Samantha Chang

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EDUCATION

CALIFORNIA INSTITUTE OF TECHNOLOGY (CALTECH)   **Pasadena, CA**
G.P.A 4.0 / 4.0   *Sept 2024 – Dec 2027*
Major: Computer Science, Double Minor: Control and Dynamical Systems, Robotics
- Relevant coursework: Projects in Robotics, Experimental Robotics, Nonlinear Control, Linear Systems Theory, Optimal Control and Reinforcement Learning, Machine Learning, Learning Systems, Data Structures, Algorithms

ARTCENTER COLLEGE OF DESIGN   **Pasadena, CA**
Dual-enrolled. Relevant coursework: Intermediate Interaction Design, Rapid Prototyping   *Jan 2026 - Present*

EXPERIENCE

Research Assistant | *Advanced Mechanical Bipedal Robotics Lab @ Caltech*   *Mar 2026 - June 2026*
- Incoming to work on project regarding control systems for humanoid robots for academic units

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 Student 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)