José Luis González Fragoso

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EDUCATION

Monterrey, NL, México | **08/2021 - Present**

Instituto Tecnológico de Estudios Superiores de Monterrey | Bachelor of Mechatronics Engineering

- Cumulative **GPA** : 3.72/4.00

Concentration | Automotive Engineering

WORK EXPERIENCE

John Deere Monterrey, NL, México | **08/2023 - Present**

Electrical/Harness Design Intern

- Designed precise **3D models of harness** systems for agricultural machinery utilizing **Creo Parametric**; ensured all technical drawings met industry standards to improve accuracy in the manufacturing workflow.
- Developed detailed **wiring diagrams** for specialized agricultural machinery utilizing **Capital Harness XC**, ensuring compliance with industry standards and enabling the production team to streamline assembly processes and achieve a **20% reduction** in errors.
- Led initiatives involving **collaboration** across three key internal groups dedicated solely toward **innovating solutions** for recurrent structural flaws identified during testing phases without compromising deadline expectations or budget constraints.

Roborregos Monterrey, NL, México | **09/2022 - Present**

Project Manager & Mechanical/Electronic Engineer

- Spearheaded the design and integration of robotic systems for the **TMR competition**, enhancing functionality metrics by **30% through innovative methodologies** that streamlined project workflows and drove team efficiency in critical timeframes.
- Implemented and optimized a **custom PCB** for an innovative **robotic gripper**; enhanced communication between components resulted in a **25% increase in response speed** during critical competition scenarios.
- Fabricated and implemented a gripper mechanism using **SolidWorks**, enhancing manipulation **capabilities of the butler robot by 30%,** leading to better efficiency in robotic tasks performed during testing phases.

PROJECTS

Ternium & Metalsa Collaboration

- Analyzed chassis geometry using **ANSYS Workbench**, identifying three key design weaknesses; **increased overall modularity** of the structure to ensure compatibility with both internal combustion and electric vehicle applications.
- Applied advanced knowledge in static physics to optimize chassis geometry with **SOLIDWORKS,** achieving a **15% reduction in weight** while **enhancing modularity** for assembly efficiency and design flexibility.
- Evaluated the Ternium list of iron materials, identifying optimal options for chassis design based on **mechanical properties**; **selected material achieved a weight reduction of 15%** while maintaining structural integrity.

Piaggio Collaboration

- Analyzed performance data from combustion engine and electric motor carts using **SuperFlow dynamometer**, leading to the identification of key **retrofitting strategies** that aligned power output within an **acceptable 5%** variance for project feasibility.
- Led efforts in designing innovative geometric layouts for the three-wheeled vehicle's powertrain components which led integration **efficiency by 20 %** while maintaining essential modular capabilities necessary across **different frameworks.**
- Conducted performance testing on electric motor carts, **analyzing battery power output and efficiency** as part of retrofitting efforts; **reduced battery train wight by 10%** therefore reducing energy consumption.
- Applied **statistical analysis** to calculate and identify key metrics using **Excel** such as rolling resistance and aerodynamic coefficients, optimizing vehicle performance through data-driven decisions.

Parker Collaboration

- Achieved enhanced process reliability through the design of a fully integrated automatic assembly cell featuring safety measures and real-time monitoring capabilities using **Cognex technology**.
- Developed custom **feeders and fixtures** for automated presses, which reduced manual intervention by 60% and decreased production cycle time, enhancing overall operational efficiency and consistency.

ACHIEVEMENTS

- Attained **University Academic Talent Scholarship** in recognition of outstanding achievements in coursework and project contributions; distinguished as one of all the applying students selected for this honor during competitive evaluations.
- **1st place** in Mechatronics Competition (3rd semester) – Propose and create an electric motor.
- Diploma in **Renewable Energies**.
- Championed initiatives to **optimize workflows** among diverse team roles on **the robotics squad**; identified key areas for improvement and implemented strategies that improved project delivery timelines by an average of three weeks.
- Accomplished the first **internship at John Deere**, contributing to advanced projects in agricultural technology that streamlined development processes and enhanced product efficiency for future innovations.
- **Received acknowledgment from Parker** for a groundbreaking manufacturing cell design, addressing key operational challenges while contributing findings that targeted the three biggest causes of delays in the assembly process.

SKILLS

- Advanced mechanics & structural analysis.
- Electric powertrain knowledge & power electronics.
- Matlab & Simulink.
- Battery Systems & Powertrain Integration (Basic understanding).
- Project management & teamwork.
- Material science & metallurgy.
- Python and C++
- Fixture and tooling.
- CAD (Solidworks, Creo Parametric, CATIA) & GD&T.
- Automation, PLC's and robotic systems.
- FEM (Ansys).
- Design for Manufacturability (DFM) and Design for Assembly (DFA)