EMILY WANG

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EDUCATION

Stanford University — September 2022 to June 2024 — Stanford, CA
Master of Science in Mechanical Engineering, Concentration in Mechatronics
ME218 Series Course Assistant
GPA: 3.95/4.00

Carnegie Mellon University — August 2018 to May 2022 — Pittsburgh, PA
Bachelor of Science in Mechanical Engineering, Minor in Design
GPA: 3.97/4.00

RELEVANT EXPERIENCE

Square — June 2023 to September 2023 — Oakland, CA
Hardware Product Design Intern
- Redesigned and performed DFM on an existing part for die-casting, reducing costs by 60%.
- Prototyped new products in CAD and created interaction models using 3D printing.
- Created a fixture for the electrical team's board development.

Seismic — July 2022 to September 2022 — Menlo Park, CA
Mechanical Engineering Intern
- Tested and troubleshooted mechanical and electrical problems of the production garments.
- Communicated with vendors about cable harness and connector options.
- Designed and programmed a motor test fixture.

Apple — June 2021 to December 2021 — Cupertino, CA
iPhone Product Design Intern
- Collaborated with materials, interconnect, and antenna teams to develop future technology.
- Designed various parts for the button system utilizing tolerance analysis.
- Created and released part and assembly drawings in NX to vendors.
- Performed competitive analysis and teardowns on current smartphones in the market.

CMU Biohybrid and Organic Robotics Group — May 2020 to December 2020 — Pittsburgh, PA
Mechanical Engineering Research Fellowship
- Explored 3D printed soft robot (MetaBOT) dimensional parameters using FEA in ANSYS.
- Analyzed trends within simulation data and added them to an IROS 2020 paper submission.
- Developed a MATLAB script to output MetaBOT dimensions based on desired gait paths.

PROJECTS & LEADERSHIP

Lighting PIC-Queen, A Remote Controlled Battle Boat — Spring 2023
ME218C: Smart Product Design Final Project
- Designed a high-speed wireless RC boat and controller with a voice-controlled balloon popper.
- Implemented a class-wide UART-based communication protocol using Xbee radios.

Haptic Row Boat Simulator — Spring 2023
ME327: Design and Control of Haptic Systems Final Project
- Built haptic oars to simulate the row boat experience with tactile feedback along.
- Developed a velocity-based control loop to translate magnetoresistive sensor readings into force feedback to simulate rowing oars in a flowing river using Simulink.
- Used a dynamics model to graphically represent the boat's position and orientation.

SlashSlash, A Wall-pushing Sumo Bot — Winter 2023
ME218B: Smart Product Design Final Project
- Created an autonomous robot that uses event driven software to compete with another robot in a lane based sumo game.
- Designed a drivetrain for the robot with 3D-printed two-stage transmission gearboxes.
- Implemented framework for SPI communication between three PIC32 microcontrollers to process sensor data, motor control, and game logic.

MANTA, An Automatic Bike Gear Shifter — Spring 2022
Carnegie Mellon University Mechatronics Senior Capstone
- Designed and prototyped a retrofittable automatic and manual bike gear shifter that would shift gears based on riding conditions and user specifications, with visual indicators.
- Successfully road-tested product and improved parameters and UI based on experimental data.
- Won "Best Overall Project" at CMU MechE Design Expo and "Most Engaging" at the CIT Techspark Expo.

Kingfisher, Buggy 25 — Summer 2019 to Spring 2020
Carnegie Involvement Association (CIA) Build Lead
- Led the entire design and construction process of a human-powered carbon fiber racing vehicle (buggy) for an annual university engineering and athletic racing competition.
- Innovated on traditional shell concepts to increase aerodynamic performance using CFDs.

SKILLS

Mechanical: Solidworks, PTC Creo, NX, ANSYS Mechanical, GD&T, DFM, CNC Machining, 3D Printing, Prototyping
Embedded: SPI, UART, ADC, PIC Microctonrollers, Arduino, Oscilloscope, Soldering,
Software: C, Python, MATLAB, Assembly