Jerry Zhou

jerryzhou1011@gmail.com | jerryyzhou.com | linkedin.com/in/jerry-zh0u/ | github.com/jerry-zh0u

EDUCATION

University of California, Berkeley | GPA: 4.0/4.0 **May 2029**

- BS in Electrical Engineering and Computer Science, College of Engineering
- Relevant Coursework: Data Structures and Algorithms, Signals and Information Processing, Physics: Mechanics, Physics: Electricity and Magnetism, Linear Algebra, Multivariable Calculus

TECHNICAL SKILLS

Software: KiCAD, Altium, Fusion 360, Solidworks, Java, Scheme, SQL, Python, C/C++, HTML, CSS, MATLAB
Tools & Frameworks: JAX, MuJoCo, CoppeliaSim, Git, Numpy/Scipy, Pandas, PyTorch

EXPERIENCE

Biomimetic Millisystems Lab **Berkeley, CA**
Undergraduate Researcher supervised by Dr. Ronald Fearing & Dr. John Atkins *October 2025-Present*

- Developed **physics-based system identification models** for ultrasonic motors on a **7-DOF MRI-compatible robotic arm**, to accurately capture actuator dynamics in **CoppeliaSim**
- Implemented **backlash and hysteresis models** in Python using **quasi-linear and logarithmic fits** enabling parameter identification from experimental data
- Created **PD and impedance controllers with disturbance observers** to improve tracking robustness under load

Independent Contractor **Lake Forest, CA**
Test and Validation Engineer: ***Innovative Building Energy Control*** *December 2025-January 2026*

- Commissioned and verified **50+ two-layer isolated AC-DC PCBs**, debugging **power integrity, regulation stability, and MCU bring-up** using oscilloscope and multimeter
- Implemented **solar panel telemetry acquisition**, displaying real-time data on LCDs and transmitting via **Wi-Fi**

Formula Electric at Berkeley **Berkeley, CA**
Accumulator Electrical Engineer *September 2025-Present*

- Architected a **high-voltage four-layer segment-level BMS PCB** for a **140s3p accumulator**, enabling **fault-tolerant** cell voltage and temperature monitoring, cell balancing, and **high-voltage isolation**
- Integrated and debugged the segment board BMS with ADBMS chip, **isoSPI communication**, voltage sensing, and multiplexed temperature monitoring using resistor-divider emulation and **STM32 balancing firmware**.

Engineering Solutions at Berkeley **Berkeley, CA**
Engineering Consultant: ***Magnitude.io*** *September 2025-December 2025*

- Designed and built a **random positioning machine** to simulate microgravity conditions under a **$400 BOM**, generating randomized motion profiles using **Fourier-series-based and PRBS trajectories**
- Schematized and brought up **a custom two-layer control PCB** integrating an ESP32, motor drivers, sensors, and display interfaces (I2C, SPI, Bluetooth), with **24V-to-12/5/3.3V power distribution** for operation under load

First Robotics Competition Team 5805 **Rancho Santa Margarita, CA**
President & Software Lead *August 2023-May 2025*

- Directed **40+ member team** to design a **swerve-drive robot** with vision-based ARUCO tracking, pose estimation, and autonomous pick-and-place routines, achieving the team's **first regional victory in seven years**

PROJECTS

Analysis of K-D Trees and Quadtrees | *Java* ***March 2025***

- Developed custom k-d tree and quadtree classes with insertion, deletion, rebalancing, and nearest-neighbor search, benchmarking k-d trees as **7% faster** than quadtrees for dense and non-uniform 2D datasets

Trichroic Wavelength Division Multiplexer (WDM) | *Fusion 360, Arduino IDE* ***August 2024***

- Engineered a 3-port trichroic WDM using RGB lasers, photodetectors, and Arduino-based control, implementing custom communication protocols and data recovery algorithms, achieving **92% transmission accuracy**