

# Tyler Jordan Brooks

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## Leadership Experience:

**Clarkson University Rocketry Team**, Vice President, Co-Founder

Aug 2022 – Present

- Designed, analyzed, and manufactured custom composite flight hardware, and led team to first competition in school's history, while following ASME testing standards
- Analyzed both thermal and mechanical loading on both internal and external flight hardware
- Co-designed internal systems using Solidworks, and combined for a full vehicle assembly looking to mimic a digital twin

**Society of Hispanic Professional Engineers**, Co-Founder, Clarkson University

Aug 2018 – Present

## Education:

Clarkson University, Potsdam, NY

Bachelor's degree in aerospace and mechanical engineering, Minor in Mathematics, May 2024; Dean's

List: All Semesters; GPA: 3.4/4.0

Awards: Diversity and Inclusion Award Recipient;

## Industry:

**Blue Origin**, New Shepard Avionics Hardware Mechanical Engineer, Kent, WA, Internship

May 2023 – Aug 2023

- Prototyped and designed test fixtures, using Creo, for system vibratory, shock, and material characterization testing
- Led as the Responsible Engineer for damping system characterization for internal avionics and payload structure in the environmental test and mechanical systems labs to oversee and troubleshoot testing
- Reviewed transmissibility data and created decibel comparison charts to characterize two competing isolation systems, and tracked all updates and changes on Confluence

**KULR Technology**, Design Engineer, Worked Remotely, Co – Op

Oct 2022 – May 2023

- Co-led mechanical design of battery wall charging system in Solidworks for lithium-ion based battery packs, focusing on thermal dissipation and mechanical encasement
- Designed and integrated Data Acquisition System that analyses live data from bomb calorimeter
- Researched and developed a battery seal system that met NASA's Crewed Space Vehicle Battery Safety Standards

**GE Aerospace**, Aeromechanics Engineer, Cincinnati, OH, Internship

May 2022 – Aug 2022

- Led development for airfoil mode analysis tool for automated mode identification
- Assisted on engine fleet case study for CFM56-5B/7B HPC configuration, consisting of a safety check for airfoil excitations
- Aided in a Low-Pressure Region study for developmental program, that ensures understanding of x-wind and acoustics testing for future **NASA Glenn** rig tests

**Tesla**, Global Battery Manufacturing Engineer: Concept and Build, Fremont, CA, Internship

Jan 2022 – May 2022

- Fully designed and implemented pneumatic connector system, in Solidworks, for leak test that increased yield by 10% and decreased failure rates by over 60% on initial trial
- Owned project to install a new manifold install tool on a production line, which was tracked using JIRA, that showed a 26% decrease in cycle time from Factory Acceptance Testing
- Analyzed thermal dissipation and resistivity from pack internal cooling system to gauge pack readiness

**GE Aviation**, Engine Dynamics & Aeromechanics Engineer, Lynn, MA, Co-Op

Aug 2019 – May 2020

- Coded Python script that runs real-time to assess GE-T408 engine accelerometer inputs for production, which is projected to save GE \$3 Million per engine program cycle
- Enhanced rotor dynamics model of F404-GE-103 military turbofan engine, for application in the Boeing-Saab T-X Air Force trainer program, by generating Multi-Ended Spring model for the main structural engine frames, using Hyper Mesh and MSC NASTRAN
- Executed a project to debug and release an airfoil notch fatigue evaluation tool that utilizes MATLAB, VBA, and ANSYS scripts to reduce computational time by 30%

## Skills and Abilities:

**CAD:** Solid Works (PDM), Creo Parametric (Windchill), Siemens NX (Team Center), CATIA, Altair Hyper Works, Autodesk Inventor

**Analysis:** ANSYS – Workbench: Mechanical (Static, Dynamic, Thermal, Vibe) and Fluent / APDL / STK Certified Level 1&2; MSC NASTRAN

**Coding:** MATLAB, Python, MySQL