

Andy Vu

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US Citizen

Atlanta, GA

EDUCATION

Carnegie Mellon University

Mechanical Engineering, Master of Science-Research

Pittsburgh, PA

May 2026

Georgia Institute of Technology

Mechanical Engineering, Bachelor of Science

Highest Honors

Atlanta, GA

December 2022

WORK EXPERIENCE

Earthly Dynamics, LLC – Roswell, GA

Mechanical Engineer, Research Engineer

May 2021 – August 2024

- Conducted experimental research on paraglider aerial deployment dynamics, investigating causes of asymmetric inflation and collapse to inform reliable high-performance wing deployment strategies.
- Developed and validated a novel aerial deployment system through iterative prototyping and flight testing in collaboration with U.S. Army CCDC Soldier Center and industry partners.
- Integrated mechanical design with empirical testing and data analysis to advance understanding of paraglider inflation behavior and support the transition of PEGASYS from proof-of-concept to functional research prototype.
- Engineered and tested Dropmate v2.0, an IP67-rated parachute event logger, including mechanical housing design (O-ring sealing, breathable vent integration) and environmental validation in saltwater and humidity.
- Modified and evaluated small-scale paragliders (ram-air and single-surface) to assess aerodynamics and venting strategies, supporting scalable design insights for full-sized platforms.
- Supported lab infrastructure by maintaining 3D printing systems (Prusa MK4s), fabricating prototypes, and troubleshooting hardware for rapid test iteration.

RESEARCH

Jamming Gait on A Snake Robot

August 2024 - Present

Advisor: Dr. Howie Choset (Carnegie Mellon University)

Area of Research: Controls, Gait Design, Robot Manipulation, Motion Planning

- Designed and implemented a force-controlled, windowed anchoring gait enabling the snake robot to generate resistive wrenches and maintain stability under gravitational and microgravity conditions.
- Developed coordinated link motion planning algorithms that allow non-anchored segments to achieve target positions while performing obstacle avoidance in constrained environments.

Bleed-Air of A Single-Surface Parafoil

January 2022 – August 2024

Advisor: Dr. Mark Costello (Earthly Dynamics, Georgia Institute of Technology)

Area of Research: Aerodynamics, Experimental Flight Testing, Unconventional Control Actuation, and Parafoil/Canopy Design

- Investigated bleed-air venting methods for single-surface parafoils, evaluating how vent geometry and location influences canopy performance.
- Designed and modified parafoils with custom vent shapes to experimentally measure effects on glide slope and air loss.
- Built a remote-controllable paramotor platform to enable repeatable, consistent flight testing of aerodynamic modifications.
- Combined simulation and experimental results to characterize bleed-air behavior and validate physical test findings.

PUBLICATIONS

- Ward, D. J., Vu, A. L., and Costello, M., “Bleed Air Actuation for a Single Surface Parafoil,” *AIAA AVIATION Forum and ASCEND 2024*, paper AIAA 2024-4519, July 2024.
- Ward, D. J., Vu, A. L., and Costello, M., “Control Authority of a Single-Surface Parafoil with Bleed-Air Spoilers,” *Journal of Aircraft*, Vol. 61, No. 6, pp. 1–7. <https://doi.org/10.2514/1.C037791>, URL <https://doi.org/10.2514/1.C037791>.
- Ward, D. J., Vu, A. L., Ward, M., and Costello, M., “Bleed-Air Control of a Single Surface Parafoil Canopy,” *American Institute of Aeronautics and Astronautics Inc, AIAA*, 2022. <https://doi.org/10.2514/6.2022-2716>.