Julio Cesar Garcia

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View live demonstrations of my work at juliocesargarcia.com - my self-coded master portfolio →

EDUCATION - The University of Texas at El Paso (UTEP) - Cumulative GPA: 3.75/4.00

Bachelor of Science in Mechanical Engineering - With a minor in Mathematics	Graduation Date: 05/2023
Master of Science in Mechanical Engineering	Anticipated Date: 12/2025

Honors, Awards & Affiliations:

College of Engineering Dean's List	Fall19, Spring21-Fall22, Spring24-Present
3D Modeling of Space Systems and Concepts, Member	07/2021-07/2024

EXPERIENCE

LEH Luxury Homes – Quality Assurance Engineer — 03/2025 - 07/2025

- Manage the post-construction **warranty process**, coordinating with subcontractors to resolve homeowner requests and ensure customer satisfaction within target timelines.
- Applied **lean manufacturing** by analyzing recurring construction issues, proposing root-cause solutions, & standardizing corrective protocols. One example: Implemented pre-pour **QA checklists** to catch MEP issues before concrete placement.
- Develop and enforce **inspection protocols** across all construction phases: pre-foundation, framing, MEP, finishes, all using FTQ360 to track deficiencies and ensure code and spec compliance.
- Conduct thorough **quality control** site inspections and final homeowner walkthroughs, documenting issues and assigning **corrective actions** to trades via Buildertrend.
- Analyze recurring issues and trends to propose process improvements and create weekly **QA reports** for senior management.

Space Exploration Technology Research Center – Manufacturing Graduate Research - UTEP — 9/2021-12/2023, 1/2025-3/2025

Project advisor: Dr. Flores - afloresabad@utep.edu

- Designed and manufactured a **CNC**-compatible robotic arm with 3 degrees of freedom for integration onto a U2 satellite and implemented research to create **G-codes** for its components using **CAM** features in **NX12** and **Fusion 360 CAM**.
- Worked on the digitization of physical components and artifacts, overseeing their production using various **manufacturing techniques**, including traditional methods such as **lathe or mill**, and innovative approaches.
- Led the **design** and **manufacturing** of a high-pressure interface device capable of withstanding 3000 psi, enabling precise control of airflow for one-plane space testing.
- Engineered and constructed a specialized sled replicating space conditions on an air-bearing table, which improved test accuracy by 33% and contributed to the successful completion of space simulation tests.
- Assisted and mentored 4 new interns while collaborating with **cross-functional teams** to ensure a successful project.

Hiller Measurements Innovative Solutions - Proteus ATE – Engineer Intern — 12/2023-10/2024

- Pioneered the **design** of a high-performance, **manufacturable** rack door, incorporating an Ergotron arm for seamless technician access, significantly enhancing **operational efficiency**.
- Elevated the functionality of the Proteus ATE application by refining a 3D page viewer as well as developing the cable addressing **logic**, demonstrating adaptability and problem-solving skills in **coding**.

PROJECTS

BAJA Society of Automotive Engineers (SAE) - Steering and Brakes team leader — 02/2022-02/2023

- Managed and oversaw 10 individuals in the Steering and Brakes sub-team of the club, teaching them essentials ranging from knowledge on cars to creating **FEAs, CAD, CAM**, and **machining using CNC** and other **conventional methods**.
- Collaborated closely with other team leaders across various sub-teams to analyze current processes, identify bottlenecks, and implement strategies that significantly boosted overall team performance, ensuring successful project outcomes.
- Directed the **design, fabrication**, and **testing** of steering components, utilizing both **CNC machinery** and conventional methods to achieve the **highest precision**. This hands-on approach ensured reliability, safety, and optimal performance.

Manufacturing Engineering Lab, Mechanical Spider — 08/2022-12/2022

- Team lead. **Designed** a functioning spider that controls 8 different legs with only 1 actuator. **Managed** a group of 12 people by assisting and allocating different tasks needed to complete the project. Fully **manufactured** spider out of Aluminum plates.
- Conducted comprehensive research into the materials, components, costs, and methodologies required for the spider.

SKILLS

- **Extensive experience with** Autodesk Fusion 360, Autodesk Tinkercad, Autodesk Tinkercad Circuits, Builder Trend, FTQ360, Blender, NX 12.0, Bambu Studio, Ultimaker Cura 4.13.0, Creality Slicer, Python, GitHub, HTML, CSS, Arduino IDE 1.8.19, MATLAB R2020R, NI LabVIEW 2022, Simulink, Unity, Unreal Engine 5.0.1, Figma, Lucid Chart, Photoshop, Inkscape, and DaVinci Resolve.
- **Microsoft Office Certified by Certiport:** Word 2016, Excel 2016, Outlook 2016, and PowerPoint 2016.
- Metal tool knowledge of a metal machine shop. Blueprint/Drawing Reading. Welding experience and teamwork.
- **Bilingual:** English and Spanish.