Dennis R. Hom

dryanhom@gmail.com ● (832)-458-5206

Education

University of Texas at Austin Bachelor of Science in Aerospace Engineering
Overall GPA: 3.60

Relevant Coursework: Computational Fluid Dynamics, Computational Physics, Systems Engineering, Attitude Dynamics, Propulsion, Compressible Flow, Electromechanical Systems, Flight Dynamics, Feedback Control Systems, Orbital Mechanics, Fluid Dynamics, Solid Mechanics, Statics, Thermodynamics

Projects

NASA USDC-9 (Space I) *August 2024 – April 2025*

- Analyzed capillary flow through porous media to develop passive fluid delivery methods for space applications
- Tested conceptual wicking design through various substrates, documenting fluid movement and absorption rates
- Created 3D CAD models with ISS-heritage sensors for testing microgravity fluids through multiple substrate configuration

Propeller-Thrust Optimization *January 2024 – May 2024*

- Engineered experiments with strain gages and photodiode sensors to analyze the efficiency of 3 different propeller twists
- Collected and processed raw voltage data to calculate the varying thrust and RPM using a calculated calibration constant
- Conducted 12 trials using LabVIEW to compare performance across 3 propellers with pitch configurations from 5° to 6.5°

Miniature UAV Design *January 2023 – May 2023*

- Conceptualized a detailed CAD model of the fictional aircraft "Rama" based on 3 key descriptions from the novel
- Engineered attachments for the Solidworks CAD model to ensure 100% compatibility with subsonic wind tunnel testing
- Conducted 9+ wind tunnel tests, analyzing both qualitative flow visualizations and quantitative data across 3 environments

Experience

NBG eSports ● *Assistant Coach, Analyst* *August 2024 – May 2025*

- Analyzed 200+ hours of gameplay, correlating engagement metrics with decision patterns to identify improvement areas
- Identified critical patterns across 8+ rival teams, implementing targeted counters that neutralized 50% of rival plays
- Transformed complex data into actionable insights, improving team decision-making by 40% through causal analysis

Leadership

Longhorn Gaming *August 2021 – May 2025*

- Coordinated tournament logistics for 50+ participants, managing scheduling, rules, and technical infrastructure
- Developed practice schedules around student commitments to maximize team cohesion and competitive performance
- Led varsity team to top 3 finishes in 4 regional collegiate competitions, improving national team ranking to top 10

Engineering Chamber Orchestra *August 2021 – May 2024*

- Organized section bonding events to foster an inclusive environment and strengthen connections among members
- Applied Drum Major experience to maintain structured rehearsals while fostering creative musical expression
- Utilized 11 years of classical training to guide musicians through complex passages in challenging repertoire

Skills

Software: Python, C++, MATLAB, Simulink, Github, Solidworks, MS Office Suite, LabVIEW, Linux
Hardware: Data Acquisition Systems, Microcontrollers, 3D Printers, Wind Tunnel Testing
Communication: Design proposals, Technical Documentation, Presentation Development, Public Speaking
Languages: English (fluent)