Diego Isaí Quintero Sánchez

diegoisaiquintero@hotmail.com | LinkedIn | Portfolio

SUMMARY

Mechatronics Engineer with hands-on experience in 3D CAD modeling, GD&T (ASME Y14.5) principles, and rapid prototyping technologies. Proficient in SolidWorks, Creo (Pro/ENGINEER), and Unigraphics (Siemens NX), with a strong foundation in kinematics to optimize mechanism designs and ensure compliance with industry standards.

Nationality: Mexican (TN Visa Candidate for US Market)

EDUCATION

Tecnológico de Monterrey, Campus Monterrey

B. S. in Mechatronics Engineering – *Graduated with highest honors* (GPA 4.0/4.0) **December 2024**

Massachusetts Institute of Technology, MIT.nano

2023 NanoLab: Introduction to Micro and Nanofabrication Techniques **April 2023**

WORK EXPERIENCE

Tecnológico de Monterrey, Research and Development Assistant **February 2023 - June 2023**

- Redesigned in SolidWorks the adaptation of an FDM printer extruder enabling micro-extrusion of bio-ink for artificial heart valve fabrication.
- Performed FEA in Ansys to validate beam theory calculations when predicting gear failure.
- Authored comprehensive compliance documentation for material selection favoring mechanical properties in medical usage, and low-cost variations using Ansys Granta EduPack.

3D Factory MX, Manufacturing Design Engineering Intern **August 2022 - December 2022**

- Designed in UG (NX) and manufactured a 3D printed TPU case for the Zebra TC75BH-KA11ES mobile computer's wide-angle lens.
- Designed in SolidWorks and manufactured using 3D printing and laser cutting, a cost-efficient variation of equipment for nano- and micro-fiber production (electrospinning for research purposes).
- Replicated in SolidWorks a deteriorated paint diffuser adapter for industrial robots based on physical measurements (using caliper and micrometer).
- Reconstructed 3D CAD models from laser scanner files with more than 50% corruption.

COLLEGE ENGINEERING PROJECTS

Automation of CNC HAAS Mini Mill for Robotic Assembly Line August 2024 - December 2024

- Published GD&T drawings for CNC body structure components for the safety door and internal vise automation opening, ensuring proper alignment with the ASME Y14.5.
- Designed in Creo (Pro/ENGINEER) and manufactured the internal steel fixture using manual CNC machinery and inspection equipment to ensure accuracy, emphasizing cost, strength, and manufacturability.
- Simulated machining tool paths in Autodesk Fusion 360 to validate the manufacturing process.
- Developed a digital twin of the CNC, reducing setup time by 30% and improving simulation accuracy in Siemens Plant Simulation.

Collaborative Robots Assembly Line for Fiber Extrusion Device February 2023 - June 2023

- Led the design, tooling, and assembly fixtures development for the semi-automated manufacturing of custom functional prototypes.
- Redesigned the pneumatic gripper for the UFactory xArm 6 collaborative robot using mechanism kinematics theory, supporting the development with multiple SolidWorks Motion studies.
- Directed technical workshops and outreach programs for new students on safely using collaborative robots and inspection equipment for technical assembly operations.
- Implemented ANSI/RIA 15.06 and local NOM safety standards to ensure compliance in robotic workstation design.

Dip Coating Research Machine Prototype February 2022 - June 2022

- Developed the conceptual design and CAD assembly of a dip coating machine in SolidWorks, and fabricated the prototype using 3D printing and laser cutting technologies.
- Conducted a comparative material analysis using Ansys Granta EduPack to identify the most effective adhesive for multilayer coating processes.
- Simulated actuator-driven motion using SolidWorks Motion to validate mechanical behavior and coating consistency.

SPECIALIZED CERTIFICATIONS

SolidWorks Associate in Simulation, Dassault Systèmes June 2025

Siemens NX Mastery: Advanced Design & Applications, Siemens Digital Industries Software February 2025

SolidWorks Professional in Mechanical Design, Dassault Systèmes April 2023

SolidWorks Associate in Additive Manufacturing, Dassault Systèmes February 2023

LANGUAGES

English (Fluent), Spanish (Native)