# Naiyar Hussein Shaman

Pace, FL 32571 - (448-219-0529) - naiyar@shamanengineering.com - LinkedIn - Portfolio

Engineering undergraduate with experience in mechanical design, systems engineering, and mission architecture, including an upcoming NASA Langley internship supporting Mars exploration studies. Proven ability to lead and execute complex engineering projects, from CAD design and manufacturing to system-level trade studies and requirements development. Skilled in developing hardware systems, performing engineering analysis, and integrating multidisciplinary subsystems for aerospace applications.

## EDUCATION

**Bachelor of Science in Engineering**, expected graduation 2027
Embry-Riddle Aeronautical University, Worldwide Campus
GPA: 3.94

***Relevant Coursework***

Calculus and Analytical Geometry 1, 2, & 3, Physics 1, 2, Solid Mechanics, Fluid Mechanics, Differential Equations and Matrix Methods, Dynamics, Statics, Thermodynamics, Technical Report Writing

## PROFESSIONAL EXPERIENCE

**NASA Langley Research Center** (Incoming Engineering Intern – Mars Architecture (Summer 2026))

- Selected for NASA OSTEM internship within the Space Mission Analysis Branch (SMAB)
- Will support mission-level analysis and trade studies for human Mars exploration architectures
- Contribute to systems engineering efforts including concept evaluation, performance analysis, and multidisciplinary integration

**MeltPro Inc., Pace, Fl (Mechanical Designer & Engineering Lead)** Apr 2025 - Present (40 hours weekly)

- Sole engineer responsible for end-to-end product development of industrial adhesive dispensing systems, including mechanical design, CAD modeling, and production implementation
- Designed and managed 500+ part and assembly models in SolidWorks, including detailed drawings, revisions, and configuration control
- Performed tolerance analysis, design-for-manufacturability (DFM), and quality validation to ensure reliable system performance and resolve tolerance stack-ups
- Developed and iterated mechanical systems to improve manufacturability, reduce assembly time, and enhance field reliability
- Collaborated directly with machining and production teams, supporting CNC operations and resolving real-world engineering issues

**Height Tower Systems, Pensacola, FL (Engineering Internship)** Oct 2024 - Jan 2025 (40 hours weekly)

- Assisted in the manufacturing and assembly of 12+ large-scale radio tower systems, contributing to a 15% reduction in production time
- Supported CNC machining of 50+ custom components, including setup, tooling changes, and basic G-code execution
- Executed 100+ fabrication tasks (drilling, tapping, deburring), maintaining production timelines and part quality standards

**The Bellwether Alliance, Pensacola, FL Technical Director** May 2021 - Feb 2024 (60 hours weekly)

- Managed the company's Customer Relationship Management (CRM) platform with over 3000 Contacts, optimizing functionality to enhance customer engagement and data management
- Spearheaded responsibility for all technical systems and automation within the organization, ensuring seamless operations (200+ Automations) of the client onboarding process and member portal
- Orchestrated automation initiatives for each department, slashing time spent on manual tasks by hundreds of hours and enabling teams to focus on high-value activities, yielding more results for the organization

## AEROSPACE RESEARCH & MISSION DEVELOPMENT EXPERIENCE

**NASA L'SPACE Mission Concept Academy** (**Project Manager)** September 2025 - December 2025

- Led a 15-member multidisciplinary team developing an end-to-end planetary mission architecture under NASA systems engineering standards
- Directed subsystem integration across propulsion, thermal, power, communications, payload, and CDH systems
- Produced 200+ pages of technical deliverables including requirements, interface definitions, $N^2$ diagrams, and risk assessments
- Conducted trade studies on propulsion performance, mass budgets, and thermal stability

**ERAU NASA RASC-AL Team Project Aurevo (President & Principal Investigator)** May 2025 - Present

- Led development of a lunar surface power architecture selected as a national finalist in NASA's RASC-AL competition
- Developed system architecture and conducted trade studies for a 100 kWe continuous power system using dual fission reactors and high-voltage DC microgrid distribution
- Designed and analyzed regolith-based thermal energy storage (RTES) for multi-day lunar night survivability, including efficiency and mass optimization
- Directed requirements development, risk analysis, and subsystem integration across power, thermal, PMAD, and surface systems

**NASA L'SPACE NPWEE Program (Principal Investigator)** January 2026 - Present

- Lead proposal design for development of a dust-tolerant mechanical interface/latching system for lunar surface operations under NASA mission constraints
- Define system requirements, performance metrics, and testing strategy including dust tolerance, thermal limits, and mechanical load cases
- Direct subsystem design, trade studies, and concept validation aligned with NASA exploration environments and operational needs
- Coordinate team efforts across mechanical design, testing, and systems engineering to deliver a validated concept

**Compass Research Program** (**Undergraduate Researcher**) May 2024 - Present

- Conduct research on reusable launch vehicles, analyzing propulsion efficiency, thermal constraints, and environmental impact
- Perform structured literature analysis including TRL assessment and evaluation of methodological limitations in aerospace studies
- First author of peer-reviewed paper, *"Navigating the Future of Space Exploration: An Overview of Reusable Launch Vehicles,"* accepted for publication at NTCA 2026

**NASA Suits Team (Project Manager)** September 2025 - Present

- Led development of a mixed-reality EVA HUD concept using Microsoft HoloLens 2 for astronaut navigation and telemetry visualization.
- Directed AR interface design, sensor mapping, and real-time UI overlays aligned with NASA SUITS HCI standards.
- Managed proposal strategy, subsystem documentation, and Unity-based workflow leading to successful submission for finalist selection.
- Coordinated contributors across AR design, HCI, UI/UX, and systems to produce an integrated proposal package.

## TECHNICAL SKILLS

SolidWorks, Autodesk Inventor, Siemens NX, MATLAB, Python, ANSYS Fluent (CFD & Thermal), Unity (HoloLens),

Engineering Drawings, GD&T, CNC Workflow, Thermal Analysis, CFD Modeling, Combustion Modeling,

Systems Engineering, Trade Studies, Requirements Development, ConOps, Subsystem Integration