

EDUCATION

Harvey Mudd College, Claremont, California
Bachelor of Science
Dacia Toll Scholarship Recipient

Expected May 2026

RELEVANT COURSEWORK

In Progress: Fluid Mechanics, Mechanics of Structures & Solids

Completed: Multivariable Calculus, Data / Prob. / Stats for Engr., Diff. Equations / Applied Math for Engr., Thermodynamics, Elec. & Magnetic Circuits / Devices, Materials Engr., Experimental Engr., Intro to Engr. Design & Manufacturing, Advanced Systems Engr., Continuum Mechanics, Computer Science, Mechanics & Wave Motion

SKILLS

CAD/CAE Software: SolidWorks, AutoCAD, COMSOL Multiphysics

Programming & Data Analysis: MATLAB, Python, LabView, R, C, SystemVerilog, Excel, VS Code

Fabrication & Prototyping: Advanced 3D Printing (SLA, SLS), Laser Cutting, Milling, Lathe Operation, Soldering

Programming Language: Python, Javascript, C, Arduino, SystemVerilog, R, Excel

Languages: English (Native), Spanish (Native), and French (Limited Proficiency)

EXPERIENCE

Blue Origin, Claremont, California

August 2025 - Present

Mechanical Team Lead, Clinic Project - Automating the ground-side umbilical mating procedure for the New Glenn rocket to enhance alignment precision, operational speed, and personnel safety.

- Lead the mechanical sub-team in devising and designing a novel actuation system to autonomously guide and mate large umbilical panels, addressing critical mission requirements for alignment accuracy and efficiency.
- Drive the mechanical design process from concept to detailed modeling, conducting trade studies on potential mechanisms and performing structural analysis (FEA) in CAD.
- Collaborate closely with the controls and sensor sub-teams to define system architecture, select hardware, and ensure seamless integration of the mechanical system with the master control algorithm.

Flow Imaging Lab Research, Claremont, California

August 2024 - Present

Student Researcher

- Inspired by the hydrodynamics of the archer fish, investigate novel propulsion systems for aerial-aquatic robots by collecting data across a parameter set of varying amplitude, frequency, tow speed, fin stiffness, and fraction submerged.
- Lead the design and fabrication of experimental apparatus and mounting fixtures using SolidWorks, serving as the lab's CAD Manager.
- Manage and calibrate a 6-axis load cell to precisely quantify hydrodynamic forces and torques generated during water-exit events.
- Analyze fluid dynamics by implementing Particle Image Velocimetry (PIV) to visualize flow patterns and utilizing Computational Fluid Dynamics (CFD) to validate experimental data.
- Maintain and optimize all data acquisition equipment and the experimental tank to ensure operational readiness and data integrity

Indomo TX, Claremont California

January 2025 - May 2025

Mechanical Engineer - Redesigned a next-generation autoinjector for a clinical-stage company's novel, at-home acne treatment

- Engineered key mechanical improvements for the device redesign, focusing on enhancing user experience, ergonomics, and design for manufacturability (DFM).
- Implemented a critical safety interlock that integrated the user activation mechanism with a skin-contact sensor, eliminating the risk of accidental device discharge.
- Developed a decoupled mechanism to separate needle deployment from drug delivery, optimizing the system's mechanical timing to enhance user safety and ensure reliable operation.
- Rapidly prototyped components and test rigs using high-resolution 3D printing (SLA Resin, Powder-Based Nylon) to validate subsystem designs and accelerate the iteration cycle.

Mudd Rocketry Club, Claremont, California

September 2022 - Present

- Contributed to the design and analysis of critical structural components, including collaborative innovative efforts on the rocket's airframe and payload bay in preparation for the 2025 rocket launch
- Designed a parachute and mounting system for a remote-controlled rover, deploying on descent.
- Fabricated composite bulkheads, centering rings, and fins to tight tolerances using a mill, waterjet cutter, laser cutter, router, rotary tool, drill, and drivers.
- Collaborated closely with the Avionics and Recovery sub-teams to ensure seamless integration of components and systems.