Yuen Lam Leung (Janie)
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Final-year Robotics Engineering student skilled in various robotics system, including industrial robots, autonomous mobile robots, and legged robots. With strong technical skills and sales instincts, I deliver prompt, high-quality results, and collaborative solutions with enthusiasm and trainability.

EDUCATION

Worcester Polytechnic Institute, Massachusetts, USA May 2023

- B.S in Robotics Engineering, minor Computer Science, GPA 3.92/4.0
- Honors: Dean's List Fall 2019, Spring 2020, Fall 2020, Spring 2021
- Organization: International Student Council Cabinet, Tau Beta Pi Engineering Honor Society

Chatham Hall, Virginia, USA May 2019

- GPA 4.0/4.0
- Honors: Cum Laude Society, National Honor Society, Rector's List 2017, 2018, 2019
- Leadership: FIRST Robotics Team Captain, Main Coder

PROJECTS

Bimodal Quadruped Robot, WPI Major Qualifying Project Aug 2022 – Present

- Work with a team of 4 using Scrum framework to develop dynamic control and perception for a bimodal quadruped robot
- Implement Model Predictive Control (MPC) and Whole Body Control (WBC) to improve robot maneuverability, adding 4 extra degrees of freedom with 4 new hip joints, expanding robot capability with turning and walking on sloped surface
- Assist in implementing robot vision to allow environment mapping, object detection, and path planning
- Fabricated components with a CNC lathe and assembled 12 actuator modules for improved robot
- Organized grant proposal and communicated with sponsors, successfully raised $1050 external funding

AWS-hosted Crowdsourcing Platform in React.js, WPI Oct 2022– Jan 2023

- Led an Agile team to design and develop a crowdsourcing website similar to Kickstarter
- Distributed back-end development tasks and monitored weekly progress, consistently meet 90-100% weekly iteration goals
- Reviewed and guided back-end API and Lambda development, bridged communication between back end and front end
- Created front-end interface using React framework and designed user interface (UI) using CSS.

Vision-based Manipulation: Active Vision, WPI Aug – Oct 2022

- Achieved stable grasp synthesis on object with a parallel gripper in Gazebo simulation environment and ROS2 using Active Vision and 3-D Point Cloud Stitching
- Designed and implemented data preprocessing pipeline for object surface segmentation: Voxel Downsampling, Distance Thresholding, and RANSAC Algorithm, ensured processed data are accurate for grasp planning

Robot Navigating Unknown Map with SLAM in ROS, WPI Oct 2021 – Jan 2022

- Achieved autonomous map exploration and navigation by integrating 2D grid-based frontier exploration and SLAM GMapping algorithm in ROS
- Implemented A* path planning and configuration space calculation for obstacle avoidance using Python, optimized navigation performance by streamlining ROS node communication, allowing robot to quickly plan a shortest and least-turns path to destination

Ball sorting system using 3-DOF robot manipulator, WPI Aug – Oct 2021

- Taught robot to identify different colors by designing and implementing image processing pipeline, and sorted colored-balls using forward and inverse kinematics trajectory planning
- Programmed and designed the system architecture and finite state machine of 3-DOF robotic manipulator ball sorting system in MATLAB

WORK EXPERIENCE

Website Developer, Hub for the Future in Action #G12 Boxbrary, Hong Kong May 2022 – Jan 2023

- Developed an interactive website for a short-term lunchbox lending service at the University of Hong Kong, allowing university students to borrow and return reusable lunchbox
- Created a return platform using QR code API for partnering restaurants and designed a web interface for clients to submit order request
- Built a backend order tracking system for partnering restaurants in Google Sheets, providing a platform for clients to keep track of records

R&D Intern, SquareDog Robotics (formerly Welbot Technology), Hong Kong Jun – Aug 2021

- Designed and developed an automated solution for document transportation in office using Mobile Industrial Robot (MiR) and Universal Robotics cobots (UR10e)
- Assisted in sales and handled business inquiry by communicating with clients and presenting automated solution in SOLIDWORKS, successfully facilitated 3 projects in 2 months
- Created bilingual user manual on operating industrial welding robots, guiding clients on how to operate products with the company's software

Summer Intern, Freedom Communications Ltd., Hong Kong Jul – Aug 2018

- Assisted in website development for digitization of a magazine archive with HTML and CSS, digitized 120 magazines and stored them on an online archive
- Assisted in marketing 3D printing and Virtual Reality products in 2018 Hong Kong Book Fair

SKILLS

Technical Skills ROS/ROS2, Linux, C++/C, Python, Java, Amazon Web Service (AWS), JavaScript (ReactJS, NodeJS), HTML, CSS, CAD (Solidworks), MATLAB, CNC Machining
Languages Fluent Cantonese, Mandarin, English; Intermediate German
Art Technology Adobe Photoshop, Adobe InDesign, Microsoft Word, Microsoft Excel