

Jake Alford

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EDUCATION

**Bachelor of Science in Computer Systems Engineering
with Minor in Computer Science**

University of Georgia
Athens, Georgia
May 2021
GPA 3.77

Bachelor of Business Administration in Finance

RELEVANT EXPERIENCE

Small Satellite Research Lab

University of Georgia
March 2020 - Present

Electronics Team

- Develop embedded software to command a USB peripheral controller with SPI interface to communicate between the OBC and satellite's image capture subsystems
- Write sensor logging software to capture sensor readings from a thermal vacuum chamber and plot real time data

BioSensing and Instrumentation Lab

University of Georgia
May 2019 – May 2020

Researcher

- Lead a team of 5 engineering students to design, develop, and implement an autonomous drone and sensor system for capturing multispectral images to perform high throughput phenotyping
- Configure sensor systems responsible for data acquisition from microcontrollers and camera modules
- Run simulation software to test scripts and algorithms before field trials with drone hardware

PROJECT EXPERIENCE

Student Aerospace Initiative

August 2018- Present

Advanced Quadcopter Build Team

- Implement software on embedded systems of quadcopter to add autonomous functionality and GPS navigation
- Extend drone's GNC systems for off board control and object tracking and following

NASA's H.E.R.A. Project Red

February 2019 – March 2019

Ground Control Team

- Work with a team of 8 engineers to run Martian drilling simulations with 4 NASA astronaut candidates housed remotely in the H.E.R.A module

American Society of Agricultural and Biological Engineers: Robotics Competition

August 2019 – June 2020

Computer Vision Team Lead

- Coordinate with a team of 16 students to design a task-oriented robot for competition
- Train convolutional neural network for image classification for healthy or stressed plants

TECHNICAL SKILLS

Programming Languages: C/C++, Java, Python, assembly language, Verilog, PHP, HTML, CSS

Operating Systems: Windows, Linux/Unix

Software: ROS, Gazebo, Open CV, Tensor Flow, LabView, MS Office, MySQL

AWARDS

2020 UGAHacks 5 – Hackathon –First Place Overall – Awarded first place overall against 70 teams and over 300 participants for our virtual reality, tele-operated robotic arm

VOLUNTEER WORK

Free I.T. Athens - Volunteer - Collected discarded computer equipment to refurbish machines using open source software that was then donated to nonprofits or sold at a discount back to the community