

FERNANDO VÁZQUEZ RIEFKOHL

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U.S. citizen · Relocating to Puerto Rico — available June 2027

EDUCATION

Case Western Reserve University · Cleveland, OH

Aug. 2022 – Present

- B.S. in Mechanical & Aerospace Engineering, Secondary Major in Finance • Expected Spring 2027 • GPA: 3.51/4.00
- Relevant coursework: Thermodynamics, Fluid & Thermal Element Design (heat exchangers), Fluid Dynamics, Flight Mechanics, Orbital Dynamics, Control Systems, Circuits, Design & Manufacturing II
- Awards: Hispanic Scholarship Fund Scholar (2026–27), National Merit Scholar, AP Scholar

Universidad Carlos III de Madrid · Madrid, Spain · Study abroad, aerospace coursework completed in Spanish

Spring 2024

ENGINEERING PROJECTS

Mach Corridor — Supersonic Overland Flight Forecaster · Personal project

2026

- Designed and built a live web app that forecasts where supersonic aircraft can fly over land without the sonic boom reaching the ground, using ray-acoustics Mach-cutoff physics (temperature, humidity, wind, terrain) for 36 headings × 7 flight levels on NOAA GFS weather refreshed 4× daily.
- Validated against 4,283 weather-balloon soundings and 1,044 GFS forecasts (day-ahead error 0.015 Mach); a 7,632-flight hindcast showed forecasts capture 77% of the perfect-information benefit (28 min saved per overland flight).
- Designed a time-dependent route optimizer respecting 14 CFR 91.817 territorial limits, winds, acceleration, and fuel, plus an economics model comparing supersonic designs against the Boeing 787-9.

Baha Blast 1,700 cc Motorcycle Engine — EMAE 360 Design Project · Thermodynamics Team Lead

Fall 2026

- Built a parametric, crank-angle-resolved cycle model (slider-crank kinematics, p–V and gas-force traces) and a compression-ratio study (CR 8.5–11) trading efficiency against peak pressure.
- Ran a NASA CEA equilibrium analysis showing the ideal Otto cycle overstated peak pressure by 36%, correcting the peak piston force the mechanical team designs against from 99.9 to 64.3 kN.
- Disproved air cooling with a fin heat-transfer model (10.8× short even under favorable assumptions), locking liquid cooling.

EXPERIENCE

Sales Intern — Bell Textron Inc. · Fort Worth, TX

Summers 2025 & 2026

- 2025: Developed the Bell 525's 500-hour Operational Evaluation plan: interviewed pilots, organized flight phases, and split the program into five blocks with task lists tracking completion of the Master Task Plan.
- 2025: Built a global weather-limitation tool over 13,000+ weather stations showing, for any aircraft's performance limits, where, when, and what percentage of the time it can operate.
- 2026: Built and backtested a five-model, 5-year helicopter demand forecast for 31 Latin American markets (21 years of order history), shipped with 116 automated tests.
- Interviewed pilots, engineering managers, and sales reps; visited 9 Bell sites across DFW, including the Flight Research Center.

Operations Systems Consultant — Independent · Puerto Rico

Aug. 2026 – Present

- Built scheduling systems for a 4-location retail chain and a pharmacy that enforce labor rules automatically; saves one manager 16 hours per 2-month schedule.

Co-Founder & Finance Director — Puerto Rican Student Association, CWRU

Aug. 2024 – Jun. 2025

- Co-founded the association; ran cultural events (40+ attendees) for Cleveland non-profits and managed ~\$6,000 in annual funding.

SKILLS & INTERESTS

Engineering Analysis: MATLAB, NASA CEA, SolidWorks (CSWA) incl. FEA and CFD simulation, wind tunnel airfoil testing, Python (pandas, NumPy, SciPy), Excel, Git, CI/CD.

Design & Fabrication: AutoCAD, manufacturing drawings, 3D printing, machining (mills, lathes, drills), welding, Arduino and circuits.

Languages & Certifications: English & Spanish (fluent), Italian (intermediate) • FE Mechanical exam scheduled March 2027 • Student Pilot (FAA written, 85%) • DRNA Navigation License

Interests: Golf, aviation, boating, drones, spaceflight, baseball.