Aaron Tran

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EDUCATION

University of Michigan **Ann Arbor, MI**
*Candidate for Master of Science in **Robotics*** April 2024
GPA: 4.00/4.00
Coursework: Linear Systems Theory, Linear Feedback Systems, Robot Learning for Planning and Control, Mobile Robotics, Programming for Robotics, Math for Robotics

California Polytechnic State University, San Luis Obispo **San Luis Obispo, CA**
*Bachelor of Science in **Mechanical Engineering,** concentration in **Mechatronics*** March 2022
GPA: 3.94/4.00
Coursework: Robot Kinematics and Dynamics, System Dynamics, Control Systems Design

SKILLS

Programming Languages: C++, Python, MATLAB
Frameworks: ROS2, lcm, MoveIt, Klamp't , PyTorch, OpenCV, NumPy, Jax, Carla, RTOS
Hardware: Arduino, STM32, Raspberry Pi, UART
Other: Linux, Git, Docker, SolidWorks, OnShape, Inventor

WORK EXPERIENCE

EverestLabs.ai **Fremont, CA**
Robotics Intern May 2023 – August 2023
- Develop robot grasp detection model, optimizing for minimal Type I and Type II error
- Generate pressure dataset and design/build associated software, hardware to support data collection and labeling
- Develop ROS2 pipeline for online brand detection and data storage

Winslow Automation **Milpitas, CA**
Automation Engineering Intern May 2022 – August 2022
- Program PLC to automate pin cutting process
- Collaborate with quality engineers to troubleshoot manufacturing issues
- Rapidly prototype visual inspection module for part defect detection

Lawrence Livermore National Laboratories **Livermore, CA**
Defense Technologies and Engineering Division Intern June 2021 – October 2021
- Collaborate with team to design and build test diagnostic assembly fixture
- Validate and sign off on drawings for high precision tooling
- Perform stress analysis to validate safety of lift fixture

PROJECT EXPERIENCE

Real-time Motion for Eye Imaging Robot – UMich Image Guided Medical Robotics Lab September 2023 to Present
Goal: Design motion planning algorithm for collision free tracking using a robot arm
- Write multiple motion planners considering dynamic and obstacle dense environments
- Implement simulator to benchmark motion planners
- Integrate motion planners ensuring real time performance

Hydraulically Powered Exo – UCSF BioRobotics May 2023 to August 2023
Goal: Design an exo that can be used under strong magnetic fields to allow for brain signal analysis during use
- Build data collection and analysis pipeline with Arduino and Python
- Implement online admittance controller on Arduino MEGA

Autonomous Differential Wheel Robot – Student Team Project February 2023 to April 2023
Goal: Program a differential wheel robot to autonomously navigate a maze
- Design and implement cascade PID control loop for waypoint following
- Implement particle filter and occupancy grid mapping using log odds for localization and mapping
- Write A* path planning algorithm for global path planning