Javier De Leon-Flores

Los Angeles, CA| jdeleonfl0001@gmail.com|+1 213-451-0809
linkedin.com/in/javierdlf

Education

University of Virginia, Double major in Mechanical and Aerospace Engineering *Aug 2024 – Dec 2027*

- GPA: 3.558
- Relevant Coursework: Computational Methods, Fluid Mechanics, Heat and Mass Transfer, Compressible Aerodynamics

Related Experience

MARS at UVA – NASA Lunabotics, Front Loader Sub team Lead *Sep 2024 – Present*

- Achieved 5th at NASA Lunabotics 2025 and earned two competition awards among 38 international teams.
- Directed a 5-member sub-team, integrating workstreams and leading documentation to meet design review deadlines.
- Reduced system mass by 20kg through bucket geometry optimization and center-of-mass redistribution using SolidWorks analysis and hand calculations.
- Designed and executed a test setup to analyze the impact of vibration-induced fluidization on frictional resistance; results enabled reduction of deposit angle from 45° to 15°.
- Fabricated aluminum components via CNC milling, waterjet cutting, and metal rolling, contributing to final rover assembly.

Work Experience

Factory Direct Fastening, Mechanical Design Engineer (Electrical Box Lock) May *2025 – Present*

- Delivered design revision of a municipal electrical box locking mechanism, optimizing original concept for manufacturability, deployment, and theft deterrence.
- Redesigned body into simplified finger-joint mechanism, reducing total part count from 11 to 4 while increasing functionality.
- Conducted SolidWorks motion analysis and tolerance evaluation to validate joint engagement and assembly robustness; creating a seamless connection while locked.
- Produced complete engineering drawings and manufacturing specifications; collaborated directly with two manufacturers to refine geometry, achieving a 10% reduction in manufacturing cost and a fabricated prototype.

Factory Direct Fastening, Mechanical Design Engineer (Vacuum Hole Excavator) May *2025 – Present*

- Created initial prototype of a vacuum-powered soil excavation device for municipal and backyard applications, producing interest with Home Depot.
- Designed cyclone separator system to support efficient soil extraction and minimize vacuum clogging.
- Analyzed cyclone efficiency with Ansys Fluent and real product testing to determine a suitable cyclone geometry.

Simply Stretch, Product Design Engineer *May 2025 – Present*

- Led mechanical product design for an all-in-one full body stretching machine used in physical therapy and senior fitness, ensuring structural stability, cost efficiency, and manufacturability.
- Used FEA to evaluate strength of different aluminum chassis geometries; comparing the strength to volume ratio; allowing for material analysis and the ability to use cheaper material while maintaining strength.
- Created 3D assembly and engineering drawings; coordinated design hand off and fabrication specifications; produced two full-scale metal prototypes through our manufacturer.

Storage Scholars, Student Operations Manager *Aug 2024 – Present*

- Managed 5+ mover teams, coordinating 150+ customer moves per semester with 98% on-time delivery rate.

Skills

Technical: SolidWorks (CWSP), Fusion 360, Ansys, Matlab, Python
Manufacturing: CNC Milling, Waterjet, Sheet Metal, 3D Printing
Design and Analysis: FEA, GD&T, CFD, Tolerance Analysis, DFM/DFA