Diego A. López Aquino

diego.lopez12@upr.edu
(787) 422 – 6685
www.linkedin.com/in/diego-lopez-aquino

Profile

Seeking a design internship in the competitive motorsports industry to advance my mechanical engineering skills within a culture that values innovation and problem solving.

Education

University of Puerto Rico, Mayagüez Campus (UPRM) *August 2019 - Expected: December 2026*
Bachelor of Science in Mechanical Engineering Gen. PA: 3.31/4.00
Minor Concentrations in Finances Grad. PA: 3.47/4.00

Experience

Undergraduate Research– UPRM *January 2025 – May 2025*
Topology Optimization

- Created and developed a design algorithm at nTop to **minimize compliance** while achieving **minimum volume targets.**
- Defined mechanical targets to generate **reliable lattices and topology** structures based on predetermined boundary conditions.
- Designed topology-optimized FSAE components, including rockers, uprights, and brake pedal, improving stiffness-to-weight ratios and average stresses by 13% or more while reducing maximum stresses and weight by at least 10%.

Boston Scientific, Dorado *August 2024 – December 2024*
Co-Op as Manufacturing Engineer

- Created a database to monitor manufacturing performance throughout intervals of time where parameters were altered at Coil Winding machines.
- Developed redesign of the Spool Drive Assembly to prevent angular and vertical oscillations at the shaft in the driven area due to compliance and improve serviceability for preventive and predictive maintenance practices.
- Managed drawing formalization for Spool Drive Assembly and Coil Winder Fixture Support using GD&T.
- Reduced reject rate by **25%**, equivalent to annual savings for scrap material of **$61,135.30**.

Colegio Racing Engineering Formula SAE – UPRM *June 2024 – December 2024*
Member of the Body and Chassis Division

- In charge of developing (designing, manufacturing, and testing) a **tubular space frame** for an EV Formula SAE car.
- Managed a visual aid through **Excel** using the node's coordinates for each respective frame iteration, highlighting its changes by **suspension loading**, regulations requirements, or **system integration**.
- Created a parametrized model through **SolidWorks** using **Macro** tools to ease iteration development.
- Managed a stiffness calculator that identifies adequate frame torsional stiffness values based on consideration of front and rear track widths, spring rates, motion ratios, and ARB stiffness.

Colegio Racing Engineering Formula SAE – UPRM *June 2023 – May 2024*
Team Captain

- **Managed** a Formula SAE team of **over sixty members** in **designing, manufacturing, and testing** an open-wheel race car while implementing **GMP** standards.
- Integrated **SOPs** to better sort design, manufacturing, and competition logistics documentation for the team's future generations.
- Developed an action plan that **reduced production time** by over **50%.**
- **Increased team performance** on static and dynamic events **by 20% and 5%** respectively.

Lilly del Caribe, Inc. *January 2023 - July 2023*
Co-Op at Reliability Department

- Developed a Pareto analysis to identify **failures** in **rotary equipment** and formulate **SOPs** based on the acquired data.
- Established a training station to **simulate productive and preventive maintenance practices**, using two primary components in a horizontal orientation to resemble a **pump mechanism**.
- Created **a preventive maintenance plan** for a rotary drum at a water treatment plant based on self-developed **RCAs**, equipment maintenance, and installation manuals.

Colegio Racing Engineering Formula SAE – UPRM *February 2022 - December 2022*
Leader of the Vehicle Architect Division

- Developed Master CAD assembly of an open-wheel race car using **Siemens NX**.
- **Co-designer** for components within the **powertrain** and **vehicle dynamics** divisions and their respective **jigs**.
- Implemented CAD features to ensure FSAE Rule compliance.

Technical Skills

- **Software:** Advanced *(nTop, Siemens NX, SolidWorks, Excel, OnShape, Shapr 3D CAD modeling)*, Intermediate *(ANSYS, MATLAB, Creo 10, Fusion 360)*
- **Workshop Machinery:** Intermediate *(Milling Machine, Lathe, Band Saw, Grinder, Chop Saw)*, Basic *(TIG Welding)*
- **Relevant Courses:** Design of Machine Elements, *Heat Transfer, System Controls and Dynamics, Finite Element Analysis (FEA)*