

# Austin Barrow

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github.com/austinjbarrow2000

## Education

### Georgia Institute of Technology

MS, Computer Science, Specialization in Machine Learning

Atlanta, GA

Expected 2025

### Purdue University

BS, Aeronautical and Astronautical Engineering

West Lafayette, IN

May 2022

- Double Minor in Computer Science and Mathematics, Specialization in Propulsion
- Honors College Student and Presidential Scholarship Recipient

## Work Experience

### Ansys Government Initiatives (formerly, Analytical Graphics Inc.)

Exton, PA

Software Verification Engineer

June 2022 - Present

- Led the execution of automated/manual testing for STK Graphics, Docker, Parallel Computing APIs, and Linux
- Programmed TKinter application to produce Porkchop plots using STK Lamberdt Solver for Ansys 2023 Hackathon
- Led presentations on ML algorithms as an active member of the AGI Artificial Intelligence/Machine Learning group

### Air Force Research Laboratory

Wright Patterson AFB, OH

Aerospace Engineering Intern

May 2021 - Aug. 2021

- Manufactured and tested emergency hydrazine detection using Arduino with Python real-time lumen visualization
- Developed LabVIEW DAQ system with NI thermocouples for Particle Erosion Test Facility to visualize and control thermal variation across sample bed to analyze coating erosion at specific temperature ranges and airspeeds

### University of Southern California

Los Angeles, CA

Undergraduate Researcher

May 2019 - Jan 2022

- Developed Java program to reduce registration analysis of point clouds from 15 min to 45 sec for 3D printing
- Programmed computationally efficient Java program to transform millions of 3D points via rotation and translation
- Performed cost-benefit analysis on registration and nearest neighbor algorithms for nonrigid objects for ML model

## Research and Team Projects

### Spacecraft Senior Design

West Lafayette, IN

Propulsion Lead Engineer

Jan. 2022 – May 2022

- Managed propulsion team to complete Pre-Phase A NASA proposal for theoretical interstellar probe mission
- Optimized sizing for launch vehicle and kick stages with trajectory determination in MATLAB for Pareto analysis

### Purdue University Research

West Lafayette, IN

Dr. Qiao Undergraduate Researcher

Aug. 2021 - May 2022

- Designed proof of concept hypersonic solid fuel scramjet combustion engine utilizing atmospheric oxygen as oxidizer and Paraffin wax as fuel through the analysis of ignition temperature and development of roll waves off fuel grain

Purdue Experimental Turbine Aerothermal Labs Researcher

Sep. 2019 - Dec. 2020

- Optimized heat transfer of cooling jacket mass flow in MATLAB to ensure Kulite sensor thermal equilibrium
- Designed and manufactured measurement inserts for supersonic wind tunnel with Fusion 360 and CNC mill

### FAA Smart Airport Competition - Purdue (1st Place)

West Lafayette, IN

Structures Lead Engineer

Sep. 2019 - Dec. 2020

- Led Solidworks CAD and FEA design of autonomous collapsible wheelchair that fits within aircraft aisle
- Validated proof of concept to improve disabled passengers' satisfaction and lower airport costs via cost analysis

## Skills and Interests

**Software:** C, Python, Java, Javascript, MATLAB, Perl, LabVIEW, Linux, Arduino, NI-DAQ, React

**Interests:** Kerbal Space Program, Advent of Code, Piano, Alto Saxophone, Biking, Volleyball

## Awards And Recognition

STK Grand Master Certification, ODTK Certification, TETK Certification

July 2022

Computer Science Undergraduate Teaching Assistant

2021, 2022

FAA Smart Airport Challenge 1st Place Winner

Dec. 2020

CRADLE Analog Astronaut

Summer 2020

AIAA International Astronautical Congress Diversity Scholar

Aug. 2019