

Aijia (Annie) Yang

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ABOUT ME

Innovative and detail-oriented engineer with experience in robotics, software engineering, and mechanical engineering. Adept at collaborating within multidisciplinary teams to explore safe, 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. Mathematics-Applied (Computer Science Focus)

- Provost Honors, GPA: 3.97
- The Safe Autonomous Systems Lab, Apple Next-Gen Innovator Program, Tau Beta Pi Engineering Honors Society, Triton Robotics, Society of Women Engineers (SWE), MAE Scholars, Association for Computing Machinery (ACM)
- Courses: Linear Circuits, Probability, OO/System Programming, Vector Calc, Linear Algebra, Math Reasoning

EXPERIENCE

Research Assistant

January 2025 - Present

The Safe Autonomous Systems Lab (<https://sylviaherbert.com/>)

San Diego, CA

- Co-Author of paper accepted 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 (<https://tritonrobotics.org/>)

San Diego, CA

- 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

Interstellar Robotics

September 2025 – December 2025

UC San Diego Mechanical and Aerospace Engineering Department

San Diego, CA

- Designed, fabricated, and tested a fully functional competition robot capable of scoring all game elements (asteroids, meteors, and comets) in a class-wide robotics competition.
- Analyzed and integrated mechanical and robotic components to optimize performance, reliability, and scoring efficiency under competition constraints.

Earthquake Wonders: High School Investigation in Mortise-Tenon Structure

September 2022 – April 2023

Charles Wright Academy (publication: <http://dx.doi.org/10.54254/2753-8818/9/20240718>)

Tacoma, WA

- 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.

SKILLS/AWARDS

Software: Java, Python, MATLAB, ROS2 Robot Operating System, Linux, #C, 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/Activities: TBP Vice President External, AIME, WA State Science & Eng Fair 2nd place, 30th ISSDC champion

Languages: English, Mandarin, Spanish (conversational)
