Terry Yu

669-281-6222 | terryyu05@gmail.com | linkedin.com/in/terryyu05 | ty1649.github.io

Education

University of California, Los Angeles Expected June 2027

Bachelor of Science in Mechanical Engineering - GPA: 3.70

Skills

Design & Analysis: SolidWorks, Failure Analysis, GD&T, Ansys Mechanical/Fluent, DFM/DFA, Siemens NX, Fusion 360
Prototyping: CNC & Manual Mill/Lathe, FDM/SLA 3D Printing, Waterjet, Plasma/Laser Cutting, Soldering
Electrical/Software: MATLAB, C++, Python, Arduino, Java, Raspberry Pi, ROS2

Experience

SpaceX September 2025 – Present

Propulsions Engineering Intern *Los Angeles, CA*

- 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× reuse), generating first-ever data beyond Falcon fleet records to validate long-life reliability and influence reuse policy.
- Qualified a relief valve redesign reducing cracking pressure by 30%, improving reliability across 90–180 valves fleet-wide.
- Authored and executed 10+ test plans (shock, proof, vibration, thermal), ensuring safe reintegration of reused hardware.

Bruin Formula Racing September 2023 – Present

Drivetrain Lead *Los Angeles, CA*

- Directed driveline architecture and led a team of 5, redesigning hub torque transfer & shim/spring assemblies to cut serviceability time 20%, reduce weight 15%, and improve competition score +6 pts.
- Coordinated drivetrain integration with chassis/electrical subsystems, validating interfaces under competition deadlines.
- 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.
- Innovated custom CV boots and slider mold process, iterating 5 versions to replace faulty designs and reduce cost 50%.

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.
- Engineered a compact 30 mm × 10 mm × 5 mm fume extractor for toxic vapor removal, optimizing airflow while maintaining serviceability under extreme packaging constraints.
- CNC machined components from PEEK, PTFE, and aluminum to support R&D of systems under tight tolerances.

Stanford University June 2024 – May 2025

Mechatronics Research Intern *Palo Alto, CA*

- Designed hardware for a computer-vision embryo sorter, projected throughput at 50 embryos/s with 99% accuracy.
- Developed a PDMS-based microfluidics chip with a serpentine flow channel and quake valve sorter mechanism, enabling quick imaging and sorting of millimeter-wide Xenopus embryo.
- Fabricated SLA molds and FDM housings; integrated chip and electronics into a compact, modular unit.

Projects

Pen Plotter | Project Link September 2024

- Developed custom bitmap to G-code slicer with image processing algorithms using Java, Python, and C++, enabling precise CoreXY motion control and real-time plotting communication with Arduino.
- Built CoreXY pen plotter with fully 3D-printable recirculating ball bearing rails for precise, low-friction motion.

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.