Matthew Kibarian

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Education

Carnegie Mellon University August 2024 – May 2028 (Expected)

BS in Electrical and Computer Engineering, Minor in Materials Science

- **Coursework:** Electronic Devices and Analog Circuits, Structure of Materials, Linear Algebra and Vector Calculus for Engineers
- GPA: 3.4/4.0

Experience

Lead Product Engineer, Last Anvil Innovations – Remote December 2024 – Present

- Created Last Anvil's *Ember* product line for the FIRST Robotics Competition, expanding it into the electronics product category and opening it to an estimated additional $10MM TAM.
- Designed and commercialized 6 PCBs implementing robust solid-state logic to interface with DIO and the CAN-FD protocol, improving robot reliability on the field and aiding in quick troubleshooting.
- Designed a sensor framework using the MCP251863 transceiver for CAN-FD-enabled gyroscopes, beam breaks, and more, with products releasing for the 2026-2027 season

Course Instructor, Carnegie Mellon Student College – Pittsburgh, PA January 2025 – Present

- Teaching 98-012: Fun With Robots, the oldest student-led introductory robotics course at CMU, covering sensing, actuation, and control systems algorithms, with a new cumulative final project.
- Managed budgeting, ordering, organization, and outreach, leading to our most enrolled semester post-COVID.
- Secured $5.2k in annual funding to allow for a waiver of the $50 lab fee for students, lowering the barrier to entry for learning about robotics.

PCB Designer, Albatross Design – Remote August 2024 – Present

- Designed 2 keyboard PCBs based on the ATMega 32u4 and Nordic nRF52840. PCBs include Bluetooth support, onboard USB-C 2.0, and mounting tabs for a screwless case design.
- Managed ordering and logistics with overseas manufacturers. Worked to ensure the highest quality components while keeping costs low.

Mechanical Design Lead, barn2robotics (Team #751) – Portola Valley, CA August 2021 – June 2024

- Designed, manufactured, and integrated intake and shooter systems in 8 weeks for Woodside Priory School's *FIRST Robotics Competition* team.
- Created full robot designs for the 2024 and 2025 seasons in 3 days to be used as early resources for the wider community.

Projects

6502 Computers eightbit.computer

- Created a 6502 Computer (CPU, SRAM, ROM, Serial, and GPIO), first on a breadboard, then on a PCB.
- Wrote a custom EEPROM Programmer in C for an STM32-derivative microcontroller.

Underwater Boat Cleaning Robot basiliskrobotics.com

- Co-founded Basilisk Robotics, an early-stage startup creating an autonomous underwater hull cleaning robot, which can adhere to wood, fiberglass, and metal hulls.
- Currently designing a bio-inspired powertrain to allow adhesion to many materials and surface geometries.

Additional Information

Skills: SolidWorks, KiCAD, Python, MATLAB, C++, Schematic Capture, CNC Milling, Mandarin (Intermediate)

Interests: Skiing in Lake Tahoe, Mid-century Modern Sailboat Design, Watching the Pittsburgh Steelers, Traveling the World