

# MICHAEL ZNACHONOK

## Engineering Student

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Engineering student with hands-on experience in mechanical design, FDM prototyping, airframe fabrication, flight testing, CFD, and MAVLink UAV software development.

## EDUCATION

**Dartmouth College | Bachelor of Arts in Engineering Sciences** | Expected June 2030

*Hanover, NH | Pursuing coursework toward Dartmouth's B.E. program*

**Certification:** Autodesk Fusion Certified User, issued April 2026; valid through April 2031 (verify on Credly)

**Athletics:** Dartmouth Men's Heavyweight Crew Team

## EXPERIENCE

**Talos Unmanned Systems | Founder & Independent UAV Developer** | February 2026 - Present

*Independent UAV R&D | Charlottesville, VA*

- Designing a quadrotor R&D platform intended to integrate a LiDAR array, RGB-D camera, Raspberry Pi 5 (8 GB), and AI accelerator for autonomous environmental-response experiments.
- Built and tested a Python MAVLink mission-planning UI that creates and uploads planned autonomous flight paths to a quadcopter flight controller.
- Built C++ telemetry and logging tooling that receives GPS, orientation, and velocity data through a telemetry-radio link.

**Monster Fight Club, LLC | Computer-Aided Design Intern** | June 2026 - August 2026

*Earlsville, VA | Full-time, on-site*

- Independently created or substantially reworked 12 Fusion 360 replicas of ground- and space-based telescopes and related components for Smithsonian Air and Space Museum hands-on displays.
- Engineered multi-part FDM assemblies for public release, defining part splits, tolerances, orientation, and assembly methods so museum staff can replace damaged parts and students or teachers can print and assemble them with minimal support removal or slicer changes.
- Translated reference images, dimensions, and available 3D scans into manufacturable CAD; personally sliced in Bambu Studio, printed, assembled, fit-tested, and corrected print or assembly issues before release.

## SELECTED ENGINEERING PROJECTS

**Fixed-Wing UAV Capstone** | Six-month high-school capstone | Led a three-person team

- Led the design, fabrication, and flight testing of a 7 ft-wingspan fixed-wing UAV with an approximately 5 kg airframe and intended 5 kg camera and electronics payload.
- Designed the wings, electronics bay, and four-piece print-in-place V-tail in CAD; incorporated flexible TPU hinges and 3D-printed wingtips.
- Used Autodesk CFD to evaluate lift, drag, flight-time assumptions, lift capacity, and lift-to-drag ratio; analysis drove a longer wing, redesigned nose, and selection of a NACA 4412 airfoil.
- Fabricated the airframe around a carbon-fiber rod using laser-cut balsa ribs and vacuum-formed PETG skin; corrected a center-of-mass error and completed bench-thrust, spar-flex, and short successful flight testing.
- Built two vacuum formers (2 × 4 ft full-size and 18 × 18 in prototype) with a heater array of salvaged toaster elements, using circuit math to cap draw at 10 A on a standard 120 V outlet; designed the mold-making process and moved the forming surface from pegboard to fine steel mesh.

**OpenFOAM CFD Simulation GUI** | Independent project

- Developed and tested an AI-assisted GUI for STL-based OpenFOAM simulation setup, configurable multi-core runs, and interactive 3D visualization of surface pressure and streamlines.
- Analyzed a Fusion-designed winged aircraft at sea level and 50 m/s using an incompressible case; reviewed pressure distribution, lift/drag behavior, and integrated X/Y/Z surface-force components.

## TECHNICAL SKILLS

**Design and analysis:** Autodesk Fusion 360, Autodesk CFD, OpenFOAM, CAD/CAM

**Fabrication and testing:** FDM and resin (SLA) 3D printing, Bambu Studio, vacuum forming, laser cutting, UAV assembly and flight testing

**Programming and systems:** C++, Python, Java, MAVLink telemetry

**AI tooling:** Claude Code, OpenAI Codex, agent skill authoring, multi-agent orchestration, AI workflow design, prompt engineering

**Language:** Russian - advanced speaking, reading, and writing