Zimeng Xiong

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WORK EXPERIENCE

CAMBRIAN EXPLORER EDUCATION | Intern -> Teaching Lead

August 2024, August 2025 | San Jose, CA

- Proposed, developed, and taught a week-long 3D Printing and Additive Manufacturing curriculum for children aged 8-11.
- Developed company IP beyond curriculum scope, including 3D models of the company logo, artwork, and GSuite automation scripts for student enrollment and tracking.
- Deployed and managed outdoor 5G-backed WiFi infrastructure in a custom mini rack, providing filtered internet for 10+ laptops.
- Constructed a desktop injection molding machine and fabricated custom tooling using high-temperature resin.

ROBOTICS TUTOR

2 Sessions, June 2025 | San Jose, CA

- Temporary substitute tutor on software development for a team of 6 middle schoolers for the VEX Robotics competition. Taught version control practices with git and github, as well as developing basic odometry and movement.

FREELANCE WEB DESIGN | SWE

February 2024, June-present 2025 | San Jose, CA

- Built an MVP website for a real estate client, integrating a GSuite-based CMS and lead management automation.
- Generated over 100 leads in 6 months before client transitioned to a full Salesforce CRM and website solution.
- Client reached out after a year, now engaged in ongoing IT management, including kvCore brokerage CRM automation and Google Business profiles.

PROJECTS

FOSS AND PRINTABLES CONTRIBUTIONS

2020-Present, San Jose, CA

- I actively contribute to FOSS projects on GitHub (2.3k commits, 70+ stars, 14 accepted PRs) and frequently publish 3D models on Printables.com (1.3k+ saves & likes, 1.3k+ downloads).

NEURAL NETWORK FROM SCRATCH

June-August 2025

- Implemented a 3-layer neural network from scratch in Python and NumPy to classify MNIST handwritten digits, referencing only Wikipedia.
- Trained the model using gradient descent with stochastic manual backpropagation and cross-entropy loss.
- Achieved high classification accuracy on test images with a fully self-contained implementation.

MAKERCHIP ASIC DESIGN SHOWDOWN

June-August 2025

- Collaborated on a team to design and implement a TL-Verilog circuit for a competitive event, placing 3rd overall against international collegiate teams.

EDUCATION

DE ANZA COLLEGE

Dual Enrollment

BASIS INDEPENDENT SILICON VALLEY

Distinguished Honor Roll
National Honors Society Qualifier
1530 SAT 3.98/4.00 GPA

MIT LL BWSI

Dr. Bob Berman Award for Disruptive Engineering (14/ 400)

SKILLS

5+ years • Python • Markdown
2+ years • C++ • LaTeX
1+ years • Rust • Matlab • Swift

(SWE) Git • Debian/Arch/Nix • OSX • Markdown
(EE) Microcontrollers • SBCs • EasyEDA • Xilinx Vivado • Vitis HLS • OpenFlow
(Design Through Fabrication) Onshape • Orca/SuperSlicer • Klipper • CNC • 3D Printing
(Machine Learning) Pytorch • YoloV2 • Numpy

COURSEWORK

ADVANCED PLACEMENT

(All Fives)
Calculus AB
Statistics
Physics I
Chemistry
Computer Science Principles

CURRENT

Dual Enrollment Calculus III
Linear Algebra
AP Physics C Electricity and Magnetism
Organic and Biochemistry

BWSI

Intro to ASICs • Embedded Hardware and Hacking, Python, and Github Prerequisites

CLUBS/OTHER

Founder, President, 3D Printing Design and Mechanics
VP, Mathematical Modeling
Engineering&Design Lead, VEX Robotics

PROJECTS

PROTOBOT REBUILT FOR MACOS

June-August 2025

- Community maintainer/co-creator for the port of protobot-rebuilt, a VEX Robotics design software, to macOS. Fixed various incompatibility issues w.r.t keyboard shortcuts and Unity rendering for macOS. Recommended by the developer behind protobot-rebuilt as the ”macOS version”.

IEEE SCSS ARDUINO CONTEST

August 2025

- Led mechanical design for a 3-person team to build an accessibility guidance, using CAD to integrate slip rings for continuous rotation and hall effect sensors for calibration.
- Implemented multi-threading on an ESP32-S3 to maintain precise stepper motor timing while processing input from a head-mounted ultrasonic sensor and foot-mounted object detection camera using a self trained Edge Impulse model.

MIT BEAVERWORKS SUMMER INSTITUTE

July 2025 | Cambridge, MA

- Deployed and maintained containerized ARM-based Ubuntu VMs with VLSI tools for coursework, providing support for all 15 macOS users in the course.
- Collaborated to develop a ray-traced animation of a planetary system, implemented on an FPGA using Vitis HLS and a custom Verilog VGA controller.
- Gained hands-on fabrication experience in MIT Nano, using maskless photolithography and photoresist etching on silicon wafers–not an extensive research enviorment but more of a tour.

MACOS APP, RIGHT CLICK MENUBAR

May-June 2025 | San Jose, CA

- Developed an open-source native Swift app to display the macOS menu bar in a context menu at the current cursor position, achieving 32k+ reach, 500+ downloads, 19 stars, and 2 forks on GitHub.

ARDUINO MCP

May-June 2025 | San Jose, CA

- Created an MCP connector for Arduino enabling direct GPIO control via Large Language Models, gaining 25k+ views on social media and leading to an ongoing community collaboration.

CNC

May-June 2025 | San Jose, CA

- Designed and built a belt-driven CNC machine from scratch using repurposed 3D printer components, involving 80+ hours of CAD.
- Developed Python scripts to process DXF files and post-process Carbide Create G-code for compatibility with Klipper firmware, which was modified to add spindle and custom axis control. Published design on Printables, with 800+ saves/likes and an in-progress community user build.

3D PRINTER DESIGN, ASSEMBLY, AND MODIFICATION (VZBOT, VORON)

2022 – 2024 | San Jose, CA & Shenzhen, China

- Sourced all components and built multiple 3D printers from scratch (Vz330, Vz235, Voron 0.1/0.2), earning official VzBot serial numbers 26 and 262.
- Designed custom parts to integrate non-standard electronics and improve frame alignment; contributed an alignment tool to the official VzBot UserMods, one of the first VzBots built in North America, contributed to initial design of Vz330

3D PRINTER COMMUNITY FIRMWARE AND DOCUMENTATION

March 2020 - April 2021 | San Jose, CA

- Provided custom-compiled Marlin firmware for a Discord community, tailoring configurations and adding personalized bootscreens for members.
- Authored extensive documentation on topics from calibration to advanced firmware customization, read by 1k+ server members.
- Co-developed a Python ticket-management bot for the community server.