

Pablo Pena

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EDUCATION

University of Texas at Austin - *Expected (2024 - 2028)*

Pursuing a Bachelor of Science in Mechanical Engineering

Cumulative GPA: 4.0/4.0

EXPERIENCE & ACTIVITIES

NASA L'SPACE MCA Apprenticeship | Payload Mechanical Engineer | - *(May 2025 - Present)*

- Optimized chassis material density by 66.25% by conducting a trade study on Aluminum 6061 and Stainless Steel
- Reduced wheel subsystem mass by 89.63% through subtractive CAD and used edge blend to increase stress tolerance

Landry's Information Technology Internship - *(2024)*

- Consolidated 9 critical IT performance metrics into a single Power BI dashboard, streamlining access and improving visibility across departments
- Audited and updated Landry's General Manager intranet site; reviewed and updated over 60 entries and corrected outdated restaurant and staff listings for accuracy
- Developed a C# automation tool to transfer data between loyalty systems via API, eliminating the need for manual CSV data pulls

DSAT & EOG Tutor - *(May 2025 - Present)*

- Improved the academic performance of EOG students by up to 67%
- Increased student DSAT Score performance by 60 points

CLUBS & SOCIETIES

Texas Design Build Fly | Systems Engineer | - *(2024 - Present)*

- Developed, prototyped, and soldered the electrical system for the X-1 vehicle
- Designed and manufactured a pylon capable of securely holding 8.165 kg of steel shot, utilizing CAD software and 3D printing techniques for precision and functionality.
- Improved payload integration of the X-1 vehicle by reducing weight by 11.1%

Student Engineers Educating Kids | Volunteer Educator | - *(2024 - Present)*

- Led weekly engaging STEM activities to over 20 students, including materials engineering (bouncy ball creation with borax and glue) and electrical engineering (RC car assembly using breadboards, DC motors, and batteries)
- Developed and adapted lesson plans to ensure accessibility and engagement

PROJECTS

Mini-Battle Bot

- Designed and modeled a functional 1 lb battle bot with custom-printed wheels
- Designed a spinner with 100% PLA infill to ensure optimal momentum and damage
- Laser-cut chassis to fit a kill switch for emergency shutdown

Hmm: Mathematics & Physics Website

- Reference website for over 190 essential Mathematics and Physics formulas, including Mechanics, Electromagnetism, Thermodynamics, and Fluid Mechanics
- Built with HTML, CSS, and JavaScript. Rendering done with KaTeX and MathJax
- Developed a dynamic search feature, improving formula lookup speed by 23.39% based on a timed comparison study

iPhone & AirPods Stand

- Ergonomic Phone Stand with support for comfortable viewing in both portrait and landscape modes, and a dedicated cradle for AirPods Pro 2
- Optimized CAD model of custom phone stand using fill-patterned hexagonal cutouts, reducing part mass by ~12.07%

ACHIEVEMENTS & AWARDS

- Hispanic Scholarship Fund Scholar - *(11/27/2024)*
- 6th Place in the American Institute of Aeronautics & Astronautics Design Build Fly Competition - *(04/16/2025)*
- University Honors - *(05/08/2025)*

ADDITIONAL INFORMATION

Programming Languages: C++, C#, CSS, HTML, Java, Python, SQL, DAX, LaTeX

Technical Skills: SolidWorks, Siemens NX, Arduino, VS Code, Power BI, 3D Printing, Laser Cutting, Soldering

Soft Skills: Problem Solving, Communication, Leadership, Teamwork