

Terry Yu

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EDUCATION

University of California, Los Angeles

Expected June 2027

Bachelor of Science in Mechanical Engineering — GPA: 3.70

SKILLS

Design & Analysis: SolidWorks, FEA/CFD (ANSYS Mechanical/Fluent), GD&T, Failure Analysis, DFMEA, DFM/DFA
Prototyping: CNC & Manual Mill/Lathe, FDM/SLA 3D Printing, Hand Tools, Laser/Plasma/Waterjet Cutting, Soldering
Electrical/Software: MATLAB, Python, C++, Arduino, Java, sensor integration

EXPERIENCE

Bruin Formula Racing

September 2023 – Present

Drivetrain Lead

Los Angeles, CA

- Directed driveline architecture, leading a team of 15 through full design cycle; cut serviceability time 20%, reduced weight 15%, and improved competition score +6 pts.
- Fabricated parts in-house with HSMWorks and 3-axis CNC to ± 0.003 in tolerances, introducing process changes that reduced manufacturing costs by 20% and improved manufacturing reliability.
- Led Finite Element Analysis (ANSYS) and Topology Optimization on components, reducing sprocket weight by 40%.
- Coordinated drivetrain integration with electrical components, validating interfaces under competition deadlines.
- Innovated custom CV boots and slider mold process, iterating 5 versions to replace faulty designs and reduce cost 50%.

SpaceX

September 2025 – Present

Propulsion Engineering Intern

Los Angeles, CA

- Spearheaded redesign of a relief valve, reducing cracking pressure by 30%; led thermal, vibrational, and fatigue qualification tests; integrated into falcon fleet and future boosters, improving fleet reliability.
- Owned flight-critical Merlin valves across 16 launches and counting, preventing 15 days of cumulative delays.
- Designed and executed life-extension tests on 10–15 valves ($30\times$ reuse), generating data for reuse policy.

DropletPharma Corp.

June 2025 – September 2025

Mechanical Engineering Intern

Los Angeles, CA

- Designed and tested custom microfluidic nozzle capable of dispensing 1 μL fluids with $<5\%$ variation across 100+ trials; applied Ishikawa root cause analysis through 10+ design iterations to systematically eliminate failure modes.
- Modeled airflow on ANSYS Fluent, with smoke gun tests for validation, to optimize thermal dissipation and flow uniformity of a fume extractor within a $30 \times 10 \times 5$ mm enclosure.
- CNC machined components from PEEK, PTFE, and aluminum to support R&D iteration of systems.

Stanford University

June 2024 – May 2025

Mechatronics Research Intern

Palo Alto, CA

- Designed hardware with microfluidic chip and electronics packaging, for a computer-vision embryo sorter with projected throughput at 50 embryos/s with 99% accuracy.
- Iterated through 5+ functional prototypes to optimize for sorting accuracy/speed of millimeter-wide *Xenopus* embryo, developing a PDMS-based microfluidics chip with a quake valve sorter mechanism.
- Fabricated SLA molds and FDM housings; integrated chip and electronics into a compact, modular unit.

ROBOTICS/PERSONAL PROJECTS

Pen Plotter | [Project Link](#)

September 2024

- Built and iterated 7+ versions of a CoreXY pen plotter with custom 3D-printed bearing rails for precise, efficient motion.
- Developed custom bitmap to G-code slicer with image processing algorithms using Java, Python, and C++, enabling accurate CoreXY motion control and real-time plotting communication with Arduino.

Electric Go Kart | [Project Link](#)

May 2024

- Led team of 4 in design, analysis, manufacturing, and assembly of a three-wheeled go kart with speeds of 15 mph.
- Implemented a single-wheel front steering to reduce weight; used plasma cutting, machining, and 3D printing to manufacture components from recycled scrap, under cost constraint of $<\$100$.