

MARCELO GOLUBOFF

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TECHNICAL SKILLS

Languages: Python/MicroPython/CircuitPython, C++, C, Java, JavaScript/TypeScript, MATLAB, Node.js, express.js

Hardware & CAD: Autodesk Fusion 360 CAD/CAM, KiCAD, SOLIDWORKS, Autodesk EAGLE, Schematic capture & 2–4 layer PCB layout, DFM, embedded firmware development, PID control & sensor fusion, power electronics & battery safety (BMS), brushless DC motor control, CNC programming/setup/operation, 3D printer design and proper operation

Lab & Test Equipment: Oscilloscope, DMM debugging, logic analyzer, soldering & rework, *soldering 0402 components by hand*

Business & Product: Supply chain & inventory management, investor-facing pitching and product visualization, QA/QC, customer service & order fulfillment, marketing & content strategy, budgeting, partnership development

Certifications: OSHA 10-Hour Certification, Lab Safety Training, Mechanical Electrical Research Safety Training, Fire Safety Training, Hearing Conservation Training, Laser Cutter Safety Training

EDUCATION

University of Massachusetts Amherst, Commonwealth Honors College

GPA: 3.93 | Amherst, MA

Major: Electrical Engineering

Aug 2025 – May 2028

- **Current Courses:** Analytical Tools for ECE, Computational Tools for ECE, Circuits and Electronics I, Advanced Programming

EXPERIENCE

Minuteman Racing Formula SAE Team

Amherst, MA

Electrical & Powertrain Engineer

Sept 2026 – Present

- Designed an electronic shifting solution for our CB600RR engine which utilizes existing mounting holes on the engine. Output shaft includes an Oldham coupling to prevent sideloads on the engine's shifter, and a 1:3.3 gear-ratio connected to a 250W motor for smooth and consistent shifting.
- Working individually and in groups to design and iterate on designs for a new car which is planned to be complete by May 2028.

UMass All-Campus Makerspace

Amherst, MA

Student Staff

Sept 2026 – Present

- Working closely with the Director of Campus Makerspaces on 3D printer & equipment troubleshooting, trainings, and general maintenance.

Circuit Wizardry

Winchester, MA

Founder & Lead Engineer

Apr 2023 – Jun 2025

- Designed, manufactured, and sold flight-computer PCB products end to end: Schematic design, PCB layout, fabrication, QA. Built a customer base, including a partnership supplying flight computers to a rocketry club for a record-altitude launch attempt.
- Wrote and maintained MissionControl, free open-source ground-station firmware/software written in Java and MicroPython.
- Ran supply chain, quality assurance, order fulfillment, customer support, and content marketing across blog and social channels.

Middlesex Community College, Dept. of Engineering

Bedford, MA

Lab Technician

Apr 2025 – Jun 2025

- Recruited by my engineering professor to help build and run the department's new makerspace lab; partnered directly with the Department Head of Engineering on equipment selection and machine setup and workflow.
- Configured, calibrated, and maintained CNC machines and 3D printers to support campus-wide, hands-on coursework; developed training materials and certified students on safe, proper operation, troubleshooting, and preventive maintenance procedures.

PROJECTS

STARLIGHT & STARLIGHT MINI — Flight Computers

- Used Fusion 360 and KiCAD to design two independent flight-computer PCBs at separate price/feature points (\$49 and \$24), including a 6-DOF IMU, dual programmable pyro channels, and hardware TVC support on the flagship board.

- Worked with JLCPCB and designed a QA process to get consistent PCB runs across multiple production batches.
- Sold over 100 units combined across both products' lifetime on Tindie, refining designs from customer feedback each run.

42V Battery Management System & 3-Phase Motor Control

- Designed a 4-layer, 48V-rated BMS PCB in Fusion 360 to protect a custom lithium-ion pack from thermal-runaway failure, applying material from a self-completed MIT power electronics course.
- Designed a companion 4-layer 3-phase motor-control PCB to interface with the battery pack for a foldable electric skateboard. Used a novel hybrid square-sinusoidal drive system for the first time on a skateboard - allowing for low and high speed power.

ASCENT, Launch Pad Electronics: Designed ground-support electronics and a robotic launch pad as a system to safely launch model rockets. Used an RP2040 with servo control MOSFETS to actuate a launch tower and stabilizing arms. Included an onboard IMU to easily level the launch pad and logged diagnostic info from the onboard servos and IMU to improve the design over time.

CNC Mill Build: Rebuilt a 2018 CNC router into a machine capable of reliably milling aluminum. Modeled the entire router in Fusion 360 before beginning manufacturing and assembly. Had to diagnose backlash and squareness issues from a plasma-cut frame due to tolerances, then used it to manufacture parts for other projects.

Aluminum Thrust-Vectoring Mount for Solid Fuel Model Rocket Engines: Designed and CNC-machined an all-aluminum 2-DOF thrust-vector-control gimbal to $\pm 0.1^\circ$ actuation accuracy, iterating through three designs for CNC manufacturability and driving it with custom control code through STARLIGHT. Milled parts using Fusion 360's manufacturing workflow and used Universal G-Code sender to send G-Code to the mill.

CCIC Business Pitch, Assistive Navigation Wearable: Selected for the Community College Innovation Challenge; built investor-facing product visualizations in Blender 4.4 for InSight, a LiDAR/camera/AI navigation aid for blind users.

ADDITIONAL EXPERIENCE

Tire Technician, VIP Tires & Service (Watertown, MA), Mar 2024 – Mar 2025: Performed tire installation, rotation, and vehicle safety inspections in a fast-paced shop environment. Worked against productivity measures.

Cashier & Birthday Party Host, Launch Entertainment Park (Woburn, MA), Feb 2022 – Present

Extracurriculars: UMass Card Game Club, UMass Motorsports Club, engine rebuilding, guitar & lead vocals in local Amherst band.