Tyler Jones

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Summary

Driven engineer with strong analytical and troubleshooting skills with experience in liquid rocket engine design, instrumentation, and testing. Skilled in complex system development and testing, with 10+ years of product design and manufacturing experience. Committed to advancing the state-of-the-art for the benefit of humanity and the betterment of our world.

Education

Bachelor of Science, Aerospace Engineering — December 2024
The University of Texas at Arlington – Arlington, TX

Research & Projects

Triton-1 Liquid Rocket Engine - Chief Engineer

Development of a bi-propellant liquid rocket engine

- Led the design, development, and construction of a bipropellant liquid rocket engine and test stand, including the complete design of a unique triplet injector and combustion chamber suitable for manufacturing in the university machine shop
- Design of custom cavitating venturi flow control devices
- Responsible for review and approval of GD&T engineering drawings of complex parts for manufacture (e.g., injector assembly, chamber, cavitating venturi)
- Led the development of a scratch-built data acquisition and control system including GUI software to enable real-time system monitoring, control, and remote data logging
- Developed test procedures to ensure safe, repeatable system testing. Assessed and programmed system hold and abort conditions
- Hands-on experience with electronic systems, PCB design and manufacture, and debugging in a testing environment (e.g., data logging and network concepts, system debugging, board troubleshooting)

Triton-1 Liquid Rocket Engine - Feed Systems Lead

- Responsible for the design, construction, and testing of a blowdown propellant delivery system for a liquid rocket engine test stand
- Creation of P&ID schematics and test stand instrumentation design, integration, and validation
- Design, sizing, and testing of cavitating venturis to control propellant mass flow rates into injector
- Performed tank pressurization proof tests up to 1000 psi, pneumatic valve testing, and flow rate testing for pressurant and main propellant lines
- Hands-on experience working with feed system components and concepts including Swagelok type components, fittings, valves, pressure regulators, relief valves, high pressure systems

Aerospace Vehicle Design Capstone - Geometry Lead Engineer, Aerodynamics

- Derived unique scaling laws for novel aerospace vehicle configurations
- Vehicle configuration management and loft design
- Synthesize needs and inputs from multiple disciplines
- Developed the mathematical surface and outer mold line definition to enable analysis and detail design
- Model and mesh optimization to speed simulation runs
- Publication of Conference Paper (First Author) pending

NASA Student Launch Competition 2022

- Worked on the design, construction, and testing of a payload to autonomously locate the position of the launch vehicle upon landing without the use of GPS. The payload then transmitted coordinates back to base station.
- Led the implementation of a simultaneous localization and mapping system.
- Assisted in the design, layup, and manufacture of the launch vehicle.
- Designed a new re-usable fin can system for the rocket

NASA Student Launch Competition 2021

- Worked on the design of a rover payload capable of deploying after launch and landing, navigating to a recovery zone, and obtaining a 10 mL sample of simulated lunar ice.
- Participated in the layup and manufacture of the launch vehicle.

Certificates

Unmanned Vehicle Systems

- Control system design and tuning to complete a variety of tasks
- Navigation by GPS, RTK, odometry, LiDAR, visual imaging
- Sensor fusion and path planning algorithms
- Power management and signal noise abatement
- Programming of microcontrollers to drive unmanned platforms

High Power Rocketry - Level 1

- Complete design, layup, and build of an all carbon fiber rocket
- Demonstrated to fly and safely descend unharmed by use of a deployed recovery system.

Other Work Experience

Jones Furniture and Design; Owner ▪ DFW, Texas Metroplex *01/2011 – 08/2019*

- Executed the design and construction of furniture, products, and architectural interiors
- Implemented innovative design techniques to meet client specifications
- Managed all aspects of projects from initial concept to final installation

Turner Woodworks Inc ▪ Memphis, Tennessee *07/2008 – 01/2011*

- Produced high-end custom cabinets, overseeing all in-shop finishing and cabinet installation.
- Demonstrated expertise in crafting and finishing cabinets to meet client specifications.

Skills

Analytic Geometry | Multidisciplinary Design & Collaboration | Data Acquisition & Analysis | Prototype & product testing | Respected Leader | Test procedure development and execution | Instrumentation and DAQ design

Software + Coding Proficiency: MATLAB | Solidworks | Ansys | LabVIEW | C/C++ | Python | HTML | CSS | JavaScript