Dawson Pierce

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Education / Achievements

The University of Alabama Tuscaloosa, AL

Doctor of Philosophy in Aerospace Engineering and Mechanics, 3.765/4.0 GPA *Aug. 2026*

Masters of Science in Aerospace Engineering and Mechanics, 3.846/4.0 GPA *Dec. 2024*

Bachelor of Science in Aerospace Engineering with Honors, 3.765/4.0 GPA *May 2024*

ACCEPT Fellowship

Alabama Collaborative for Contemporary Education in Precision Timing (ACCEPT) *Aug. 2025 - Aug. 2026*

Relevant Research / Projects

Laboratory for Autonomy, GNC, and Estimation Research

Storm Tracking On-orbit using RFS with complementary MOS (STORM) *Completed*

- Developed our RFS Python package to include the Gamma Gaussian Inverse Wishart (GGIW)
- Implemented the GGIW model on PHD, CPHD, and GLMB filters for Multi-Extended Target Tracking

Layer and Interface Trackers for Radar Echograms (LITRE) *Completed*

- Applied RFS-based MATLAB solutions to processed echograms as an automated internal ice layer tracker
- Developed a MATLAB GUI for manually tracking the layers to validate results

Flight-time Estimator for Electric SUAS Teams (FEEST) *Completed*

- Collected battery pulse test data using Raspberry Pi and Arduino in varying temperatures
- Developed Extended Kalman Filter and Sigma Point Kalman Filter algorithms to predict flight time

ACCEPT Fellowship

Pseudolite Integration with Local Synchronization for Navigation and Enhanced Ranging (PILSNER) *In progress*

- Integrated atomic clock modules to acquire a high precision navigation solution independent of GNSS
- Tested navigation solutions on-board varying UAVs

Work Experience

Laboratory for Autonomy, GNC, and Estimation Research (LAGER) Tuscaloosa, AL

Graduate Research Assistant *May 2024 – Present*

- Studying guidance, navigation, and control methods alongside multi-target tracking algorithms
- Supported data processing with The Remote Sensing Center using Random Finite Set methods

Undergraduate Research Assistant *Jan. 2023 – May 2024*

- Developed GNC-related algorithms, manufactured UAVs
- Assisted in a deployment for the remote sensing of ice layers using airborne radar

The University of Alabama's Division of Student Life, University Recreation Tuscaloosa, AL

Facility Operations Supervisor *Sept. 2022 – Jan. 2023*

- Opened facilities, sold equipment, managed and mentored operations associates
- First responder in case of injury or emergency

Facility Operations Associate *May 2022 – Sept. 2022*

- Cleaned machines, rented equipment, enforced policies, welcomed guests
- Ensured patrons engaged in physical activity in a safe manner

Relevant Skills

Programming Languages: MATLAB, Simulink, C++, Python, LaTeX, Dockerfile
Hands-On: Soldering, 3D printing, Arduino Programming, Raspberry Pi Programming
Familiar Software: SolidWorks, Fusion360, Onshape, FlightStream, OpenVSP, Visual Studio Code, Photoshop, Illustrator, Inkscape
Soft Skills: Detail-oriented, Adaptable, Collaborative, Self-Driven, Communication