Luisa Chiu
San Francisco, CA | (415) 819-7248 | luisachiu1@gmail.com | https://luisaschiu.github.io/

EDUCATION

California Polytechnic State University, San Luis Obispo, CA — Graduated September 2024

- Bachelor's and Master's Degree in Mechanical Engineering, Concentration in Mechatronics, 3.86 GPA
- Minor in Computer Science

EXPERIENCE

Associate Robotics Solutions Engineer, **Johnson and Johnson Medtech** — Apr 2025 – present

- Led system-level debugging to restore robotic functionality critical to meeting program deadlines
- Diagnose and resolve system issues through real-time log analysis to ensure uptime in clinical labs
- Conduct field operations, including system installation, de-installation, and functional testing
- Collaborate with cross-functional engineers to troubleshoot and optimize system performance

Applications Engineering Intern, **Yaskawa America, Inc. – Drives and Motion Division** — Jul 2022 – Sep 2023

- Developed motion control function blocks using SLERP to prevent singularities in robotic path planning
- Tested function block performance using path calculation and pick-and-place application for a 6-DOF robot arm
- Audited code by analyzing and testing existing function block code and documenting bugs and inconsistencies
- Programmed PLC's using MotionWorksIEC to develop over 200 test cases for a new controller release
- Assembled test stand for controller prototype using motors, servo drivers, and other electronic components

PROJECTS

Master's Thesis: Dynamic Maze Puzzle Navigation using Deep Reinforcement Learning — Sep 2023 – Sep 2024

- Developed a computer vision robot pose estimation algorithm using OpenCV and ArUco markers
- Conducted research on autonomous mobile robot navigation and deep reinforcement learning algorithms
- Implemented Deep Q-Learning in a maze environment simulation using TensorFlow, matplotlib, NumPy, etc.

Algorithm Development for an Autonomous Mobile Robot — Sep 2023 – Dec 2023

- Developed code in C for a microcontroller to interface with IR sensors, range sensors, and servo motors
- Created simulation for a robot to localize itself and knock over target towers using Monte Carlo localization
- Developed line-following algorithms using proportional control and convolutional neural networks (CNNs)

Automated Produce Slicer Machine — Sep 2022 – Dec 2022

- Developed code in C++ for an ESP32 microcontroller to control motors, sensors, and limit switches
- Ensured accurate timing execution through implementation of a real-time operating system using FreeRTOS
- Collaborated on a PCB (printed circuit board) designed for project application using Autodesk Eagle
- Designed 3D printed parts through CAD modeling with emphasis in tolerancing for clearance and press fits

Interdisciplinary Senior Project: Bike to the Future — Sep 2021 – Jun 2022

- Designed sensor feedback system with a focus on usability and functionality for a visually impaired biker
- Integrated LiDAR and ultrasonic sensors for object detection, with tactile and audio feedback to alert the user
- Created and iterated 3D-CAD models of project assembly containing over 20 parts using SolidWorks
- Produced a comprehensive instructional and informative video to guide customer in product assembly and use

Ball Balancing Platform — Sep 2021 – Dec 2021

- Simulated closed-loop motor speed control using MATLAB and Simulink to efficiently find P-controller gains
- Developed Python code for STM32 microcontroller to interact with motors, IMU (I2C), and resistive touch panel
- Designed the multitasking program structure through implementation of task diagrams and finite state machines

ACTIVITIES

Member, **Society of Women Engineers** — Sep 2018 – present
Member, **Cal Poly ASI Intramural Sports Teams (volleyball, flag football)** — Sep 2018 – Jun 2023
Orientation Leader, **Cal Poly SLO New Students and Transitions: Week of Welcome** — Jan 2021 – Sep 2021

SKILLS

Programs: SolidWorks, MATLAB (Simulink), Autodesk Eagle, LTspice, AutoCAD, Arduino, ROS/ROS2
Programming Languages: Python, C++, C, Java, Bash
Other: Computer Vision, 3D Printing, Drafting (GD&T), Prototyping, Manufacturing (CNC mill, lathe, welding)