

Brian Check

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EDUCATION

Stanford University | Palo Alto, CA

Master of Science in Aeronautics and Astronautics

Jun 2026

Carnegie Mellon University | Pittsburgh, PA

Bachelor of Science in Mechanical Engineering, Minors in Robotics and Business Administration

May 2024

GPA: 3.98 / 4.00 (Engineering Dean's List, all semesters)

RELEVANT WORK EXPERIENCE

Graduate Engineer (Raptor Foundry) | SpaceX | Hawthorne, CA

Jun 2024 – Sep 2024

- Re-engineered the Foundry's ingot loading process, creating a safer and faster system for smelt chamber loading
- Designed, built, proof-tested, and implemented a fully custom ratcheting lifting tool to safely, quickly, and easily load 500lb ceramic cylinders (containing ingots), without fully encircling the cylinder, in tight space constraints
- Applied hand calcs, FEA, DFM techniques, tolerancing, and tech feedback while optimizing cost and lead times
- Eliminated 80+ daily bent-over lifts of 50lb ingots (#1 technician complaint) while reducing loading time by 80%

Undergraduate Research Assistant | Robotics Institute (CMU) | Pittsburgh, PA

Sep 2023 – May 2024

- Developed cost-effective soft robotic gripper using 3D-printed delta robots
- Led structural design to manage joint and linkage deflection; Integrated tactile sensors for feedback control

Space Systems Engineering Intern | FTS International | Washington, D.C.

May 2023 – Aug 2023

- Developed ConOps and designed 6U CubeSat in a team of 3 to combat illegal fishing by geolocating AIS-off ships
- Led bus design by selecting/integrating 10 systems within 6U form factor; Conducted orbital trade studies in STK
- Developed TDOA-based algorithm to geolocate ships from radar signals via 2-satellite cluster; Built MATLAB simulation suite to model error across satellite setups, spacings, and orbits, guiding cluster and mission design

Product Design Engineering Intern | Howmet Aerospace | Cleveland, OH

May 2022 – Aug 2022

- Designed press-fit mounting system for aerodynamic wheel cover; Optimized through stress analysis and testing
- Conducted fatigue analyses on several new wheel designs using Ansys and Fe-Safe software

ENGINEERING LEADERSHIP AND PROJECTS

Team Captain, Aerodynamics & Composites, Carnegie Mellon Racing

Jul 2022 – Jun 2023

- Managed 6-person team to design, manufacture, and validate a competitive aerodynamic package, resulting in 2nd place overall out of 69 teams at Formula SAE Michigan (1st place US team)
- Led all aerodynamic simulation using Ansys Fluent, increasing downforce by 10% while reducing mass by 30%
- Implemented first active aerodynamics system (DRS) in team history; Executed comprehensive testing plan
- Coordinated manufacturing, including 20+ carbon fiber layups and machined parts, to meet aggressive timeline

Senior Design Capstone, Carnegie Mellon University [Team of 5]

Apr 2024

- Built a pickleball trainer robot, winning best overall at the final design expo
- Robot moved around the court, launching balls with varying speed, angle, and spin; player returned balls to its net, which collected/funneled them back into the launcher; Led software/electrical design using Python/ROS/RPi

Powertrain System Lead, Carnegie Mellon Racing

Jul 2023 – Jun 2024

- Led complete redesign of uprights to integrate lightweight carbon fiber wheels into 4WD hub motor powertrain
- Reduced mass by 5% using hand calcs/FEA while improving DFM; Increased collaboration with suspension team

"Rethink the Rink" Make-a-thon (Awarded Best Overall) [Team of 4]

Mar 2023

- Collaborated with Pittsburgh Penguins to develop innovative internal shot-blocker to protect players from injury
- Selected materials for strength/comfort via impact testing; Presented final prototype to executives

SKILLS & INTERESTS

Software: SolidWorks, NX, Ansys Fluent/Mechanical, MATLAB, Python, Raspberry Pi, Arduino, STK, Mastercam, Excel

Machines: CNC, Manual Mill, Manual Lathe, 3D Printer, Laser Cutter, Waterjet, Table/Band Saw

Interests: Football, Pickleball, Chess, Rock Climbing, Hiking, Golf, Basketball