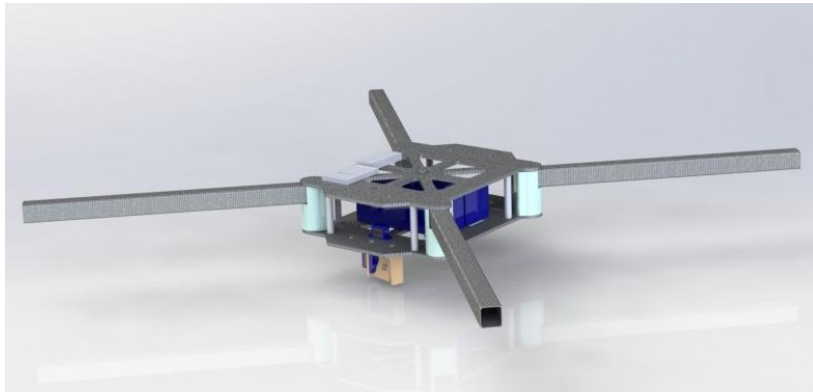
- 3rd place in Senior Design at Waterloo Engineering Competition 2021
- Eng. Society Educational Outreach and Enghack Director, 2022 Outreach Commissioner

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WARG 2022 Competition Drone

- 4kg drone, capable of carrying 2kg payload
- Designed in SolidWorks and prototype made with laser cutting fiber board. Final design will be made by water jetting carbon fiber
- 3D printed brackets for arm to keep them rigid during flight as well as distribute battery load



FIRST Robotics Climb System

- Aluminum extrusion rails driven by chain to lift 150lb robot up a 45cm step
- 6 bearings held in each extrusion to ensure rails stay in correct position and do not bend
- Motor behind bottom bracket to control wheels and move robot forward during climb
- Sheet metal parts made with a waterjet and bent

