

Abraham Galicia

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EDUCATION

University of California, Berkeley

Berkeley, CA

Bachelor of Science in Mechanical Engineering, Concentration in Aerospace Engineering

Aug. 2021 – May 2025

TECHNICAL SKILLS

Languages: Latex, Python, C/C++, MATLAB, MicroPython

Developer Tools: VS Code, Visual Studio, Eclipse

Libraries: pandas, NumPy, Matplotlib

CAD & Simulation: SolidWorks, Autodesk Fusion 360, Onshape, ANSYS, FEA, CFD

Machining & Prototyping: End mill, Lathe, Drill Press, Band Saw, Soldering, 3D Printing, Hand Tools, ESP32

Controls & Robotics: PID Tuning, Motor Control, Bluetooth/PS4 Interface, State Machines

EXPERIENCE

Manufacturing Member -Stars (Space Technologies and Rocketry Society)

Dec 2024 – Jun 2025

University of California, Berkeley

Berkeley, CA

- Contributed to the CAD modeling of rocket propulsion components using CAD Software
- Attended weekly team meetings and work sessions to collaborate on design and manufacturing timelines
- Assisted in fabrication of structural and propulsion system parts
- Operated standard machine shop tools and followed fabrication drawings to meet design specifications.
- Streamlined workflow and improved team efficiency through documentation and task planning

Composite Rocket Nozzle Research

May 2025 – July 2025

UC Berkeley

Berkeley, CA

- Designed a composite nozzle using CAD with hoop-directional fiber reinforcement for extreme thermal loads
- Simulated performance and thermal stress relief using ANSYS; explored manufacturing via ceramic 3D printing and compression molding
- Planning fabrication and hot-fire testing for validation; targeted for presentation at a tech expo and publication by NASA Resource Network

Library Assistant

July. 2023 – Present

UC Berkeley

Berkeley, CA

- Utilized Google Workspace to track requests, organize inventory, and ensure workflow is streamlined
- Assisted patrons and ensured smooth daily library functions under minimal supervision
- Communicated workflow issues with supervisors and collaborated on practical solutions to improve daily operations
- Acted as a liaison between student patrons and library supervisors to relay concerns and ensure timely resolutions

PROJECTS

Sowbot | C/C++, SolidWorks, Onshape, 3D Print, Design iteration

Jan 2025 – May 2025

- Engineered a robotic system integrating motorized wheels, a seed dispensing mechanism, and a drill-based digging tool
- Collaborated with team members to design mechanical subsystems in CAD and ensure manufacturing feasibility
- Iteratively tested and refined mechanisms to ensure reliable seed planting under variable conditions

Geometrical Study | Ansys, Onshape

Jan 2025 – May 2025

- Collaborated in a team to design various geometries using Onshape for a mechanical component of interest
- Simulated stress and thermal responses in ANSYS to identify the most effective design based on performance metrics
- Analyzed simulation data and contributed to a technical paper summarizing methodology, findings, and design trade-off

Drone | Eclipse, C/C++

Aug 2024 – Dec 2024

- Collaborated in a team to design and implement flight algorithms in Eclipse for embedded drone systems
- Implemented flight stabilization algorithms to maintain level flight using real-time sensor feedback (IMU)
- Tuned PID controllers to improve response to environmental disturbances and self-correct in-flight errors
- Contributed to onboard software development using Python and C++ on embedded platforms