

# ZACHARY OLKIN

## EDUCATION

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### Georgia Institute of Technology

August 2018 - May 2022

Candidate for Bachelor of Science in Computer Engineering

GPA: 4.00

Member, Eta Kappa Nu

## EXPERIENCE

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### iREAL Lab

January 2020 - Present

*Undergraduate Researcher*

Atlanta, GA

- Led the development of an autonomous quadrotor architecture for path planning and control leading to the submission of one paper. Developed and analyzed non-linear controllers and filters. Innovated novel methods for time-optimal, onboard trajectory generation.
- Created and tested a tool to receive data from external cameras on a flying quadrotor in real time.

### Grand Challenges

May 2020 - Present

*Team Facilitator*

Atlanta, GA

- Guide the work of a team of undergraduate freshmen in the Grand Challenges program at Georgia Tech. Help the team develop ideas, work on leadership skills, and think critically about real world problems.

### Left Hand Robotics, Inc.

August 2016 - August 2019

*Robotics Engineering Intern*

Longmont, CO

- Designed filters for accelerometer data that reduced noise by six orders of magnitude. Wrote critical IMU device driver for a new IMU.
- Used Solidworks to design attachments for the robot and the first version of the path collection tool. Also designed show room setups.

### EPIC Lab

January 2019 - May 2019

*Undergraduate Researcher*

Atlanta, GA

- Worked on the development of a hip exoskeleton for assisting people with walking disabilities. This included walking in the exoskeleton and monitoring others while they used the exoskeleton.
- Developed a user interface for researchers to easily adjust, tune, and graph parameters in real time.

### Grand Challenges

January 2019 - May 2019

*Ambassador*

Atlanta, GA

- Contacted potential Georgia Tech freshman and discussed my experiences at Georgia Tech and in the Grand Challenges program.
- Provided advice to new students and gave tours to students who came to visit.

## ACTIVITIES

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### The Hive Interdisciplinary Makerspace

August 2019 - Present

*Master Peer Instructor*

Atlanta, GA

- Teach students soldering, breadboard use, 3D printing best practices, and PCB Fabrication. Also help students find the correct parts for their projects.
- Teach other peer instructors how to use the benchtop electronics tools. Assist with the new peer instructor interview process.

## RoboJackets

*Software Training Lead*

May 2019 - December 2019

*Atlanta, GA*

- Lead a group of 10 students to outline, script, film and edit an educational video series on C++.
- Taught in-person classes about writing C++ for robotics.

## PATENTS AND AWARDS

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**US Patent:** # 9,303,448: *FLOOD SHIELD SYSTEMS AND METHODS*

**US Patent Pending:** *AUTONOMOUS PATH TREATMENT SYSTEMS AND METHODS*

**PURA Salary Award:** Grant to perform research in summer 2020. *Georgia Institute of Technology (2020)*

**1st Place at HackGT:** First place out of about 200 submissions. *Georgia Institute of Technology (2019)*

**Genius Award:** Award for assisting others and achieving high academic standards. *Georgia Institute of Technology (2019)*

**Prudential Spirit of the Community Award:** Recognition of outstanding volunteer work. *State Wide, Colorado (2016)*

## SKILLS

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### Programming

C++, C, Matlab, x86 Assembly, MIPS Assembly

### Hardware

Oscilloscopes, Logic Analyzers, Waveform Generators, Power Supplies

### Software

Solidworks, GitHub, L<sup>A</sup>T<sub>E</sub>X, Vim, Eagle CAD

### Tools & Operating Systems

Linux, Windows, Slack, Microsoft Office, Google Drive

### Machine Shop Tools

Manual Mill, CNC Mill, Bandsaw, Stomp Shear