

# JESSICA WALLACE

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## EDUCATION

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### **Carnegie Mellon University**

Bachelor of Science, Mechanical Engineering  
Minor, Media Design

Pittsburgh, PA

May 2023

## PROFESSIONAL EXPERIENCE

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### **Tesla Motors, Inc. - Vehicle Design Integration Co-Op**

Jan - Aug 2021

- Led teams of 80+ engineers to integrate the Cybertruck overhead package, using cross-functional knowledge of electronics, body-in-white design requirements, and vehicle design.
- Designed 5 fixtures for locating sub-assemblies in prototype trucks while optimizing for future vehicle designs.
- Utilized first principles of mechanics to create a rotary fixture for a vehicle's instrument panel, minimizing torsion & deflection.

### **Google[X], the moonshot factory - Robotics Intern**

May - Aug 2019

- [Confidential] Spearheaded multiple robotics research projects involving design and fabrication.
- Created successful prototypes to improve a project that uses breakthrough technologies to solve the world's most challenging problems.

### **CMU Robomechanics Lab - Robotics Research Assistant**

Oct 2018 - May 2023

- Prototyped improved dynamic running and climbing capabilities in a hexapod robot through systematic material analysis, strain energy methods for a linear-elastic system, and finite element analysis.
- Designed and deployed structural improvements for a magnetic wall climbing robot's electronics boards & electrical distribution system as well as conducted verification and validation of the prototypes.

### **CMU Techspark - Machine Shop Assistant**

Jan - May 2023

- Assisted project teams by providing guidance on rapid prototyping of designs from ideation to realization for educational, extracurricular, and research activities.
- Instructed students on manufacturing techniques such as additive manufacturing, laser cutting, CNC, and manual machine shop equipment as well as digital design in a variety of CAD softwares.

## PROJECTS & LEADERSHIP

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### **Autonomous Aquatic Debris Cleanup - Project Lead**

Aug - Dec 2022

- Created an autonomous floating device that can locate and pick up water surface debris using a fully integrated mechatronic package with waterproofed sensing and feedback controls.
- Won Best Design Award at CMU 2022 Mechanical Design Exposition.

### **Formula SAE EV Team - Accumulator Container System Lead**

Sept 2021 - May 2022

- Developed accumulator container with considerations to battery cell cooling, surrounding vehicle geometry, and FSAE rules.
- Utilized sheet metal design skills and manufacturing process knowledge to ensure dimensional accuracy.

### **Carnegie Mellon University - Head Orientation Counselor**

Nov 2020 - Nov 2021

- Served as a leader and role model for the entire student body. Developed & led the first in-person program for 2,000+ students in 1.5 years, and revitalized campus culture and traditions by creating an inclusive and welcoming environment.

### **Formula SAE EV Team - Two Force Members System Lead**

Sept 2018 - May 2019

- Designed and manufactured 24 suspension links connecting major components in a Formula SAE race car.
- Integrated the system into the vehicle suspension and performed stress analysis calculations and Matlab simulations to optimize suspension link performance.

## SKILLS

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**Machines & More:** Manual & CNC Metal Shop, Wood Shop, Intermediate Steel Blacksmithing, Sewing, Casting (Silicone Prosthetics)

**Software:** Onshape, Solidworks, CATIA V5, CATIA V6 (3D Experience), Python, JavaScript, C++, HTML

**Certifications:** NAUI Open Water Scuba Diver, FAA Commercial Drone Pilot, NJ Boating Safety Certification