Brielle Chenier

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SKILLS LIST

Mechanical Design: Certified Solidworks Professional (CSWP), AutoCAD, 3D printing, Mill, Waterjet
Programming: React, Python, C++, Git, Java, HTML/CSS and Javascript
Soft Skills: Leadership, Communication, Teamwork and Collaboration
Languages: English and French
Work: Eligible to work in the United States and Canada

EXPERIENCE

Mechanical Lead   **Waterloo, ON**
Waterloo Aerial Robotics Group   *September 2020 - Present*

- Researching and developing a custom air frame for an RC plane that will compete in future Unmanned Systems Canada competitions using Solidworks and 3D printing
- Designed and fabricated a mechanism using servos and micro-controllers to pick up 4 inch packages
- Programmed an arduino controlled arm to teach new members about PID control and create an interactive onboarding

Midnight Sun Mechanical Team Member   **Waterloo, ON**
University of Waterloo Solar Car Design Team   *September 2020 - Present*

- Designed tools to aide in car manufacturing and increase efficiency during assembly and competition; designed and 3D printed model car in Solidworks for team sponsors
- Assembled carbon fiber and nomex to create four different layups for car structure and bottom panel
- Learned about engineering techniques for welding and built welding jigs for car main frame which will support 4 passengers

Team Captain, Robot Lead, and Outreach Lead   **Bellevue, USA**
FIRST Robotics, Robototes Team 2412   *September 2016 - June 2020*

- Led team meetings for 60 member team and oversaw build and integration for 150lb robot, including supervising sub team leads, task delegation, ensuring the project stayed on schedule and ordering parts
- Designed 2019 climb system to lift robot 45cm using Solidworks and directed 10 team members to build and assemble; system was 80% effective at district competition, helping us become Quarter Finalists at the 2019 World Championships
- Planned and ran 30 STEM outreach events resulting in over 1,000 team volunteer hours per year, launched a robotics summer camp for students in grades 3-5 all of whom had an increased interest in STEM after attending

PROJECTS

Friendship Lamp
Color Changing Lamp   *October 2020 - February 2021*

- Programmed a Raspberry Pi powered lamp to connect via Firebase to other lamps and display matching colors in real-time; lamp can also be controlled with a website made using React in order to control lamps remotely
- Designed lamp case in Solidworks and 3D printed to house LED's

Actor Tracker - Netflix Face ID Chrome Extension
Hack the North 2021 - 36 Hour Hackathon   *January 2021*

- Integrated Javascript with Chrome API's to create a chrome extension available on streaming services such as Netflix
- Used web-scraping to read in Netflix title and episode number and send it to face ID program
- Populated extension with results from IMDb including actor name, birthday and other movies they have been in

EDUCATION

University of Waterloo
Candidate for BASc in Mechatronics Engineering   *2020-2025*
Engineering Society Winter 2021 Educational Outreach Director

ACHIEVEMENTS AND INTERESTS

Interests: Rock Climbing, Basketball, and Music (Oboe and Flute)
Accomplishments: High School Engineering Faculty Award Winner, FIRST Robotics Dean's List Semi-Finalist and Over 500 Volunteer Hours primarily in STEM Outreach

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ROBOT CLIMB SYSTEM

FEATURES:

- 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 were waterjet and bent