

Richard Liu

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Education

University of California, Berkeley 2025 – 2029

B.A. Computer Science; B.A. Cognitive Science

No. 2 High School of East China Normal University 2022 - 2025

High School Diploma

- **GPA:** 4.10/4.18, ranked 3/520
- **Coursework:** Completed 3-year Gaokao curriculum while concurrently enrolled in 11 AP courses. Scored 1550 in the SAT with a perfect score in the math section.

Experience

Co-Founder San Francisco Bay Area
PivotHire AI May. 2025 -

- Designed frontend websites and services using **Figma, Next.js and PostgreSQL**.
- **Developing, training, and refining models** for optimal freelancing talent matching.

Head of Engineering, Head of Outreach, Senior Advisor Shanghai
FIRST Robotics Competition Team #6353 Sep. 2022 - May. 2025

- Led the design of **6 mechanical systems in 3 years** using **Autodesk Inventor and Onshape**.
- Prototyped and manufactured using **CNC mills, drills, 3D printers, and laser cutters**.
- Led the **negotiation and landed an investment deal of \$80k/yr** from the district government, education bureau and national corporations.
- Organized **2 Shanghai regional club fairs** and **spoke at multiple promotional events on recruiting and engineering**.

Student Body Representative, Admissions Intern Shanghai
No. 2 High School of East China Normal University Sep. 2022 - May. 2025

- Organized **class visits and learning programs at corporations** including General Motors and Roche.
- Organized and spoke at **3 admission fairs with 800 participants each** on admissions and academics.

Projects

AI-Driven Handheld Navigation For the Visually Impaired

- **Problem:** 285 million visually impaired people worldwide lack accessible navigation tools
- **Solution:** Co-developed a voice-controlled app with compass-style haptic device for independent navigation
- **Traction:** Won ¥3,000 hackathon prize, currently in VC funding discussions
- **Tech Stack:** Python, C++, Next.js, React, ESP32, Computer Vision

AI-Driven Cryptocurrency Trading Bot

- **Problem:** 97% of day traders lose money, possibly due to emotional decision-making and market timing failures
- **Solution:** Co-developed a trading bot that analyzes and replicates successful trader patterns while removing emotional bias
- **Traction:** Secured \$8,000 funding from angel investors; discontinued due to issues with latency and model training
- **Tech Stack:** Python, C++, Next.js, JavaScript, PostgreSQL

AI-Driven Pet Health Collar

- **Problem:** Pet emergency visits average \$800-\$1,500, yet many health issues go unnoticed until crisis points
- **Solution:** Co-developed a smart collar using embedded ML to detect stress, seizures, and pain through biometric monitoring
- **Traction:** Raised \$1,000 initial funding; developed functional prototype with real-time health alerts
- **Tech Stack:** Python (NumPy, Pandas, PyTorch), Swift, JavaScript, Custom PCB Design

Research

Application of Multimodal AI in Robotics

Shanghai

Generalist Embodied AI Lab @ Tongji University

Jul. 2025 - Aug. 2025

- Studied and implemented Inverse Kinematics (IK) algorithms for quadruped and hexapod robots using computer vision-based embodied AI for object recognition and approach planning.
- Explored features including ML models that transform audio descriptions into object patterns, mapping routes for robots using CV, and determining leg movements using IK and routing.

Predicting U.S. Stock Market Closing Movement

Shanghai

Shanghai Jiao Tong University

Nov. 2023 - May. 2024

- Learned and developed a regression model using LightGBM to predict stock movement in the last 10 minutes of daily trading, based on real market quote and transaction data.
- Explored multidimensional features including order book dynamics, historical price trends, weighted averages, and price-spread combinations to reflect market microstructure and short-term price behavior.

Honors

- **USA Computing Olympiad (USACO)** - Platinum Division
- **International Olympiad in Linguistics China (IOLC)** - Individual Gold Medal, Team Silver Medal
- **National Olympiad in Artificial Intelligence (NOAI)** - Individual Silver Medal
- **Shanghai Professional Golf Competition (U18)** - 8th Place in the Annual Ranking
- **AdventureX 2025** - 2nd Place in Enhancing Life with AI Track

Skills

Programming: C++, Python, JavaScript/React/Next.js, Go, Java, APIs, LaTeX, Markdown

AI/ML: PyTorch, Computer Vision, NLP

Hardware: PCB Design, 3D Modeling (Inventor, Onshape), CNC Machining