

JUSTIN LUO

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Highly motivated Computer Science major at Caltech with a strong foundation in mathematics and engineering. Actively seeking opportunities to contribute to technology development with real-world applications.

EDUCATION

California Institute of Technology (Caltech), Pasadena, CA
Major in Computer Science w/ Minor in Robotics Mathematics

September 2023 — Present
GPA 4.04 out of 4.0

SKILLS

- **Platforms:** Python, C++, C, Java, React, OCaml, CUDA, GLSL, OpenGL, Matlab, Git, PyTorch, TensorFlow, MuJoCo, Blender, ROS, Kubernetes, Docker, Linux & Windows Sysadmin
- **Concepts:** Learning Systems, Data Mining, Deep Learning, Large Language Models, Software Design, Algorithms, Computer Systems, Robotics, Reinforcement Learning, Computer Vision, Graphics, Parallel Computing, Real Time Simulation

AWARDS & ACCOLADES

- Putnam Top 300, 4x AIME Qualifier
- IMC Prosperity 12th Place
- USA Computing Olympiad Gold, Cyberpatriot Cybersecurity National Finalist
- USA Physics Olympiad Semifinalist
- Eagle Scout

WORK EXPERIENCE

Teaching Assistant

California Institute of Technology

ME/CS/EE 129 - Experimental Robotics

Spring 2025

Guiding small groups in creating an automated exploration robot, integrating sensors and implementing interrupt-driven and multi-threaded architectures in the graduate level course.

CS 12 - Introduction to Prototyping

Winter 2025

Assisted 50+ students in designing and creating an open-ended project, providing a foundational experience in prototyping.

ME 8 - Introduction to Robotics

Fall 2024

Led 40+ students in designing a fully autonomous camera & arm system, requiring teaching proficiency in Python and CAD. Responsible for guiding several teams in achieving success in the project-based course.

RESEARCH EXPERIENCE

Research Internship w/ UCSD Su Lab

San Diego, CA

Research Intern

Summer 2025

Engineering algorithms for task-aware mesh decomposition and grasp detection on objects for a RL manipulation environment. Contributing to Maniskill, a comprehensive RL manipulation training library developed by the Su Lab.

Undergraduate Research w/ Caltech Perona Lab

Pasadena, CA

Undergraduate Researcher

Summer 2024

Researched the novel use of Reinforcement Learning (RL) to generate synthetic datasets for point tracking in the Perona Vision Lab. In-house research grant awarded by the Caltech SURF Fellowship. Presented at CVPR CV4Animals 2025.

Research Project w/ Dr. Makoto Miyakoshi @ UCSD

San Diego, CA

Research Assistant

September 2021 — April 2023

Researched the reliability, durability, and performance of ICA, an advanced algorithm used for EEG processing and other signal analysis applications. Published into Frontiers in Computational Neuroscience: <https://doi.org/10.3389/frsip.2023.1064138>.

ACTIVITIES & ORGANIZATIONS

Caltech Quantitative Finance Club

September 2023 — Ongoing

Caltech Robotic Manipulation Club

September 2024 — Ongoing

Caltech Orchestra & Wind Orchestra / Percussionist

September 2023 — Ongoing