

Ashley Cheung

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EDUCATION

Harvey Mudd College, Claremont CA

B.S. in General Engineering, Concentration in Theatre

September 2019 - Present

SKILLS

- SolidWorks, Vectorworks, Adobe Photoshop, Adobe Illustrator, Python, Microsoft suite
- 3D printing, laser cutting, machine shop

EXPERIENCE

Harvey Mudd Clinic (Amazon Lab126), Claremont CA — *Engineer*

September 2021 - Present

- Led construction of robot to autonomously navigate household environments and collect audio data.
- Developed software to move omnidirectional robot smoothly using mecanum wheels in a specified direction.
- Utilized vision based localization algorithm that recognizes AprilTags to calculate position and rotation.

Pomona College Scene Shop, Claremont CA — *Carpenter*

September 2021 - Present

- Collaborated to create scenic elements for shows such as *Circle Mirror Transformation* and *House of Desires*.
- Built and painted set pieces including arches and planters while learning shop tools and safety procedures.

Mudd Makerspace, Claremont CA — *Head Steward*

September 2021 - Present

- Met with leadership team to work on administrative duties, outreach, and improvements to the space
- Staffed student-led makerspace by helping students find and safely use tools such as laser cutter, 3D printer, waterjet cutter, sewing machines, and various hand tools.

PROJECTS

Connect 4 Robot

September 2021 - Present

- Designing and building robot to autonomously play Connect 4 against humans.
- Prototyping mechanical elements to dispense chips from a storage unit, transport them to columns, and drop them in slots.

Treasure Chest Prop Replica

October 2019 - Present

- Creating working replica of Davy Jones' chest from *Pirates of the Caribbean* movies.
- Designing dynamic components and aesthetic elements that match on-screen appearance and movement of the prop.

Mudd Advanced Rocketry Club

February 2021 - Present

- Leading rocketry subteam responsible for structural components (body tubes, fins, nosecone) of a dual deploy rocket designed to fly to 25,000 ft at the Friends of Amateur Rocketry competition in 2022.
- Simulating flight to predict apogee and find component geometries and materials to optimize parameters.
- Coordinating logistics with other subteams (avionics, propulsion, recovery, and payload) to integrate each subsystem into the overall design.
- Teaching underclassmen basics of rocketry, 3D modeling in SolidWorks, and flight simulations.

Escape Room

January 2020 - Present

- Leading college sponsored escape room club (MuddEscapes).
- Prototyping and building puzzles with laser cutter, 3D printer, and machine shop tools for an hour long space themed escape room to be played by hundreds of other students.
- Designing and building temporary walls to divide a classroom into multiple sections to be progressed through during the experience.

Solar Panel Smoothie Cart

September 2020 - Present

- Leading design and manufacturing of a solar powered smoothie cart to encourage and learn about sustainability through engineering.
- Modeling and analyzing geometry and strength of design with SolidWorks.
- Organizing design files through GrabCad and spreadsheets.