Terence (Tianyi) Zhang
Harvey Mudd College | Claremont, CA | B.S. in Mathematics & Computer Science, Expected 2029
tianzhang@g.hmc.edu | (909) 282-4230

EDUCATION

Harvey Mudd College | *B.S. in Mathematics & Computer Science* | *Claremont, CA* **Expected 2029**
Relevant interests: machine learning, embedded systems, assistive technology, optimization, and theoretical computer science.

RESEARCH EXPERIENCE

Research Assistant | *Assistive Sensing & Embedded Systems Lab, with Prof. Anna Hickerson (KGI) (UIST 2026)* **2025 - Present**

- Developing a full-functional single-handed assistive controller for accessible gaming and human-computer interaction.
- Integrating IMU sensing, embedded firmware, on-device models, and FPGA-linked system components for robust real-time interaction.
- Iterating on end-to-end hardware and control pipelines to improve usability, reliability, and deployment readiness.

Researcher | *SeeingEye Multimodal Reasoning, with Prof. Jiaxuan You* | *University of Illinois Urbana-Champaign (NeurIPS 2026)* **2026**

- Built routing components for the SeeingEye workflow and ran experiments on multimodal reasoning benchmarks.
- Revised and optimized workflow stages to improve algorithm efficiency, information flow, and evaluation stability.
- Supported implementation and empirical analysis for agentic multimodal reasoning in text-only LLM settings.

Researcher | *Theoretical Machine Learning, with Prof. Zhao Song* | *Princeton University & Adobe Research* **2025 - 2026.3**

- Studied probabilistic and optimization properties of modern learning algorithms in theoretical machine learning settings.
- Worked on questions related to representation learning, generalization, and efficiency in large-scale models.
- Developed mathematical analyses and proof-oriented reasoning for research problems at the interface of theory and machine learning.

Independent Researcher | *Sign Language Translation System (IEEE ICAICE 2024)* **2023 - 2024**

- Designed a multi-stage sign language translation system mapping visual or noisy sensory inputs to structured textual outputs.
- Implemented computer vision and machine learning components under latency and hardware constraints.
- Evaluated trade-offs among accuracy, robustness, and computational efficiency in an assistive communication setting.

TECHNICAL SKILLS

Programming: Python, Rust, Java, C/C++, Racket
ML / DL: PyTorch, NumPy, model training, optimization, computer vision, representation learning
Embedded / Systems: STM32, IMU integration, FPGA prototyping, embedded firmware, sensor interfacing, prototyping
Math: Probability, statistics, optimization, algorithms, discrete mathematics

HONORS & COMPETITIONS

- Jane Street Estimathon - First Place
- USACO Platinum
- USAMO Qualifier (Index: 284)
- AIME 14
- AMC 12: 144
- Top 0.5% in Shanghai National College Entrance Examination