TROY HOLLY

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EDUCATION

University of California, Irvine

- Bachelor of Science in Mechanical Engineering, March 2027 - GPA: 3.43
- Relevant coursework: Fluid Mechanics, Thermodynamics, Mechanics of Structures, Materials Science, Electric Circuits, Statics, Dynamics, Vibrations, Mechanical Behavior/Design Principles, Machine Shop

Saddleback College, Mission Viejo, CA

- Associate of Science in Engineering, May 2024 - GPA: 3.77

SKILLS

Software: Siemens NX/Teamcenter, SolidWorks, OnShape, FEA, CAM, MATLAB, C++, Arduino IDE, RapidHarness
Fabrication: Lathe, Mill, CNC Router, FDM 3D Printing, General Prototype Machining
General: GD&T, Engineering Drawings, FMEA, DFM, DFA, Technical Writing

PROFESSIONAL EXPERIENCE

One-Cycle Control **Irvine, CA**
Mechanical Engineer Intern *March 2025 - Present*

- Designed mechanical systems for high-efficiency power converters using OnShape CAD, supporting DoD/DoE projects
- Owned assembly process for a new power converter, creating fixtures and an 18-page SOP to reduce assembly time by 50%
- Produced 120+ engineering deliverables including GD&T drawings, RapidHarness wiring schematics, mechanical snapshots, and standard operating procedures
- Designed and fabricated electrical enclosures, solar panel arrays, thermal interface materials (TIMs), and 3D-printed jigs and fixtures to accelerate production workflows

PROJECT EXPERIENCE

UCI Rocket Project, Liquids **Irvine, CA**
Propulsion Engineer *May 2025 - Present*

- Designed, machined, and tested 3x custom manifold blocks, eliminating 30+ fittings and tubes to simplify a methalox feed system, reducing leak paths and increasing repeatability
- Developed and validated a feed system pressure loss calculator, reducing prediction error from cold flow test data by 50%
- Executed 10+ cold-flow tests and 1 engine hot fire to validate propulsion system performance
- Designed and operated component-level cryogenic and high-pressure (3,700+ psi) test systems
- Generated P&IDs documenting full feed system architecture and component-level test setups
- Performed root-cause failure analysis on test data and implemented corrective actions to enhance system reliability

Anteater Electric Racing **Irvine, CA**
Dynamic Sensors Engineer *October 2024 - May 2025*

- Performed trade studies of sensor options, comparing specifications, costs, and lead times to select components for UCI's Formula SAE Electric vehicle, streamlining sensor integration
- Integrated linear potentiometers into suspension assemblies for real-time shock travel data acquisition
- Designed vehicle mounts for hall effect and IR sensors to monitor wheel speeds and tire/brake temperatures
- Prototyped a charging cart for the vehicle's accumulator, including designing a liquid cooling loop for thermal management

Saddleback College Robotics **Mission Viejo, CA**
Team Lead *July 2023 - July 2024*
Mechanical Subteam Member *September 2022 - July 2023*

- Led 25-member team to design, build, and test a 50 kg Mars rover with a $22,000 budget, placing 17th of 102 teams internationally at the 2024 University Rover Challenge
- Managed mechanical, programming, electrical, and science subteams, generating timelines to meet competition milestones
- Designed and built a tabletop dynamometer for hardware-in-the-loop (HITL) testing of electric motors and controllers
- Developed a custom 40"x17" ground control station with integrated PC, monitors, and connection ports, reducing cost by $1,500 and enabling rapid deployment
- Created a weight tracking spreadsheet cataloguing 400+ parts, enabling weight reduction to stay within competition limits