

OBJECTIVE

An inquisitive aerospace engineer, highly motivated scientist, and committed innovator with expertise in vehicle dynamics, control systems, and GN&C.

PROJECTS

Quadrotor Attitude and Trajectory Control

- Created a nonlinear dynamical model of a quadrotor in MATLAB/Simulink. Modeled effects such as motor dynamics, blade flapping, and ground/ceiling effects. Created open-loop attitude and trajectory controllers using PD control.

Orbital Tracking and Estimation

- Created a two-body orbit propagator for orbital debris modeling the gravitational effects of J2 and J3 and atmospheric drag in MATLAB/Simulink. Implemented the Gaussian Unscented Kalman Filter to perform Single Hypothesis Tracking of orbital debris given right ascension and declination measurements.

Dynamical Modeling of Aircraft

- Created a nonlinear dynamical model of a research civilian aircraft. Experimented and documented various complex effects of fuel slosh and engine angular momentum on trim states and overall lateral and longitudinal performance. Designed coordinated turn and heading autopilots using full-state feedback.

Undergraduate Capstone Project

- GN&C lead for the design of a 6U CubeSat to survey circumgalactic medium. Performed trade studies on appropriate sensors and hardware based on specifications and performed v&v on CubeSat attitude control in MATLAB/Simulink.

AWARDS

- AA Departmental Honors - January 2021
- Capstone Overall Technical Award: 6U CubeSat - June 2021
- Mart Bert Endowed Scholarship Recipient - March 2020
- Engineering Peer Educator Award - January 2021
- Dean's List - September 2018 – June 2021
- Washington Aerospace Scholars – Phase I Completion

SKILLS

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|-------------------|-------------|
| ➤ MATLAB/Simulink | ➤ C/C++ |
| ➤ Fortran | ➤ MS Office |
| ➤ CAD: CATIA/SW | ➤ LATEX |
| ➤ Python | |

EDUCATION

University of Texas at Austin, August 2021 – May 2023

Master of Science, Aerospace Engineering

Focus in Controls, Autonomy, and Robotics (CAR).

Academic Scholarship, August 2021- May 2023

University of Washington, September 2017 – June 2021

Bachelor of Science, Aeronautics and Astronautics (AA)

Minor in Applied Mathematics (AMATH).

American Institute for Aeronautics and Astronautics (AIAA), President

Massachusetts Institute of Technology, January 2024 – April 2024

Certification, Applied Data Science Program: Leveraging AI for Effective Decision-Making

WORK EXPERIENCE

Aerospace Systems Engineering Intern @ Tethers Unlimited, Inc
Bothell, WA

June 2022 – August 2022

- Created Monte Carlo automation tools in MATLAB/Simulink that improved simulation run time by 60 % and supported other V&V activities.
- Created documentation on the functionality of software add-ons with sample results.
- Derived key subsystems principles in the Simulink model from first principles.

Aerospace Engineering Intern @ AeroTEC
Seattle, WA

March 2021 – August 2021

- Documented design verification of modified Boeing 747 referencing FAA regulations, procedure anomalies, and stress/strains from structural test flight data.
- Performed advanced weight/balance trade studies for structural tests supervised at the Moses Lake facility.
- Integrated aerodynamic data into hardware-in-the-loop 6 DOF simulations of a modified Boeing 747 and presented simulation stability analysis in design reviews.

Aeronautical Engineering Intern @ SDI Engineering INC.
Kirkland, WA

November 2019 – March 2020

- Simulated landing gear performance on the Airbus 330 in MATLAB/Simulink.
- Refined landing gear aeroelastic math model used in simulation.
- Wrote engineering reports for software subsystems including oleo and tire performance.

