

Alejandro Holguin Prado

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PROFESSIONAL SUMMARY

Aerospace and Mechanical Engineering graduate from New Mexico State University and Universidad Autonoma de Chihuahua, with an additional background in Public Accounting and external audit experience at Crowe Global. Project experience includes e-mobility infrastructure, mechanical design, finite element analysis, thermal-structural analysis, orbital motion simulation, prototyping, and humanitarian engineering. Seeking entry-level roles in project engineering, manufacturing, quality, operations, e-mobility, automation, supply chain, or engineering management.

SKILLS

Engineering & Analysis

- Mechanical design
- CAD/CAE design
- Finite element analysis
- Structural & thermal analysis
- Orbital mechanics simulation
- Prototyping & technical testing

Software & Tools

- MATLAB
- Python
- Siemens NX
- SolidWorks
- ANSYS
- AutoCAD
- Advanced Microsoft Excel

Business & Operations

- External audit
- Internal controls
- Financial analysis
- Documentation & compliance
- Risk assessment
- Project coordination
- Process review

EDUCATION

New Mexico State University (NMSU) - Las Cruces, NM

B.S. in Aerospace Engineering; B.S. in Mechanical Engineering | GPA: 3.25/4.00

May 2026

Universidad Autonoma de Chihuahua (UACH) - Chihuahua, Mexico

B.S. in Aerospace Engineering

May 2026

Universidad Autonoma de Chihuahua (UACH) - Chihuahua, Mexico

Bachelor of Public Accounting | GPA: 9.07/10

Relevant coursework: Mechanical Design, Finite Element Analysis, Thermodynamics, Manufacturing Processes, Flight Dynamics & Controls, Aerodynamics, Propulsion Systems, Orbital Mechanics, External Auditing, and Financial Statement Analysis.

2023

PROFESSIONAL EXPERIENCE

Audit Staff - Crowe Mexico / Crowe Global - Chihuahua, Mexico

Jun 2023 - Apr 2024

- Performed external audit procedures for clients in financial services, manufacturing, and aerospace-related industries, supporting audit engagements through documentation, testing, analysis, and compliance-oriented procedures.
- Reviewed financial statements, inventory records, contracts, internal controls, supporting documentation, and audit evidence to identify risks, inconsistencies, and areas requiring further analysis.
- Applied audit procedures under International Standards on Auditing, Mexican Financial Reporting Standards, International Financial Reporting Standards, and audit quality management procedures.
- Used Excel and audit-related tools to organize financial information, perform analytical reviews, document findings, and support audit conclusions.

SELECTED ENGINEERING PROJECTS

QKOIL Overhead Wireless Charging System - NMSU / QKOIL

2025 - 2026

- Worked on an overhead wireless charging system for electric vehicles and autonomous mobile robots, using a robotic gantry concept with autonomous x-y-z positioning, vision-based alignment, and modular system architecture.
- Contributed to the mechanical system responsible for moving and positioning the charging unit, with emphasis on safety, reduced floor-space requirements, industrial usability, and scalable charging infrastructure.
- Presented at the NMSU Capstone Showcase; team received the Most Outstanding Project and Most Sustainable Project awards.

Rocket Engine FEA and Thermal Analysis - UACH

2024

- Modeled a small-scale rocket engine and performed finite element and thermal-structural analysis using Siemens NX and ANSYS to evaluate heat distribution, stress concentration, material behavior, and structural integrity.
- Supported propulsion-related analysis and design evaluation through MATLAB-based calculations, material review, and simulation-based engineering assessment.

Orbital Motion Simulation Using MATLAB and Python - NMSU

2024

- Developed simulation tools to model heliocentric and geocentric orbital motion, calculate orbital parameters, compare integrator performance, and visualize trajectory behavior under Newtonian mechanics.
- Validated simulated orbital results against NASA Horizons reference data and created plots for angular momentum, energy, areal velocity, and numerical error analysis.

Ornithopter Design Competition - 2nd Place - NMSU

2025

- Designed and built a flapping-wing ornithopter prototype using constrained materials; applied SolidWorks and AutoCAD for design iteration, structural refinement, and technical documentation.
- Earned 2nd place among 18 teams in a Mechanical Design course competition, strengthening skills in prototyping, teamwork, design constraints, and problem-solving.

Aggies Without Limits - Humanitarian Engineering Project - Nicaragua

2025

- Supported rural infrastructure projects including a health center, bridge repairs, and water system improvements through material quantity calculations, field support, and multidisciplinary collaboration.
- Applied engineering fundamentals in a real-world community setting while working with multicultural teams and local stakeholders.

HONORS, CERTIFICATIONS & LANGUAGES

NMSU Engineering Entrepreneurship Digital Badge, Apr 2026 | QKOIL Capstone Awards, 2026 | Ornithopter Design Competition: 2nd Place, 2025 |

Languages: Spanish native; English professional working proficiency