Fernando Mendez

www.linkedin.com/in/mefernando | (575) 249-8792 | fmendez@nmsu.edu

EDUCATION

New Mexico State University (NMSU) — Las Cruces, NM

- Master of Science in Mechanical Engineering — Expected Fall 2026 | GPA: 3.90/4.0
- Bachelor of Science in Aerospace Engineering — Fall 2024 | GPA: 3.95/4.0
  Graduated with Honors
- Bachelor of Science in Mechanical Engineering — Fall 2024 | GPA: 3.95/4.0
  Graduated with Honors
  Minor in Physics

SKILLS

- **Manufacturing:** Process mapping, pareto/waste tracking, assembly/test work-instruction, sheet metal fabrication and CNC machining
- **3d CAD & Drafting:** Solid Works, Catia v5, Ansys Design Modeler; GD&T, tolerance checks, prototype build
- **Prototyping & Test:** Test plans, DoE, fixture design, dyno & sensor integration, data acquisition
- **Analysis:** Heat transfer, mechanisms, FBD, CFD (Ansys Fluent), DEM (Rocky)
- **Programming & Data:** Python (Pandas/NumPy/Matplotlib), MATLAB, Power Bi, Excel VBA, Java, Android Studio
- **Documentation:** Verification/validation plans, engineering change docs, dashboards, lab reports

WORK EXPERIENCE

Graduate Research Assistant — Las Cruces, NM

New Mexico State University (NMSU) College of Engineering — Jan 2023 – Present

- Built CFD-DEM models in Ansys Fluent and Rocky DEM to study particle transport and dissolution in USP-II vessels; designed studies across shapes (sphere, ellipsoid, spherocylindrical), sizes (10–150 um) and densities.
- Automated Ansys Fluent and Rocky data analysis with python: (Pandas, NumPy, Matplotlib) to turn into probability distribution function normalization (by bin width), moment calculations (mean/variance/skewness), and automated comparative plotting.
- Performed simulations across coupling modes and contact models, and implemented UDF-based body-force models.
- Presented results in recurring technical reviews with Eli Lilly, shaping next-step parameter sweeps and acceptance criteria.
- Characterized materials (stiffness/strength/flexibility) for a soft-robotic intestine, and streamlined micro-villi fabrication (~75% faster).
- Automated image capture and tensile-test data handling in python to reduce manual work and improve data quality

Internship: L9 Platform Service Engineering Intern — Columbus, IN

Cummins Engine Business Unit (Cummins EBU) — May 2024 – Aug 2024

- Audited failure-code claims and validated accuracy using data analysis and visualization.
- Led engine-replacement evaluations; identified multi-million-dollar cost-saving opportunities.
- Built a Power BI dashboard (with Python integration) to track and visualize fault codes.
- Researched full powertrain integration to improve diagnostics and performance.
- Investigated $15k+ high-value claims to identify root causes and refine processes.
- Automated ~80% of analysis/reporting via Excel macros

Co-op Test Engineer — Stoughton, WI

Cummins Emission Solutions (Cummins CES) — May 2023 – Dec 2023

- Supervised testing of diesel engines and aftertreatment systems to meet standards/specs.
- Analyzed test data to identify trends and performance improvements.
- Developed and upgraded MATLAB GUIs; added algorithms that cut analysis time by 15%.
- Ran tests recording flow, temperature, pressure, and difference of pressure to assess engine performance.
- Supported evaluation and acquisition of new test equipment and technologies.
- Performed root-cause analysis on anomalies and implemented corrective actions.
- Operated/maintained dynamometers and emissions measurement devices for quality data.
- Developed features to MATLAB GUIs for streamlined reporting

Co-op Manufacturing and Process Engineer — Chihuahua, Mexico

EZ AIR (Safran, Aerospace Industry) — Jan 2022 – Jul 2022

- Built Excel and Python tool to improve communication between engineering and production; automated task prioritization/notifications (Pandas, NumPy) and automated pareto chart creation for waste metrics in Excel, improving visibility and response to scrap/rework
- Supported sheet metal fabrication and CNC machining operations; partnered with operators to troubleshoot build issues and reduce rework.
- Created an inventory tracker to prevent tool loss; trained operators on effective use.
- Supported manufacturing and quality engineering across assembly, testing, and final inspection.
- Used CatiaV5 for 2D part checks and template creation, reducing rework/errors.
- Improved a countersink operation by upgrading/standardizing a drill press setup; wrote basic manuals and trained teams.

PROFESSIONAL DEVELOPMENT

North Texas Semiconductor Institute Bootcamp — Richardson, TX

University of Texas at Dallas (UTD) — May 2025-June 2025

- Completed a 40-hour, ISO-5 cleanroom immersion: spin coat, UV lithography, wet/dry etch; inspected patterned wafers via SEM/AFM.
- Performed IC package decapsulation on commercial devices to expose the die; conducted die-level failure analysis (optical/SEM).
- Designed and verified CMOS logic blocks (inverter, NAND, NOR) with full functional yield.