

CHASE TURMAIL

AEROSPACE & MECHANICAL ENGINEERING | PROPULSION | MECHANICAL DESIGN | AERODYNAMICS

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EDUCATION

University of Florida - Herbert Wertheim College of Engineering

Expected December 2027

Dual B.S. in Aerospace Engineering and Mechanical Engineering | GPA: 3.92/4.00 | Dean's List Every Semester

Relevant coursework: Compressible Flow, Controls, Vibrations, Astrodynamics, Structures, Aerodynamics, Heat Transfer, Mechanical Design

ENGINEERING EXPERIENCE

Imaging Engineering, LLC | Mechanical Engineering Intern

June 2026 - Present

Gainesville, FL

- Designed, assembled, and integrated Prototype 1 of a medical-imaging collimator subsystem, advancing the effort from iterative CAD into a physical electromechanical assembly.
- Integrated linear actuators, lead screws, linear guides, optical/electronic interfaces, custom mounting hardware, aluminum plates, and FDM structural components; resolved fit, alignment, motion, and packaging conflicts through hands-on assembly and CAD revision.
- Developed and revised brackets, covers, supports, fastener interfaces, and practical clearances in SolidWorks and Fusion 360 with emphasis on manufacturability, serviceability, tolerance control, and repeatable assembly.
- Migrated and standardized designs between Fusion 360 and SolidWorks; produced drawings, BOMs, and organized CAD packages while reviewing revisions and assembly interfaces with engineering leadership; Prototype 1 development remains ongoing.

SELECTED ENGINEERING PROJECTS

1,000 N-Class Axial-Flow Turbojet Design

2026 - Present

Independent project | Ongoing | SolidWorks, MATLAB

- Sized a preliminary turbojet for Mach 0.75 cruise at 10 km, establishing a 1.91 kg/s design mass flow, 3.0 compressor pressure ratio, and 28,500 rpm shaft speed.
- Developed an 800 mm-long, 250 mm-OD architecture with a four-stage axial compressor, annular diffuser/combustor, eight swirler cartridges, two turbine stages, and a converging-diverging nozzle.
- Translated velocity triangles, stage loading, thermal-cycle estimates, and flowpath requirements into detailed compressor, turbine, combustor, shaft, bearing-support, casing, and mounting-hardware geometry.
- Integrated tolerances, DFM/DFA, modular assembly, rotor/stator clearances, and a 300 mm consumer 3D-printer manufacturing envelope; continuing detailed CAD and analysis development.

Stable Electric UAV Aerodynamic Design & Analysis

2026 - Present

Independent project | Ongoing | XFLR5, XFOIL, MATLAB

- Designed a 5 kg electric UAV from stall-speed, cruise, span, and stability requirements; sized a 0.500 m² SD7037 wing at AR 8 for 18 m/s cruise.
- Compared four airfoils from Re = 150k-400k and conducted aspect-ratio, taper, and washout trades; selected a constraint-compliant 2.00 m wing using quantified efficiency and low-Reynolds-number tradeoffs.
- Used VLM2 and MATLAB to redesign CG and tail trim, achieving CL = 0.494, CD = 0.02043, L/D = 24.18, and a 10.4% MAC static margin in a preliminary lifting-surface model; continuing CAD and validation work.

ADDITIONAL PROJECT EXPERIENCE

Experimental Mechanics & Data Acquisition [LabVIEW](#)

Built a two-channel LabVIEW VI and quarter-bridge strain-gage system to measure hoop and axial strain on a pressurized vessel; estimated pressure and propagated measurement uncertainty.

Functional Air Engine [Mill](#), [Lathe](#), [Welding](#)

Machined and assembled a functioning compressed-air engine using dimensional tolerancing, fit checks, welding, and mechanical troubleshooting.

Two-Stage 40 hp Gearbox Design [MATLAB](#), [Shigley/AGMA](#)

Completed gear-force, bending/contact-stress, fatigue-life, shaft, bearing, housing, sealing, and thermal analyses while tracking 28 design requirements.

TECHNICAL SKILLS & CERTIFICATIONS

CAD & Mechanical Design: SolidWorks (CSWA), Fusion 360, assemblies, DFM/DFA, drawings, GD&T, tolerance design, BOMs

Analysis & Programming: MATLAB, Python, LabVIEW, XFLR5, XFOIL, compressible flow, propulsion/cycle sizing, aerodynamics, numerical methods

Manufacturing & Test: FDM 3D printing, manual mill/lathe, welding, fabrication, strain gages, data acquisition, dimensional inspection

Certifications: SolidWorks CSWA - Mechanical Design | BACE - Technical Lab Documentation