

Arden Markin

aqmarkin@gmail.com • (205) 239-8048 • linkedin.com/in/aqmarkin • ardenmarkin.com

EDUCATION

The University of Alabama | Tuscaloosa, AL

Master of Science in Aerospace Engineering | GPA: 4.0/4.0

May 2026

Bachelor of Science in Aerospace Engineering, Math and Computer Science Minor | GPA: 4.0/4.0

May 2025

Relevant Coursework: Optimal Control and Estimation, Propulsion, Compressible Flow, Aerodynamics, Flight Dynamics and Control, Senior Design I, Computational Fluid Dynamics, Aircraft Structures, Dynamics, Mechanics of Materials, Linear Algebra, Discrete Mathematics, Differential Equations, Theory of Probability

Activities/Organizations: Honors College, Sigma Gamma Tau, Reformed University Fellowship, Ultimate Frisbee Club Team, American Institute of Aeronautics and Astronautics, Undergraduate Research Assistant, Hackathons

PROFESSIONAL WORK EXPERIENCE

Operations and Systems Engineer | Remote Sensing Center | Tuscaloosa, AL

Aug 2023 - Present

- Designed and implemented quadcopter control systems using MATLAB Simulink and C++ for sUAS target tracking
- Piloted 55 lb. hexacopters in remote regions to develop advanced radar systems using Ardupilot and Mission Planner
- Led the development and testing of a flash LiDAR payload configuration to improve accuracy of scrapyard volume estimation techniques by 10% using ROS2, Linux, Python, and MATLAB
- Used SolidWorks, Simulink, and 3D-printing to design a 4 lb. quadcopter in under 5 weeks for a DOD D2P2 proposal (awarded)

Orbital Trajectory Planning Intern | Astrodynamics Space and Research Laboratory | Tuscaloosa, AL

Feb – May 2023

- Studied the behavior of unstable orbits around Lagrange points to analyze the computational efficiency of high order integration techniques
- Modeled CR3BP orbits and simulated their behaviors using advanced numerical methods and Python

Camp Counselor | Generate by YM360 | Birmingham, AL

May – Aug 2023

- Mentored 30+ children weekly through leading bible studies and sharing the Gospel
- Enhanced teamwork skills by coordinating camp activities and events for over 6000 children across 11 weeks
- Guided over 40 youth ministers and parents through YM360 curriculum to better equip them for student ministry

TECHNICAL SKILLS

Software: C++, MATLAB, Python, Latex, Linux Bash (proficient); ROS2, Simulink, Microsoft Excel (intermediate); C and HTML (beginner)

Mechanical: SolidWorks, AutoCAD, 3D Printing, Cura (proficient); Fusion360, Power Tools (intermediate); CNC, FEA (beginner)

Certifications: FAA Part 107 Certified sUAS Remote Pilot

LEADERSHIP & PROJECTS

President | SGT Aerospace Honor Society

Jan 2023 – Present

- Implemented a tutoring program with a local public charter aviation school to prepare students for standardized tests
- Coordinated over 30 members to assist the aerospace department by giving student tours and staffing department booths
- Increased monthly attendance by over 300% in under a year through strong leadership and effective communication skills

Project Lead | Outdoor Multi-Target Tracking of sUAS

Oct 2023 – July 2024

- Designed a distributed thermal camera network using SolidWorks and Linux to track targets in 3D space
- Used experimental Random Finite Set filters, Python, OpenCV to improve real-time target tracking accuracy by over 30%
- Learned strong communication skills to present preliminary results in several conferences including AIAA Aviation
- Primary author of an AIAA conference paper: <https://arc.aiaa.org/doi/10.2514/6.2024-4289>

EXTRACURRICULAR ACTIVITIES & AWARDS

University of Alabama Most Outstanding Junior in Aerospace Engineering

Aug 2023 – May 2024

Hackathons

Apr 2021 – Present

- 2024 UA Innovate Hackathon: 1st place in Full Stack category (team lead)
- 2024 Big Ideas Social Innovation Contest: Grand Prize Winner (project manager)
- 2023 Data Analytics Hackathon: 1st place overall (Chief Business Officer)

Chess

Feb 2011 – Jul 2020

- National Chess Master: 2016 – Present
- Alabama State Scholastic Champion: 2012, 2013, 2014, 2015 (tied), 2016, 2017 (tied)
- Private Chess Tutor and Coach: 2015 – 2020