

Thomas Anderson

(435) 764-9227 • St. George, Utah 84770 • tband99@gmail.com • [linkedin.com/in/thomas-b-anderson](https://www.linkedin.com/in/thomas-b-anderson)

EDUCATION

Bachelor of Science in Mechanical Engineering

May '26

Utah Tech University | St. George, Utah

Relevant Coursework: Modern Controls, Autonomous Vehicles, Controls, Fluid Mechanics, Machinery, Thermodynamics, Prototyping

HONORS & AWARDS

- INSPIRE Scholar, National Science Foundation (NSF)
- Full-Tuition Transfer Scholarship, Utah Tech University

RESEARCH

CubeSat ADCS Development Capstone | Utah Tech University

Aug '25 - Apr '26

Controls Team Member | Utah Water Conservancy Imaging Mission

Developing attitude determination and control system (ADCS) for a modular CubeSat platform designed to enable annual missions with interchangeable payloads. Leading early-phase MATLAB simulation development integrating IMU, magnetometer, sun sensor, and star tracker data for attitude estimation and control. Contributing to a scalable architecture that allows future teams to focus on mission-specific payloads while leveraging established control infrastructure.

RFID Based Tracking System | Utah Tech University

Aug '24 - Dec '25

Mechanical Design | National Science Foundation

Developing RFID-based system to provide real-time visitor density data for large venues as part of NSF-funded interdisciplinary research program. Leading enclosure design for RFID reader modules and conducting system testing to validate tracking performance across various environmental conditions. Collaborating with computer science and electrical engineering students to integrate hardware, embedded systems, and data visualization software into functional prototype.

PROFESSIONAL EXPERIENCE

UAV Technician Intern

Jul '25 - Aug '25

Vector | Draper, Utah

- Assembled and integrated military-grade quadcopter UAV systems, including frame construction, flight controller stacks, and sensor payloads, while supporting the transition from prototype to production
- Conducted flight testing operations and post-flight analysis to validate system performance, identify design improvements, and document procedures for prototype iterations
- Collaborated with engineering teams to modify and refine UAV prototypes, translating design specifications into manufacturable solutions and streamlining production processes

Mechanical Engineering Intern

May '23 - Jan '25

Wilson Connectivity | St. George, Utah

- Used SolidWorks to innovate and implement design concepts that significantly enhanced the durability of antenna mounts in consumer electronics projects
- Improved testing by designing fixtures for PCB boards and signal boosters, boosting efficiency, workflows, and accuracy
- Utilized a variety of prototyping tools including 3D printing, CNC machining, drill press, and band saw during the creation of new test fixtures

Race Timer

Mar '22 - Nov '24

Brooksee

- Gained practical experience in wireless communication, backend data management, and large-scale field deployment of IoT devices while collaborating with race officials to monitor live progress and verify results
- Operate and maintain RFID-based race timing systems, supporting events of up to 700 participants and thousands of racers over multiple seasons

- Supported the transition from fully passive RFID tags to BLE-based systems with custom antennas, improving real-time athlete tracking and system reliability

Materials Intern

May '22 - Aug '22

RAM Aviation Space and Defense | St. George, Utah

- Collaborated with manufacturing engineers to conduct cost analysis and actively contributed to cost reduction initiatives
- Interfaced closely with manufacturing engineers and planners to optimize the pneumatics assembly area, leading to a significant efficiency improvement
- Assembled an average of 10 kits daily, each comprising varying quantities of parts ranging from tens to thousands, demonstrating efficiency and adaptability in production processes

CONFERENCE PRESENTATIONS

Anderson, T., Dockstader, L., Espinoza, A, & Montalvo, A. (2025, April 10-13) *RFID Wristband Tracking System* [Poster Presentation]. Rocky Mountain Biomedical Symposium, St. George, Utah, United States.

Anderson, T., Dockstader, L., Espinoza, A, & Montalvo, A. (2025, April 18) *RFID Wristband Tracking System* [Poster Presentation]. Trailblazer Symposium, St. George, Utah, United States.

PROJECTS

Autonomous Drone Project (Self Directed, Ongoing)

- Developing hands-on skills in autonomous systems by modifying an FPV drone to run ArduPilot and configuring flight controllers for stable, autonomous flight
- Learning ROS and Gazebo for simulation-based development and testing of autonomous flight behaviors
- Implementing obstacle detection algorithms with future plans to integrate computer vision for perception and navigation

Autonomous UAV Control and Path Planning

- Implemented and optimized a Rapidly-Exploring Random Tree (RRT) algorithm for UAV navigation, improving path efficiency via dynamic restructuring
- Built and tested a complete autopilot stack—modeling, control, estimation, guidance, and navigation—using MATLAB and live quadcopter flight tests
- Conducted hardware-in-the-loop validation to verify control robustness and path-tracking performance

Turbo Regatta

- Designed and built an electric propulsion system for pedal boats as part of a cross-disciplinary engineering team
- Led waterproof (IP28-rated) mechanical and user interface design, integrating ergonomic controls with digital feedback systems
- Competed successfully in Engineering Design Day, earning recognition for performance and maneuverability

LEADERSHIP & SERVICE

Mountain Biking Club VP

Jan '22 - Apr '23

Eagle Scout

Mar '17

SKILLS

Design & Simulation : SolidWorks, OnShape, Fusion 360, ANSYS, ROS

Fabrication: Laser Cutting, 3D Printing, CNC Machining/Operations, Manual Mill, Manual Lathe, Soldering, Welding

Programming: MATLAB, Arduino