

Samantha Chang

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EDUCATION

CALIFORNIA INSTITUTE OF TECHNOLOGY (CALTECH)

G.P.A 4.0 / 4.0

Pasadena, CA

Sept 2024 – Dec 2027

Major: Computer Science, Double Minor: Robotics, Control and Dynamical Systems

- Relevant coursework: Projects in Robotics, Experimental Robotics, Linear Systems Theory, Optimal Control and Reinforcement Learning, Machine Learning, Learning Systems, Data Structures, Algorithms

ARTCENTER COLLEGE OF DESIGN

Dual-enrolled. Relevant coursework: Intermediate Interaction Design, Rapid Prototyping

Pasadena, CA

Jan 2026 - Present

EXPERIENCE

Research Assistant | Advanced Mechanical Bipedal Robotics Lab @ Caltech

Mar 2026 - Present

- Work on improving ball-catching capabilities of a Unitree G1 humanoid robot
- Use SAM2 and OpenCV for vision and motion sensing

Software Engineering Intern | Apple

June 2026 - Aug 2026

- Incoming Summer 2026 on the Activity+Fitness Team

Captain and Programming Lead | FIRST Robotics Competition

Aug 2020 - Mar 2023

- Led the 100+ person team, which included managing the technical documentation and team communication in 2023
- Worked closely with the electrical, mechanical assembly, CAD design, and manufacturing subteams
- Programmed the **autonomous control and perception systems in Java**, leading the Programming subteam in 2022
- Set up several **control and vision test benches** to mentor students in analysis with NI LabVIEW and camera image processing pipelines for real-time object tracking
- Won the Beach Blitz Competition (2022), Los Angeles Regional competition (2023), and the Archimedes division (**Top 24 team**) at the **World Championships** (2023); finalist at the Tidal Tumble Competition

Project Lead | Lemelson-MIT InvenTeam

Aug 2022 - June 2024

- Led a team of 15 students, managing the technical documentation and communicating with the team
- Integrated **ultra-wideband, LiDAR, infrared, and Bluetooth sensors** with an A* navigation algorithm (C++)
- Optimized signal accuracy and obstacle detection by developing custom housing for Bluetooth receivers
- Assembled the electrical system, assisted in design with CAD, manufactured parts from our in-house machine shop
- Secured **\$7,500 funding** from MIT and presented our project at MIT's EurekaFest

Artificial Intelligence (AI) Intern | Cedars-Sinai Medical Center

June 2025 - Sept 2025

- Built an LLM pipeline to transform unstructured clinical note data into structured data for hospital analytics
- Developed a web app for the LLM pipeline using **HTML/CSS + JavaScript, Python, and Sanic** for physician and data analyst use, simplifying workflows exponentially
- Validated pipeline on 50,000+ patient notes with over a **97% accuracy** across different disciplines
- Integrated solution into live hospital systems using SQL, AWS S3, and Azure for physician use

Programming Lead | VEX AI Robotics Competition

Aug 2019 - June 2021

- Developed an autonomous perception system with cameras and infrared using PyTorch on an NVIDIA Jetson
- Won Top 6 at the World Championships in the fully autonomous robotics competition

SKILLS AND AWARDS

Languages: ROS, Python, LabVIEW, C++, C, Java, Swift, MATLAB/Simulink, R, JavaScript, HTML/CSS

Other Technical Tools/Skills: TensorFlow, scikit-learn, PyTorch, reinforcement learning, CAD (SolidWorks, Autodesk)

Awards:

- **Apple Swift Developer Challenge** – Winner (2022)
- **FIRST Robotics World Championships** – Archimedes Division: Top 24 Worldwide (2023)
- **FIRST Robotics Competition** - Los Angeles Regional Winner (2023), Beach Blitz Competition Winner (2022), Tidal Tumble Competition Finalist (2022)
- **VEX AI Robotics World Championship** – Top 6 Worldwide and Think Award Winner (2021)
- **NCWIT Aspirations in Computing** – LA County Winner (2021–2023), National Mention (2022)