Leonard Chau

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Summary

Mechanical Engineer with hands-on experience designing, fabricating, assembling, and troubleshooting mechanical and electromechanical hardware. Experienced in taking projects from concept through CAD, prototyping, testing, and iterative refinement, with a background spanning precision machining, welding, automation, and experimental research systems. Equally comfortable designing components, operating shop equipment, and solving complex hardware problems.

Education

Bachelor of Science, Mechanical Engineering
San Francisco State University (SFSU), San Francisco CA | May 2026 | GPA: 3.82 | Dean's List (Fall 2023 – Spring 2026)

Honors & Certifications

FE Exam (Mechanical), NCEES — Passed April 2026

Outstanding Undergraduate Achievement Award — SFSU College of Engineering, 2026

Tau Beta Pi, California Alpha Gamma Chapter — Engineering Honor Society
Initiated Spring 2025 | Vice President, Spring 2025 – Spring 2026

Skills

Fabrication & Machining: Manual mills and lathes (setup, fixturing, light cuts), band saws, drill presses, TIG welding (steel, stainless, aluminum), MIG, Stick, and Flux-Core welding (steel), oxy-acetylene cutting, plasma cutting, hydraulic press, thread tapping, helicoil inserts, deburring, powder coat prep, GD&T, press-fit and slip-fit design

Metrology & Inspection: Calipers, micrometers, gauge pins, dial indicators, surface plates

Design & Software: Fusion 360, SolidWorks, OpenSCAD, engineering drawings and print reading, DFM, Microsoft Office; familiar with Python, MATLAB, C++, Git, LaTeX

Electromechanical & Instrumentation: Servo and stepper motor systems, Arduino and Raspberry Pi GPIO, sensor integration, cable routing and harness assembly, connector crimping, camera mounting, optical alignment, and lens selection, oscilloscope, multimeter, soldering

Experience

Bioengineering Undergraduate Researcher | *SFSU* | Fall 2024 – Present

- Designed CAD models and fabricated over 20 custom fixtures and mounts for automated microscopy systems, iterating hardware and software designs through testing to improve reliability, usability, and experimental repeatability.
- Act as the primary engineering resource for biological researchers, independently diagnosing electromechanical failures, performing alignment and calibration, and executing iterative hardware modifications.
- Translate experimental requirements into mechanical solutions through a full design-to-fabrication workflow: CAD modeling, 3D printing, iteration, and final assembly.

Engineering Machine Shop Assistant | *SFSU* | September 2024 – Present

- Support 5–10 project teams and 30+ students per semester on manual mills, lathes, welding equipment, 3D printers, laser cutters, and waterjet systems.
- Trained and mentored 5 junior student assistants on equipment operation, DFM principles, tolerance stack-ups, and safe shop practices.
- Authored SOPs, equipment guides, and safety documentation to standardize shop procedures and enable independent student operation.

Independent Mechanical Design & Fabrication Projects | 2022 – Present

- Reverse-engineered and fabricated replacement components across six antique typewriter models, producing 100+ prototype iterations with several parts deployed on personal machines and sold to customers.
- Solved complex geometric interfaces and alignment-critical component challenges to produce functional replacements for historically difficult-to-reproduce mechanisms.

NSF Center for Cellular Construction — Summer Course | *SFSU* | August 2025

- Selected for an NSF-funded two-week intensive course on rapid development of robotic and automated microscopy systems; led hands-on fabrication work and operated the completed system during experimental data collection.

TIG Welder & Fabricator | *Altamont Manufacturing, Livermore CA* | April 2019 – April 2022

- Fabricated production hardware for commercial, industrial, and research customers from engineering drawings, working full-time for three years in a high-volume manufacturing environment.
- Performed TIG welding on steel and aluminum assemblies; operated mills and lathes for part preparation; identified and corrected fit-up, alignment, and thermal distortion issues in collaboration with machinists and engineers.