



Felix Morales

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MECHANICAL ENGINEER

Mechanical Design Engineer with experience in aerospace ground support equipment design & operations and mechanical integration in aerospace systems. Proficient in Nx, CREO, Solidworks, Femap FEA, Model Based Definition PMI Drawings.

EDUCATION

Bachelor of Science in Aerospace Engineering (BSAE), University of Central Florida, Orlando, FL

Graduated: August 2022, **Cumulative GPA: 3.27**

WORK EXPERIENCE

- Northrop Grumman, Special Access Program, Mechanical Design Engineer**, Melbourne, FL **Aug. 2022 – Present**
- Worked on aircraft ground support equipment products & maintenance operations.
 - Ran static and modal simulation study on support equipment mechanical assemblies.
 - Designed CAD ground support equipment mechanical concepts for maintenance tasks.
 - Produced 3D Model Based Definition (MBD) & 2D drawings for manufacturing of products.
 - Collaborated with government customers, manufacturing and immediate suppliers.
 - Presented ground support equipment products to customers and lead engineers.
 - Took GD&T, MBD and Femap career development courses.
 - Lead Product Readiness Review for production manufacturing approval of each product.
- Lockheed Martin, UCF College Work Experience Program, Mechanical Design Engineer**, Orlando, FL **Sept. 2020 – Aug. 2022**
- Worked on laser weapons system, airborne pods, airborne structures products.
 - Ran load static & modal simulation study on bolts, and pin supports.
 - Designed CAD airborne support structure and airframe shell.
 - Designed CAD electronics routing and thermal management system routing.
 - Presented CAD design assemblies in front of a panel of engineers.
 - Took GD&T and mechanical optics gimbal system career development courses.
 - Lead mass properties of advanced programs assemblies.
- Rocket Crafters INC (VAYA Space), Internship, Propulsion Engineer**, Cocoa, FL **May 2020 – Sept. 2020**
- Worked on suborbital launch vehicle airframe & hybrid rocket motor components.
 - Developed bolt safety factors calculator manual.
 - Presented FEA results in front of a panel of engineers.
 - Ran FEA simulations with buckling and static loads analysis.
 - Produced trade studies on composites materials.

PROJECTS

- AIAA UCF, Humanitarian Aircraft, Lead Aircraft Structural Design Engineer, Design Build & Fly 2022** **Aug. 2021 – April 2022**
- Lead AIAA UCF aircraft team structural design with structural integrity, low weight, and limited budget.
 - Modeled aircraft design fuselage design, design to be test on flight.
 - Produced FEA analysis of structural components.
 - Successfully achieved 1st iteration design with 13% weight reduction under \$100 budget.
- SEDS/AIAA UCF, Rocket Airframe, Lead Vehicle Design Engineer, Spaceport America Cup 2019-2021** **Aug. 2019 – July 2021**
- Lead the high structural integrity low budget airframe design & manufacturing.
 - Designed airframe composite tubes and manufacturing tools.
 - Ran FEA buckling on airframe tubes, couplers, and propulsion components.
 - Pioneer vacuum infusion manufacturing to produce in-house airframe under \$1200 budget.
 - Successfully performed structural axial compression test of composite tube with no buckling.

TECHNICAL SKILLS

Ground Support Equipment Design | Composite Materials Manufacturing | Femap Structural Analysis | NX/CREO Parametric/Solidworks CAD | Model Based Definition PMI 3D Drawings | Materials & Design Trade Studies | MATLAB/SIMULINK analysis | Windchill Design Organization Tools | Production Readiness Review Design Revision | Microsoft Excel Mass Properties Analysis | Level 1 NAR High Power Rocketry Certified | Intro to Engineering Simulations (Ansys Fluent CFD) Certified