

# Tyler Jones

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## SUMMARY

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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.

## EDUCATION

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### **Aerospace Engineering | Bachelor of Science** **The University of Texas at Arlington**

📅 December 2024 completion

## RESEARCH AND PROJECTS

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### **Liquid Rocket Engine team - Chief Engineer**

- 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, 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)

**Skills learned:** Multi-disciplinary team leadership, test procedure development and execution, instrumentation and data acquisition system design

### **Liquid Rocket Engine team - 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 and 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

### **Geometry Lead Engineer, Aerodynamics** **Aerospace Vehicle Design Capstone**

This project focused on the development of a novel aerospace flight vehicle system via the development and application of a multidisciplinary design synthesis methodology to an open-ended design problem. Required devising innovative design solutions which cannot be directly extracted from existing applications.

- 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

## RESEARCH AND PROJECTS

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- Model and mesh optimization to speed simulation runs
- Publication of Conference Paper (First Author) pending

### **Payload Team Member** **NASA Student Launch 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, layout, and manufacture of the launch vehicle.
- Designed a new re-usable fin can system for the rocket.

### **Payload Team Member** **NASA Student Launch 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 layout and manufacture of the launch vehicle.

## CERTIFICATES

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📅 05/2024

### **Unmanned Vehicle Systems**

- Control system design and tuning to complete a variety of tasks in multiple environments
- Navigation by GPS, RTK, odometry, LiDAR, visual imaging
- Experienced in sensor fusion and path planning algorithms to support planning and obstacle avoidance
- Power management and signal noise abatement
- Programming of Micro Controllers to drive unmanned mobile platforms

### **Level 1 High Power Rocket** **National Association of Rocketry**

- Scratch-built all carbon fiber rocket.

## OTHER EXPERIENCE

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### **Jones Furniture and Design; Owner**

📅 01/2011 – 08/2019 📍 DFW, TEXAS METROPLEX

- 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, ensuring customer satisfaction and project success

### **Turner Woodworks Inc**

📅 07/2008 – 01/2011 📍 MEMPHIS, TENNESSEE

- Produced high-end custom cabinets, overseeing all in-shop finishing and cabinet installation.
- Demonstrated expertise in crafting and finishing cabinets to meet client specifications.
- Installed cabinets with precision and attention to detail to ensure superior quality.

## SKILLS

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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