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

Expected Graduation: 2025

Candidate for B.S. in Mechanical Engineering and Computer Science Minor

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

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)

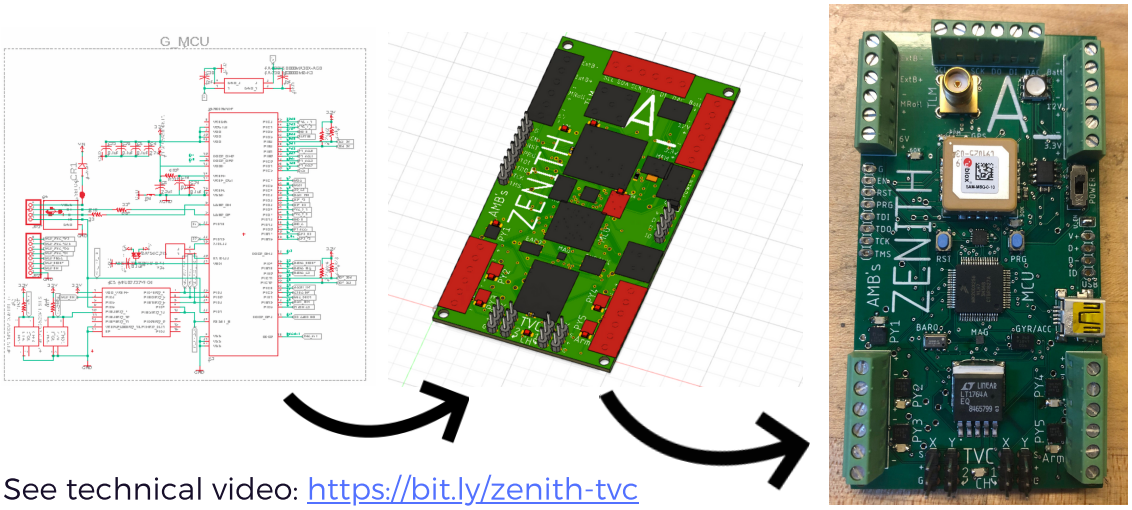
- Developed hardware-in-the-loop bench test avionics setup
- Assisted with hardware integration of actuators, power system, and sensors on the vehicle
- Participated in test campaign to evaluate engine instrumentation and performance
- Worked with proprietary vendor autopilot software for vehicle configuration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

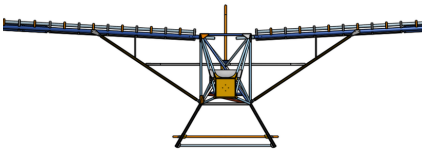
Developed ARM M0-based flight computer for real-time control of thrust vectored model rocket. Includes 10dof IMU (gyro, accel, mag, baro) and GPS for localization, packet LoRa radio for telemetry, onbard flash and SD card for data logging. Carefully optimized BOM and board layout for launch forces.

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

Electric Skateboard

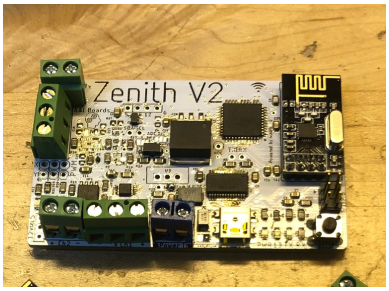
Custom artwork, PCB control electronics (right)

Flight Club



FAA Part 103-legal ultralight plane designed by students flightclubaerospace.com

PCB Development



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

To see more projects, visit: ambecker.com

COMMUNITY SERVICE

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

SKILLS

- 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