

Abraham Cabrera Gonzalez

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EDUCATION

University of Colorado Denver

Bachelor of Science in Mechanical Engineering, Minor in Electrical Engineering

Aug. 2021 – May 2025

GPA: 4.00

WORK EXPERIENCE

Undergraduate Fluids Research Assistant

University of Colorado Denver

Sep. 2023 – Present

Denver, CO

- Direct wind tunnel testing for vibrational characteristics of power lines impacted by icing.
- Integrate hot-wire anemometry and laser displacement sensors with a DAQ system to capture precise airspeed and displacement data.
- Process data on MATLAB using FFT algorithms for the natural frequency of displacement and vortex shedding.

Product Engineering Intern

Trane Technologies

May 2024 – Aug. 2024

Pueblo, CO

- Led 5-person team on quality project to improve the durability of chiller unit safety labels through collaboration with industry experts and suppliers.
- Achieved 66% increase in the expected lifespan of chiller safety labels through selection of optimal adhesive and lamination materials.
- Managed bill of material and design changes that streamlined manufacturing on production lines.

PROJECT EXPERIENCE

Automated Pulse Tool Tester | *Atlas Copco*

Aug. 2024 – May 2025

- Collaborating with students at Linköping University in Sweden to design and manufacture a system that automates the testing and calibration of industrial pulse tools.
- Executed product design techniques such as Gantt charts, axiomatic design maps, and morphological matrices to converge on a solution that meets customer requirements.
- Produced subsystem concepts through rapid prototyping techniques, including additive manufacturing.

CFD and Wind Tunnel Comparison of Airfoil

Aug. 2023 – Dec. 2023

- Conducted wind tunnel testing of NACA 4412 airfoil to find the coefficient of lift at various angles of attack.
- Developed 2D testing domain of the airfoil on ANSYS Fluent, replicating the same ambient conditions as the experimental test.
- Compiled and analyzed results using Excel to compare experimental and CFD lift coefficients graphically.

Rocket Lynx

Jan. 2023 – May 2023

- Wired and soldered battery-powered ignition system leading to successful test of hybrid rocket propulsion system.
- Designed and 3D-printed a two-part circuit housing using SolidWorks and PrusaSlicer, integrating heat-set threaded inserts for ease of maintenance.

TECHNICAL SKILLS

Software: SolidWorks (CSWA), MATLAB, Excel, ANSYS Fluent, PTC Windchill, Python, Microsoft Office Suite

Machinery: CNC Mill & Lathe, Drill Press, Band Saw, Soldering Iron, Consumer 3D Printers

Languages: Fluent in Spanish and English

ORGANIZATIONS / LEADERSHIP

Vice President

Society of Hispanic Professional Engineers CU Denver Chapter

Aug. 2023 – Present

Denver, CO

- Promoted inclusive leadership and professional development initiatives to support the advancement of underrepresented students at an HSI-designated school.
- Assisted in outreach to promote events in collaboration with professional engineers and local companies.

Lead Mentor

Engineering Learning Community at CU Denver

Jan. 2024 – May 2024

Denver, CO

- Organized academic mentorship program aiding incoming freshmen in engineering.
- Planned professional career events such as resume workshops.