



# AARON BECKER

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## ABOUT

Undergraduate at MIT with a passion for electromechanical engineering and programming challenges; excited to tackle new challenges in robotics, space, and autonomy.

## EDUCATION

### **Massachusetts Institute of Technology, Class of 2025**

Candidate for B.S. in Mechanical Engineering and Computer Science Minor  
Expected Graduation: 2025

*Relevant Coursework:* Fundamentals of Programming, Physics I

*Additional MechE Skills:* CAD (Solidworks, Siemens NX), CAM (F360), CNC (manual mill and lathe), 3D printing, Waterjet, Benchtop and Hand Tools

*Additional CS Skills:* Python, C/C++, Javascript/HTML/CSS, Git, PCB Design

*Language Skills:* Limited working proficiency in Spanish

### **Burlingame High School, Class of 2021**

Unweighted GPA 4.0 / Weighted GPA 4.21

Valedictorian - Class of 2021

## EMPLOYMENT & EXPERIENCE

### **Mechanical Engineering, MIT Formula SAE Team (Oct 2021 - Present)**

- Responsible for design + static and dynamic analysis of braking system
- Matlab code + hand calculations to determine optimal system geometry
- Assisted with assembly and testing of epicyclic gearbox

### **Avionics and Liquid Propulsion, MIT Rocket Team (Sep 2021 - Jan 2022)**

- Developed embedded firmware for integrated rocket computer
- Sensor testing and integration: KX134 High-G Accelerometer
- Assisted with test stand assembly for 1.6 kN Ethanol/LOX engine

### **Autonomous Systems Intern, Rain Industries (Jun 2021 - Aug 2021)**

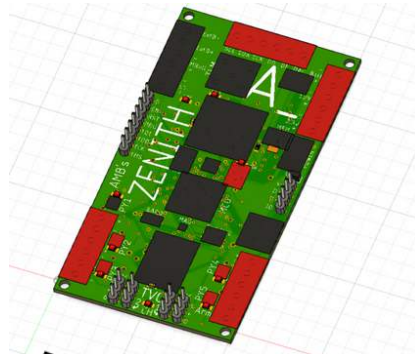
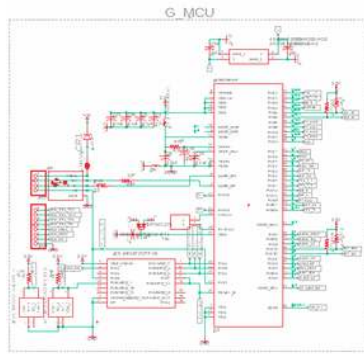
- Developed hardware-in-the-loop bench test avionics setup
- Assisted with hardware integration of actuators, power system, and sensors on the vehicle
- Participated in test campaign to evaluate engine instrumentation and performance
- Worked with proprietary vendor autopilot software for vehicle configuration and ground station setup

### **Captain, Engineering, FRC #5026 (May 2019 - May 2020)**

- Responsible for robot mechanical design and training of members
- CNC machinist; developed extrude machining jig to minimize machine time

## RECENT PERSONAL PROJECTS

# ZENITH - Thrust-Vectored Rocket



See technical video: <https://bit.ly/zenith-tvc>

Developed ARM M0-based flight computer for real-time control of thrust vectored model rocket. Includes 10dof IMU (gyro, accel, mag, baro) and GPS for localization, packet LoRa radio for telemetry, onboard flash and SD card for data logging. Carefully optimized BOM and board layout for launch forces.

**ZenithMKII (in progress) selected for competitive ProjX funding by MIT**

### Electric Skateboard



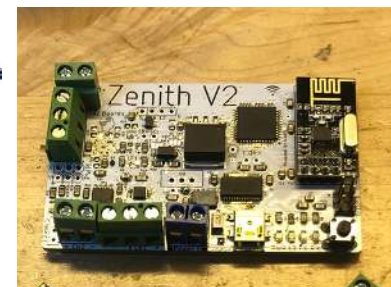
6kW  
< motors  
Custom artwork, PCB  
control electronics (right)

### Flight Club



FAR Part 103-legal ultralight  
plane designed by students  
[flightclubaerospace.com](http://flightclubaerospace.com)

### PCB Development



Atmega-1284P based,  
2.4GHz radio, PWM and  
MOSFET switched I/O

### 2020: COVID-19 Mask Production

3-D printed and delivered over 500 PPE mask parts to local hospital (Kaiser) in COVID-19 hotspot (Santa Clara), employed system that monitors print remotely and automatically pauses print if issue arises



Programming  
in C, Java,  
Javascript,  
Python, Shell



Mechanical  
Design using  
Solidworks +  
Simulation



Full-stack  
web design,  
HTML/JS/CSS  
+ Node.JS



Experience with  
design and BOM  
selection for  
advanced PCBs in  
Eagle/Altium

To see more  
projects, visit:  
[ambecker.com](http://ambecker.com)

## COMMUNITY SERVICE

## SKILLS