Ching-Yang (Austin) Huang

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SUMMARY

Motivated problem solver specializing in Robotics, Mechanical Engineering, and Computer Vision. Austin's experience spans academia and industry, including impactful projects at the National Institute of Health (NIH) and research contributions at Johns Hopkins University. He possesses deep knowledge of both software and hardware domains, and he brings a blend of technical excellence and cross-functional collaboration skills. He is now actively seeking for 2024 full-time positions.

SKILLS

- Tools: Python, C++, C#, Matlab, ROS, Gazebo, Unity, MRTK, Creo, Femap, Git, Linux, Ubuntu, Arduino, Jira, Notion.

EXPERIENCE

Axle Informatics, Rockville, MD, United States
Automation Research Associate, *Internship* *September 2023 – December 2023*

- Spearheaded the integration of a groundbreaking robotic system comprising Omron mobile robots, PF400 robot arms, and High-Density Storage (HDS) at NIH, resulting in a 37% improvement in laboratory process time.
- Built the HDS from scratch using Creo, advancing to fabrication by 3D Printing and modular components integration, ensuring adaption for diverse environments and compatibility with both human and robot operations.
- Enhanced the HDS detection accuracy from 53% to 98% by strategic modifications to image preprocessing filters and implementing advanced shape detection algorithms using OpenCV and Python.
- Led and conducted rigorous strength validation of the HDS mechanism using Femap, ensuring operation robustness.

Laboratory for Computational Sensing and Robotics, Johns Hopkins University
Research Assistant, *Advisor: Russell Taylor* *May 2023 – September 2023*

- Optimized Malaria Vaccine production system setup time by 62% by leveraging Deep Learning in Computer Vision.
- Enhanced ROI detection accuracy to 96% using YOLOv5 and implemented Class Activation Mapping by PyTorch to discern mosquito attributes, improve vaccine quality, and achieve 95% accuracy in predicting vaccine quality.
- Boosted task efficiency by automating data preparation with Python, streamlining development through centralized configuration by JSON, implementing version control with Git, and maintaining clear documentation of the codebase.

Dynacolor, Taipei, Taiwan
Mechanical Engineer *May 2019 – March 2021*

- Engineered mechanical components of a 6-DOF surgical camera system for fluorescence-guided surgery.
- Designed camera components, including optical and assembly structure, using Creo, ensuring the camera complies with waterproof & dust-proof standards (IP66, IP67) and impact resistance standards (IK10).
- Directed the fabrication of components through diverse manufacturing processes, including die casting, sheet metal processing, and plastic injection molding, by 2D drawings creation and GD&T tolerance analysis.
- Identified and addressed product quality issues by setting up Standard Operation Procedures and optimizing the production process, reducing camera focusing defects by over 70%.

iQIYI, Beijing, China
Robotics Engineer *August 2017 – June 2018*

- Built 110 kg battling robots from scratch for the "Clash Bots" show, which attracted over one billion views worldwide.
- Led a team of four through agile project management to expedite the design, construction, and testing phases of the robot, successfully meeting an eight-month project delivery schedule.
- Designed impact-resistance mechanism, implemented RF control systems, executed welding and wiring, and assembled electro-mechanical components such as motors, contactors, and torque limiters to enhance combat performance.

EDUCATION

Johns Hopkins University, Baltimore, MD, United States
Master of Science in Engineering in Robotics (GPA: 3.8) *August 2022 - May 2024 (expected)*

National Taiwan University, Taipei, Taiwan
Bachelor of Science in Mechanical Engineering *September 2014 - June 2018*