

# Thomas Brandt

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## EDUCATION

### University of California, San Diego

B.S. Mechanical Engineering (GPA: 3.53/4.0)

La Jolla, CA

Expected Jun. 2027

- **Specialization:** Renewable Energy & Environmental Flows
- Summer 2025: Study Abroad in France

## EXPERIENCE

### Students for the Exploration and Development of Space (SEDS@UCSD)

La Jolla, CA

Structures Subteam Lead

Apr. 2025 – Present

- Leading the structures subteam of five students to develop a Methane-LOX rocket targeting 30,000 ft altitude.
- Directed Preliminary and Critical Design Reviews (PDR/CDR), encouraging critical analysis and alternative design approaches.
- Oversaw composite quality control with precision measurement tools and documentation of manufacturing processes.
- Mentoring structures subteam members in design and manufacturing.

Structures Engineer

Oct. 2024 – Apr. 2025

- Developing manufacturing process for composite aero panels and monocoques using pre-impregnated and wet layup composites, adhering to industry-standard processes.
- Owned design of an avionics PCB mount, including structural, manufacturing, and integration considerations.
- Performed ASTM short-beam shear and tensile tests to determine composite material properties.
- Performed pad tech operations for cryogenic vehicle testing.

### FIRST Robotics Competition Team 702

Culver City, CA

Mechanics & Safety Subteam Lead

Aug. 2020 – Jun. 2023

- Co-led mechanical design and manufacturing of robot drivetrain and telescoping arm powered by pneumatic pistons, advancing to the 2023 FRC World Championship.
- Machined and assembled structural components, integrating aluminum framing and sheet metal assemblies to competition standards.
- Developed and enforced a safety program for 50+ members; mentored students in safe and effective tool usage.
- Competed in NASA JPL Innovation Challenge and multiple regional events.

### Property Maintenance Assistant

Los Angeles, CA

Full-time Summer Employment

Jun. 2023 – Aug. 2023, Jun. 2024 – Aug. 2024

- Worked full-time on property maintenance projects, including deck restoration, garden construction, and general repairs requiring precision and safety awareness.
- Collaborated with supervisor to complete sustainable construction and refurbishment tasks under strict timelines.

## TECHNICAL SKILLS

**Design & Software:** SolidWorks, Fusion360, MATLAB, Python, Java, CAM, Microsoft Office (Word, Excel, PowerPoint), LaTeX

**Manufacturing & Tools:** Mills, lathes, CNC Machining, 3D printing, laser cutting, composite layups, Raspberry Pi, Arduino

**Certifications:** Liquid Oxygen Handling, Compressed Gas Safety

**Languages:** English (fluent), Spanish (fluent), American Sign Language (basic)

## RELEVANT COURSEWORK

Statics, Dynamics & Vibrations, Solid Mechanics, Thermodynamics, Fluid Mechanics, Aerospace Materials Science, Signals & Systems, CNC & Manual Machining