

Marcia Aguirre Castro

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EDUCATION

Loyola Marymount University

Major: Master of Science in Mechanical Engineering

Los Angeles, CA

August 2025- December 2026

Instituto Tecnológico Nacional de Mexico

Major: Bachelor of Science in Electrical and Mechanical Engineering

Achievements: Best Internship Project of Class of 2024,

Hidalgo del Parral, Chihuahua, Mexico

August 2019 - December 2024

EXPIERENCE

Loyola Marymount University – REACT LAB

Graduate Researcher | Motion - Driver Behavior Studies

Los Angeles, CA

September 2025 –Present

- Designed and executed 40 driver-behavior experiments with iRacing, Assetto Corsa, and the QS-S125 motion platform to study perception, reaction time, lane-keeping, and control inputs under varying vehicle dynamics conditions
- Analyzed steering, throttle, braking, and acceleration data using MATLAB & Python to derive KPIs for vehicle dynamics and ADAS testing

Loyola Marymount University

Teaching Assistant-

Los Angeles, CA

August 2025 –Present

- Guided students with CAD/CNC/Manufacturing labs SolidWorks, MasterCAM, manual/CNC mills, and 3D printer
- Mentored 32 students with machining, safety, GD&T, and manufacturing workflows

Perfiles del Real, S.A. DE C.V.

Mechanical & Design Engineering Internship

Hidalgo del Parral, Chihuahua, México

August 2024 – December 2024

- Designed a dual-sided molding sander using SolidWorks (3D modeling + motion analysis), improving throughput by ~35% and reducing material waste by 18%
- Performed root cause analysis on dimensional defects by collecting repeatability and alignment data (± 0.05 mm) with calipers and dial indicators; applied GD&T-based assessment to pinpoint misalignment sources and propose corrective actions to stabilize production quality.

Instituto Tecnológico Nacional de Mexico

Robotics & Computer Laboratory Student Assistant

Hidalgo del Parral, Chihuahua, Mexico

August 2023 – May 2024

- Built and tested robotic prototypes integrating Arduino, Python, PID control, and embedded sensors, enhancing prototype response accuracy by 20%.
- Performed corrective and preventive maintenance on robotic arms, embedded systems, and lab instrumentation for teams of 30+ students.

PROJECTS & LEADERSHIP ACTIVITIES

Lions Motorsport

Aerodynamics Engineer

Los Angeles, CA

September 2025 –Present

- Performed CFD/FEM simulations (SolidWorks Flow, ANSYS, Abaqus) for downforce, drag, and cooling.

Instituto Tecnológico Nacional de Mexico

Rainwater Harvesting & Sustainability Project

Hidalgo del Parral, Chihuahua, Mexico

December 2023 – August 2024

- Modeled catchment flow/tank sizing in MATLAB; improved water efficiency ~30%.

Instituto Tecnológico Nacional de Mexico

Founding Member, Formula Student Team

Hidalgo del Parral, Chihuahua, Mexico

December 2023 – August 2024

- Led design concept and prototyping using CAD and simulation tools.

SKILLS

Vehicle engineering: Vehicle dynamics & testing, NVH awareness, ADAS evaluation, benchmarking, human-factors analysis, root-cause investigations, data acquisition, instrumentation.

Software: SolidWorks, ANSYS, MATLAB, Simulink, Python, Excel (VBA), FEM tools, Arduino, iRacing, Assetto Corsa, Qubic QS-S125.

Prototyping & Languages: NC machining, milling, turning, welding, sheet-metal fabrication, 3D printing, laser cutting, mechanical assembly, troubleshooting, English, Spanish and French.