Ori Algave

EDUCATION

University of Florida, Herbert Wertheim College of Engineering　　　　　　　　　**Aug 2024 - May 2028**
- **Bachelor of Science (B.S.), Aerospace Engineering**　　　　　　　　　　　　　　Gainesville, Florida
- **GPA:** 3.66/4.00

Relevant Coursework: Thermodynamics, Statics, Numerical Methods, Differential Equations, Physics I/II, Mechanics of Materials, MATLAB
Skills: SolidWorks, ANSYS Fluent, MATLAB, XFLR5, RASAero, CFD, Data Analysis, Additive Manufacturing, Composite Fabrication, 3D Printing, AstroImageJ, PixInsight

ENGINEERING EXPERIENCE

Teaching Assistant - The Art & Science of Astrophotography　　　　　　　　　**Jan 2026 - Present**
Department of Astronomy at the University of Florida　　　　　　　　　　　　　Gainesville, Florida
- Managed operations for the only undergraduate astrophotography course in the U.S., overseeing safety and usage of 6 research-grade observatory telescopes amounting to over $50,000 in equipment.
- Troubleshot and calibrated complex imaging systems and tracking mounts to ensure 99% uptime for student data acquisition.
- Trained students in data reduction workflows and post-processing techniques, bridging the gap between raw and scientific imagery.

Aerosciences Engineer　　　　　　　　　　　　　　　　　　　　　　　　　**Aug 2025 - Present**
Swamp Launch Rocket Team　　　　　　　　　　　　　　　　　　　　　　　Gainesville, Florida
- Validated aerodynamic compliance with IREC 10,000 ft apogee requirements by generating Cd vs. Mach curves to optimize nosecone, fin, and boat-tail geometry.
- Developed high-fidelity CFD workflows on ANSYS (mesh independence, boundary layer resolution/ y+) and executed simulations on UF's HiPerGator supercomputer to accurately predict drag within 15% to RASAero predictions
- Implemented an analysis method for a rocket from 0-1 Mach to predict drag and improve simulation validity through higher-quality meshing.
- Designed the 2026 competition vehicle in CAD (8 hours), integrating a load cell assembly for wind tunnel aerodynamic verification.
- Presented technical trade studies and stability margin analysis (CP vs. CG) at formal engineering design reviews.

Aerodynamics/ Manufacturing Engineer　　　　　　　　　　　　　　　　　**Aug 2025 - Present**
Gators Design Build Fly　　　　　　　　　　　　　　　　　　　　　　　　Gainesville, Florida
- Simulated airflow over lifted surfaces utilizing ANSYS CFD and XFLR5 to predict stall characteristics and optimize control surface sizing.
- Reduced predicted airframe drag by 18% through iterative design changes derived from lift/drag polar analysis.
- Manufactured flight hardware applying carbon fiber composites and additive manufacturing which reduced the total aircraft weight by 34%.

PROJECTS

Aircraft Engine Classification via Custom Machine Learning - MATLAB　　　　　**Aug 2025 - Dec 2025**
- Built a machine learning algorithm in MATLAB to classify aircraft engines (Jet, Piston, Propjet) using raw performance values from 800+ aircraft.
- Implemented custom algorithms for data cleaning, feature weighting, and normalization, utilizing K-means clustering with majority-vote logic.
- Visualized 3 separate clusters in a multi-dimensional plot to evaluate model accuracy and minimize classification errors.

Modular Desktop Wind Tunnel - SolidWorks　　　　　　　　　　　　　　　**May 2025 - July 2025**
- Designed a modular wind tunnel in SolidWorks (80+ hours, 4 versions), refining nozzle and diffuser geometry based on aerodynamic literature to minimize flow separation.
- Fabricated prototypes to validate 3D printing assembly tolerances and engineered a dual-mode test section to support both flow visualization and lift measurement experiments manipulating smoke and a lift scale.

Exoplanet Transit Analysis - TOI - 3819b　　　　　　　　　　　　　　　　**Aug 2023 - June 2024**
- Derived planetary radius and orbital parameters by analyzing transit light-curve data in AstroImageJ, calibrating amateur telescope observations for scientific accuracy.
- Validated findings against NASA-published values, applying statistical methods (chi-squared, percent error) to assess measurement uncertainty and instrumentation limitations.

Astrophotography & Imaging Systems　　　　　　　　　　　　　　　　　　**July 2022 - Present**
- Engineer precision imaging workflows operating cooled monochrome cameras, an equatorial mount, and narrowband filters, requiring sub-arcsecond tracking accuracy over extended periods of time.
- Execute complex multi-night exposure stacking and calibration routines (darks, flats, bias frames) to maximize signal-to-noise ratio.
- Process high-resolution astronomical images through PixInsight, applying deconvolution and noise reduction algorithms to reveal faint deep sky structures.

AFFILIATIONS:

Lubavitch Chabad Student Group at the University of Florida – Programming Director (Led 8 committees/1200 + students)
American Institute of Aeronautics and Astronautics (AIAA) - Student Member