



JAVIER A. CUEVAS CHABRIER

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Education

University of Central Florida (UCF) Expected Graduation: May 2029; Aug 2024 - Present

- B.S. Mechanical Engineering, B.S. Computer Science

Research and Industry Experience

Code Meets Bagel – **Software Engineering** – Software Developer Jan 2025 – Mar 2025

- Developed and integrated an AI-powered Slack bot using Python, OpenAI, and Anthropic, increasing marketing efficiency for clients while managing GitHub workflows.

UCF Aerospace – **Robotics/Aerospace Engineering** – Research Assistant (RA) Sep 2024 – Mar 2025

- Managed the design team, developing electronic housing models for research and commercial deployment.

UCF CREOL – **Optics and Photonics – Drafting and Assembly** – RA Sep 2024 – Mar 2025

- Conducted research under Professor Eikenberry of the CREOL department at UCF.
- Developed drawings for and assisted in the manufacturing of the Original Polyoculus Assembly Enclosure.
- Drawings were clear and effective to interpret, eliminating any miscommunication amongst teams.

Partnerships for Research and Education in Materials – **Quantum Physics** – RA Sep 2024 – Oct 2025

- Built Python automation tools for lab data, which led to faster data analysis.
- Operated AFM, CVD furnace, and thermal evaporator.
- Studied the growth kinetics and transfer mechanics of monolayer MoS₂.
- Built transfer machine used for 2D materials. Used cartridge heaters and a PID controller.

Well Bilt Industries – **Industrial Engineering** – Engineering Intern Sep 2023 – Aug 2024

- Used Engineering FEA/drafting programs to produce technical drawings. Accelerated production time.
- Handled customer projects and designed large-scale hangar door engineering systems.
- Developed Python programs including a BOM handling tool and a RISA-based calculator that generates grid points from door dimensions. Coding programs assisted in time-consuming tasks, resulting in faster project completion.
- Built a custom Excel database to manage RISA structural models and automate wind load calculations based on building dimensions. This tool improved accuracy and reduced preparation time when inputting load cases into RISA for structural analysis. Allowed for efficient tracking of previous projects and accurate estimation of future project beam types and locations.
- Designed an Excel tool for easy access to past project templates, speeding up project setup.

Propulsion and Energy Research Lab (PERL) – **Propulsion Engineering** – Research Assistant Jan 2025 – Present

- Conducted research under Professor Kareem Ahmed of the Aerospace Engineering department at UCF.
- Generated an isentropic flow calculator to calculate mass flow values per reactant to reach desired chamber pressure, gas velocity, and momentum flux using Cantera. Focused on simulations for emissions with respect to residence time using Cantera library. Reduced time to generate inputs for testing from weeks to days.
- Worked on design, manufacturing, and assembly of propulsion systems, increasing lab productivity.
- Assisted in testing the propulsion system for the axial stage combustion chamber project.
- Tested individual fuel and oxidizer properties and handled data analysis post-testing.

University of Central Florida – **Systems & Software Engineer** – CWEP Systems Engineer Sep 2025 – Present

- Assisted in the generation of models using Cameo Systems Modeler that demonstrate project simulations.
- Enhanced a Cameo Systems Modeler plugin to automate model generation through AI source code parsing, reducing project completion timeframes from days to minutes & introducing flexibility in code parsing.

Leadership and Organizations

Society of Hispanic Professional Engineers (SHPE) – ResearchSHPE Director

- Mentor | Outreach Volunteer Director | ResearchSHPE Director.
- Helped coordinate volunteering events, leading to smooth and efficient events.
- Established connections with Principal Investigators and working towards ResearchSHPE symposium.

UCF Knights Experimental Rocketry (KXR) – Propulsion Director

- Lead Propulsion | Tailgating Committee | IREC Payload Team | Propulsion Director.
- Led propulsion design for IREC rocket; improved system design; optimized production.
- Used OpenRocket to simulate rocket trajectory and OpenMotor to simulate grain performance.
- Designed payload chassis components inspired by NASA's 3U CubeSat.

UCF Baja SAE – Suspension and CAD Team Member

- Drafted/assembled key parts for BAJA vehicle. Accelerated part manufacturing with improved CAD practices.
- Ran simulations on parts to study the reactions under certain loads with modest safety factors.

Projects and Competitions

- Designed and fabricated solid propellant rocket motors. Executed static fire tests and leveraged data analysis to optimize thrust output and structural integrity.
- Integrated Google's AI model, Gemma, to build an application that would improve marketing efforts for small to medium businesses. Theoretically analyses market trends and ad performance.
- Built a dominoes game, parabola calculator, and business manager in C and Python.
- Designed a compact dominoes case made for portability without the need for a table.
- IREC competition – led propulsion and contributed to payload development.
- Working on the design of a robotic car/arm and a portable dominoes case with lighting.
- Building an electric generator utilizing copper coils, magnetic assemblies, and custom 3D-printed parts derived from personal CAD designs and previous research.
- Conducting research on bi-propellant combustion chamber for future development.

Awards and Certifications

- Dean's Award for academic excellence from the College of Central Florida.
- SolidWorks (SW) CSWA and CSWP Certified | AutoCAD Certified.
- MATLAB Onramp + Machine Learning Onramp Certified.
- Security Clearance (obtained May 2026)
- Awarded UCF Scholar Symposium Judges Choice Award for research on thinning nanomaterials.

Skills

- **Hands-on:** soldering; power tools; thermal evaporator; Atomic Force Microscopy; Chemical Vapor Deposition; 3-D printing; bi-propellant & solid propellant motor assembly; solid propellant grain casting.
- **Engineering Drafting:** AutoCAD Certified; SW Professional and Associates Certification (WBI).
- **Simulations:** RISA; Ansys (CFD/FEA); SW (renders/analysis); Open Rocket; Open Motor; NASA CEA.
- **Manufacturing Programs:** Messer Nesting (WBI Intern); Beamline (WBI).
- **Programming Languages:** Python (Automation scripts, machine learning prototypes, data visualization); MATLAB (Numerical analysis, ML applications); C/C++ (Algorithm implementation, performance-focused programming); Java (Object-oriented programming, material analysis tools); Data Structures/Algorithms (Hash maps, linked lists, recursion, optimization); Git (Version control, collaboration).
- **Microsoft Applications:** Excel (SIMNET badges: White Belt, Purple Belt); Word; PowerPoint; Outlook.
- **Language Proficiency:** Fluent in Spanish and English; learning French.