Lorenzo Shaikewitz

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Education

California Institute of Technology '23
Expected Major: Mechanical Engineering
Expected Minor: Control and Dynamical Systems

Relevant Experience

Researcher, Caltech AMBER Lab (summer '20 - present)

Supporting research into novel controls and robotics with Dr. Aaron Ames at Caltech.
Currently designing a sleek powered ankle exoskeleton to reduce the energy cost of walking.

- Analyzed existing system's physics using static Solidworks simulation to optimize design and assist with control.
- Redesigned electronics mounting for modularity, efficiency, and user comfort with custom PCB.
- Built MATLAB simulation and wrote scripts to test controls and show design potential.

Team member, Caltech Robotics Team ('19 – present)

Part of a team that builds autonomous underwater submersibles and routinely wins prizes.

- Developed a completely mechanical self-propelled torpedo and launch system.
- Designed an easy-access battery pod for the team's entry into the Robosub competition.
- Currently working on a miniature, self-guided torpedo system with autonomous navigation and data collection.

Skills

- Solidworks CAD software
- Programming (Arduino, C++, MATLAB, Python)
- 3D printing (PLA)
- PCB design (Altium)

Key Courses

- Mechanics ('20 - '21)
- Thermal Science ('20 - '21)
- Mechanical Machining (Fall '19)
- Mechatronics (Fall '19)

Honors & Awards

Semi-finalist, Perpall Speaking Competition (Fall '20)
Amateur Radio License, Technician Class ('18)

Additional Activities & Interests

Volunteer, Caltech Science Olympiad ('19 – present)

Wrote for detector building, regional and state competitions; graded mechatronics.

Team member, PARSEC—Caltech Rocketry ('19 – present)

FAR MARS competition to become the first university team to reach low-Earth orbit with methane-based liquid fuel.
Designing a launch valve control board in Altium.

Ultimate Frisbee ('19), **Captain** ('20 – present)

High School

Jordan Rocketry ('15), **Captain** ('16 – '19)

Designed and built model rockets with electronic payloads from scratch.

- Led design and programming of autonomous lander that won Battle of the Rockets competition.
- Competed against university teams to deploy a lander, take pictures, and transmit data.