Aijia (Annie) Yang

annieyaj@outlook.com | +1 (253) 203-5337 | San Diego, CA | https://www.linkedin.com/in/annie-aijia-yang/

ABOUT ME

Innovative and detail-oriented engineer with experience in robotics software development, control systems, and mechanical engineering. Adept at collaborating within multidisciplinary teams to deliver efficient, high-quality solutions on time and within scope. Proactive in problem-solving and skilled at incorporating new technologies to enhance system performance.

EDUCATION

University of California San Diego, CA **Expected June 2028**
B.S. Mechanical Engineering with Specialization in Controls & Robotics
B.S. Math-Applied Science with Focus on Computer Science and Mechanical Engineering

- Provost Honors, Junior Standing, GPA: 3.98
- The Safe Autonomous Systems Lab, IEEE-HKN Engineering Honors Society, Triton Robotics, Association for Computing Machinery (ACM), MAE Scholars, Apple Next-Gen Innovator Program, HackMIT 2025

SKILLS/AWARDS

Software: Java, Python, MATLAB, ROS2 Robot Operating System, Linux, PyTorch, Docker, Figma
Mechanical: Onshape, Fusion 360, AutoCAD, Solidworks, ANSYS, FEA, 3D Printer, Laser Cutter, Design for Manufacturing
General: Microsoft 365 (Word, Excel, PowerPoint, Outlook, Teams), Adobe Creative Suite (Photoshop, Illustrator, InDesign)
Awards: AIME qualifier, Washington State Science and Engineering Fair overall 2nd place, 30th Int'l Space Settlement Design Competition global champion
Languages: English, Mandarin, Spanish (conversational)

EXPERIENCE

Research Assistant **January 2025 - Present**
The Safe Autonomous Systems Lab, San Diego, CA (https://sylviaherbert.com/)

- Co-Author of paper submission to IEEE International Conference on Robotics and Automation titled "MADR: MPC-guided Adversarial DeepReach" (https://land-dev.github.io/madr/)
- Set up coding pipeline in the Robot Operating System (ROS2) and Python for performing robot hardware experiments.
- Extended infrastructure from single-agent to multi-agent robot interactions to test safe control policies using model-predictive control, deep learning, and reachability analysis.
- Performed hardware experiments on multiple Crazyflie UAVs, ground robots (Turtlebots), and humanoid robots.

Mechanical Engineer **September 2024 - Present**
Triton Robotics, San Diego, CA (https://tritonrobotics.org/)

- Designed and fabricated nucleo mounts and protective covers to safeguard Arduino electronics on the "Infantry" robot during live-shooting competition scenarios.
- Manufactured critical robot components using laser cutting, 3D printing, and waterjet techniques for the 2025 RoboMaster North America Competition.
- Engineered battery shields and exterior armor for 3v3 "Infantry" robot using SolidWorks, enhancing durability and on-field performance.

PROJECTS

Reflourish (Food Waste Reduction Web Application) **September 2025**
Massachusetts Institute of Technology, MA (https://hack-mit-2025-tau.vercel.app/)

- Developed a full-stack food waste reduction platform using React, Python, Firebase, and SQLite, deployed via Vercel and Railway, enabling real-time coordination between volunteers, stores, and food banks.
- Implemented gamification features (points, leaderboards, badges) and AI-powered data trend analysis to increase user engagement and optimize food redistribution.

Earthquake Wonders: High School Investigation in Mortise-Tenon Structure **September 2022 – April 2023**
Charles Wright Academy, Tacoma, WA (publication: http://dx.doi.org/10.54254/2753-8818/9/20240718)

- Investigated how mortise-tenon structures reduce earthquake vibration by generating frictional damping.
- Proved that mortise-tenon structures reduce vibration by 11.0% compared to screw and glue structures.
- Developed and validated an innovative low-cost sensor system with accessible tools.