Anthony Miceli

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Education:

University of California, Berkeley, *B.S. Electrical Engineering and Computer Science* **Aug 2023 - May 2027**
Relevant Coursework: Computer Architecture and Machine Structures, Internet Architecture, Artificial Intelligence, Data Science, Devices & Circuits, Data Structures, Interpreters & Algorithms, Signals & Systems, Discrete Math & Probability, 3D Modeling
Affiliations: IEEE, Engineering Solutions at Berkeley, Surge Electric Motorcycles, Barbell at Berkeley, Poker at Berkeley
EE198-002 Hands-on PCB Engineering Decal Course Staff

- Lead lectures on microcontrollers and footprint assignment; Grading manager; Contributed to class project PCB

Technical Skills:

- **Languages:** Java, Python, SQL, C, C++, WSL Linux, Arduino, Lisp
- **Developer Tools & Skills:** VS Code, Git, SolidWorks, Jira, System Design, Prototyping, Altium, 3D Printing, KiCad

Experience:

Project Manager | Engineering Solutions at Berkeley: (Company NDA) **Feb 2025 - Current**

- Leading team of 7 engineers to design, prototype, and mass-produce sensitive electronics packaging for hydroponic sensors

EECS Lead (High Voltage, Low Voltage, CS/DS Teams) | Surge Electric Motorcycles **Oct 2024 - Current**

- Founding member of Berkeley's first competitive electric motorcycle club competing in the Formula Electric competition
- Onboarded/led group of 14 engineers on the EECS teams, ran weekly meetings, organized GANTT, managed task assignments
- Designed and assembled 26s4p battery pack, sourced OTS BMS, motor controller, LV components, and wiring harnesses

EECS Engineer | Engineering Solutions at Berkeley: Rapid Robotics **May 2024 - Dec 2024**

- Benchmarked fill recognition and reconstruction accuracy through facet and vertice count of three LiDAR scanning cameras by programming a UR5 arm with 6 DoF for a consistent path and angle, achieving 1mm accuracy and RMSE of ~10^-3
- Prototyped motor controller for NEMA-17 stepper using an A4988 driver to power a pulley-based gantry arm, implementing Bresenham's algorithm and PID control for smooth motion, ∓.03mm precise positioning, and 20% faster response over 60 trials

EECS Engineer | Engineering Solutions at Berkeley: Sentien Robotics **Feb 2024 - May 2024**

- Developed and optimized control algorithms for precise positioning and movement of a cable robot by leveraging real-time CV feedback loops to accurately intercept drones and achieve consistent performance within a margin of error of ~2.3%
- Conducted extensive testing and debugging of motor controller circuits, performing over 500 unit and system tests to ensure 99.9% capture reliability and compliance with safety standards in drone operations, reducing cable failure rate by 20%

Projects:

Traceroute: Python, IP, ICMP, UDP

- Recreated traceroute tool by increasing TTL and looping through sending packets, parsing them, and printing out IP addresses of router found along path to destination, while handling duplicate packets/probes, invalid IP/ICMP/UDP headers, and timeouts

Freeplay IVR: Python, Docker, Version Contro, pyQT, OpenCV

- Open source Instant Video Replay software to assist World Taekwondo Olympic-style competitions using QT for Python and OpenCV, integrating features such as timeline search and support for multiple live camera feeds

Motorcycle Gear-State Shifter: C++, State Machines, Unit Testing, Test Driven Development

- Designed and programmed a gear-state shifter for a motor controller to determine the eligibility of P/R/N/D shifts based on velocity, acceleration, and the current gear state of the motorcycle, and wrote tests to check functionality and edge cases

Smart Wallet PCB: PCB Design, KiCad

- Designed and prototyped a Smart Wallet on a compact PCB that supports a flexible e-ink display, Bluetooth module, hall effect sensor, wireless charging, and utilizes SPI communication on a $50 budget and 3-week time constraint, presented to Apple
- Wallet syncs via Bluetooth to an open-source budget app and displays categorical monthly spending each time it's opened

S1XT33N Voice Controlled Car: Arduino, Circuits, Prototyping, Machine Learning

- Built a small robot that actuates based on four voice commands by learning and constructing ADCs and DACs, motor controllers, encoders, voltage regulators, high/low pass filters, and PWM through breadboard prototyping
- Utilized SVD and PCA for voice command classification, eigenvalue placement for control systems, and System ID techniques with feedback loops to estimate a linear model for the car's dynamics with encoders to ensure path reliability