Jack Huston

jackthuston1@gmail.com | 303-817-5144 | Denver, CO → Seattle, WA | jack-huston.com | LinkedIn

TECHNICAL SKILLS

- **GN&C:** State estimation (KF/EKF), linear control, simulation, Monte Carlo
- **Tools:** MATLAB/Simulink, C/C++, Python, Git; Julia (Coursework)

PROJECTS

EKF Orbit Determination & LQR Control (jack-huston.com/Orbit-Determination/**)** **2025**

- Built a nonlinear orbit simulation in MATLAB with ground measurements & time-varying visibility
- Implemented an EKF-based state estimator and LQR controller for disturbance rejection
- Verified estimator behavior with Monte Carlo runs and NEES/NIS consistency checks
- Version-controlled in Git; built unit tests and V&V checks for Jacobians/dynamics, measurement models, and EKF updates

Simulink GN&C Mini-Stack (jack-huston.com/Simulink-Mini-Stack/**)** **2025**

- Built a 3-DOF reaction wheel attitude control + IMU/star tracker simulation in Simulink
- Quaternion based MEKF and closed-loop PD control for disturbance rejection / slew maneuvers

Senior Project – ASTROBi Foundation (jack-huston.com/Ice-Plume-Detector/**)** **2022 – 2023**

- Received Technical Leadership Award (2 of 218) for design ownership and technical execution
- Led design/build/test of a charged ice particle sensing instrument, integrating mechanical, electrical, and embedded software subsystems
- Wrote multi-threaded C++ DAQ software on Linux capable of achieving 2M samples/sec over SPI; validated scripts and data throughput with unit testing and verification checks

WORK EXPERIENCE

Lockheed Martin Space **May 2022 – Present**

Propulsion Engineer II *Littleton, CO*

- Constructed an automated MATLAB tool to process and screen >1M hot-fire pulses, reducing analysis time from weeks to ~10 minutes
  - Validated ACS thruster requirements affecting GN&C (I-bit, valve response, thrust, repeatability) as part of requirements verification and data analysis
- Led vehicle-wide contamination investigation using a custom physics-based FOD particle transport model in MATLAB; collected test evidence and drove corrective action
- Defined qualification test plans and acceptance test criteria tied to performance metrics
- Built a parametric contaminant-generation model to support rapid trade studies and decisions

University of Colorado, Boulder **Aug. 2021 – May 2023**

Teaching Fellow *Boulder, CO*

- Led lab and office hours for Dynamics & Controls, Thermo/Aero, and Electronics; supported 100+ student per semester with course instruction and debugging/grading MATLAB code

EDUCATION

University of Colorado, Boulder

M.S., Aerospace Engineering (Autonomous Control) *(Remote/Asynchronous)* **Expected 2027**

B.S., Aerospace Engineering, *Minor, Computer Sciences* **May 2023**

Summa Cum Laude | GPA: 3.97/4.00 | Rank 5 of 218