JULIAN R. ALVAREZ

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Skills

Prototyping
Sketching
Rendering
3D Printing
Soldering
Crimping
CNC Machining
Hotwire Cutting
Composite Layups
Composite Molding
Vacuumforming
TIG Welding
Routing
Milling
Turning
Grinding
Laser Cutting

Software
Microsoft Office
Adobe Illustrator
Adobe Photoshop
Adobe Premier
Adobe AfterEffects
SolidWorks + PDM
Siemens NX
Siemens Teamcenter
Autodesk Inventor
AutoCAD
Catia
Rhino
ANSYS Fluent/Mech
HyperMesh
XFLR5
Femap w/ NASTRAN
Simplify3D
MATLAB
Arduino
MissionPlanner

Languages
German
C++

Leisure
Surfing
Skating
Soccer
Biking
Shaping

Experience

Astranis Lead Mechanical Engineer, San Francisco, CA — May 2021 – Ongoing

- Technical Leadership: Delivered actionable feedback to minimize risk & complexity across spacecraft configuration, primary structures, deployable mechanisms, enclosures, waveguides, and harnessing. Enabled key decision making to resolve technical issues encountered during development. Focused team efforts via stand ups and Jira Kanban board.
- Growth and Mentorship: Led hiring to grow mechanical team from 5 to 12 motivated engineers from unique backgrounds. Managed project assignments across multiple programs to enable personal growth and development. Advocated for raises and promotions based on milestone achievements and company level competencies.
- Program and Vendor Management: Managed procurement risks and ensured vendors delivered hardware that met requirements. Standardized mechanical BOMs in Arena PLM to scale production. Maintained program timelines in Smartsheets.

Astranis Mechanical Engineer, San Francisco, CA — February 2019 – May 2021

- Design: Geostationary satellite structures, mechanisms, and payload detail design. Clean-sheet composite and metallic component design, tolerancing, and GD&T drawings per ASME-Y-14.5-2018. Internal ME whiteboard, design reviews, and team mentorship. Defined and implemented SolidWorks CAD & EPDM standards.
- Analysis: Global FEM creation and development in Femap NASTRAN for ground handling, launch, and thermal distortion analysis. Iterative composite & metallic structural design via Excel margins of composite panel inserts, fastener sizing, metallic stress, composite strain, and thin skin buckling. Constraint design to meet precision pointing requirements.
- Assembly, Integration, Test: Authored assembly procedures and documentation. Executed on work instructions with cleanroom assembly of qualification and flight hardware. Experience as test lead & support roles for static structural, dynamic vibration and thermal testing with both unit and vehicle test articles. Disposition of non-conformances and rework

Planet Mechanical Engineer, San Francisco, CA — March 2017 – February 2019

- Design: Mass constrained and stiffness driven spacecraft structures. Mechanisms for solar, comms and optical deployables. Precision rotating machinery and Bearing selection. Cross-disciplinary work with EE, Optical, Thermal, and RF. Co-engineering with CM. GD&T Drawings per ASME-Y-14.5-2009.
- Analysis: STOP analysis via ANSYS & SigFit to simulate optical performance for given CONOPS. Structural Static, Modal, & Dynamic simulations in ANSYS & SolidWorks to meet GEVs + Planet requirements.
- Build: Design release via EPDM + PLM. Mechanism and structural qualification testing, QC, Build engineering support with Manufacturing team via MES. Technician instruction and Build guide generation.

Natilus Airframe Design Engineer, Richmond, CA — January 2017 – February 2017

- Subscale Lead: Maintain, upgrade, and retrofit test vehicle as deemed necessary by ongoing testing
- Pilot in Command: Subscale testing, range safety, testing protocols
- Design Engineering: Outer Mold Line surface modeling, control system design and analysis

Airware Aeromechanical Engineer, San Francisco, CA — April 2016 – December 2016

- Structures Design Lead: Defined loads then analyzed and designed structural components for a fixed-wing UAV made from SLS Nylon, EPP, carbon fiber and thermo-formed plastics. Worked directly with Hardware to fully integrate guidance and power electronics, IE Smart Battery, Autopilot etc
- Testing: Verified FEA predictions with static and dynamic load tests. Field testing of completed UAS.
- Management: Defined project timelines, BOM, Contract Manufacture relationships, Vendor relations, communicated project risks and intentions to executives.

Aerobo Aeronautical Engineer, Brooklyn, NY — April 2015 – February 2016

- Design: Selection of airframe architecture, packaging, and use cases. Definition of vehicle load cases and structural design of mass efficient components driven by composite FEA in Femap with a focus on system redundancy, reliability, and stability.
- Build/Test: 3D Printing & CNC Machining Prototypes. Subsystem testing, mechanical and electronic. Static load testing of airframes to Limit Load conditions. Flight testing and tuning of completed UAVs.

Education

The Cooper Union Mechanical Engineer, Manhattan, NY — September 2010 – May 2014

Bachelor of Engineering: Full Tuition Scholarship

Aerodynamics, Adv. Thermodynamics, Combustion, Feedback Control, Fluid Dynamics, Heat Transfer, Industrial Design, Introduction to CFD, Microcontrollers, Space Dynamics, Stress and Applied Elasticity, Vibrations