Abraham Galicia

323-705-2339 | abraham21@berkeley.edu | linkedin.com/in/abraham | github.com/abraham

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 – Ongoing
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 — Jul 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