

Ching-Hsiang Wu

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EDUCATION

National Taiwan University

Taipei, Taiwan

Master of Science, Automatic Control in Electrical Engineering

Feb. 2025

• Overall GPA: /4.30, Rank: /97

- Relevant Courses: Optimal Control(A+), Reinforcement Learning(A+), 3D Computer Vision with Deep Learning Applications(A)

National Taiwan University

Taipei, Taiwan

Bachelor of Science, Biomechanics Engineering

Feb. 2022

• Overall GPA: 3.39/4.30, Rank: 18/54

- Relevant Courses: Dynamics and Control of Robots(A) Automatic Control(A), Digital Control Systems(A), Adaptive Control Systems(A), Digital Image Processing(A-)

SKILLS

Programming

- Python, C/C++, Qt, MATLAB, WebDev Languages.

Software

- SolidWorks, Simulink, Gazebo, Rviz, Isaac Sim, Qt designer, ROS/ROS2.

System & Controller

- Ubuntu, Raspberry pi, Arduino, Nvidia TX2/Xavier, Pixhawk series, PX4.

Hardware

- Soldering, 3D printing

Artificial Intelligent

- Machine/Deep learning (Yolo, CNN), Reinforcement learning (DQN, PPO).

RESEARCH EXPERIENCE

Networked Control System Laboratory (NCSLab)

Taipei, Taiwan

Graduate student

Feb. 2023-Feb. 2025

Fixed-wing UAVs formation flight under variant wind disturbances

- Fixed-wing UAVs modeling, formation controller, and wind observer design.
- Validate the formation flight performance via SITL simulation, integrated with PX4, Gazebo, and ROS2.

Aiseed Tech Inc.

Taipei, Taiwan

Robotics AI engineer intern

Oct. 2021-Aug. 2022

Build UAV systems with ROS

- Mount a variety of sensors, such as intel Realsense d435i, T265, webcam on raspberry pi4.
- Study the obstacle avoidance and SLAM techniques to be applied to UAV system.
- Enable precision landing function with the distance sensor and irlock beacon.

Object detection and video streaming

- Stream inferred video from UAV system to website or ground station through Gstreamer.

Robots and Medical Mechatronics Laboratory (RMML)

Taipei, Taiwan

Undergraduate researcher

Sept. 2019-Sept. 2021

Develop a platform for remote control robots for oral and nasal cavity specimen collection

- Build an autonomous specimen collection robot with remote center motion (RCM) mechanism.
- Design the RCM linkage mechanism.
- Win sponsorship from the Ministry of Science and Technology (MOST)

Participate in 2019 Bio-mechatronics Field Robot Competition

- Grab apples with a 4-axis manipulator automatically by obtaining apples' 3-D coordinates.
- Use open-source tiny-yolov3 repository to train our model to recognize red and green apples.

HONORS AND ACHIEVEMENTS

2020 Taoyuan ROS SUMMER SCHOOL

Integrate NeronBot provided by ADLINK with ROS/ROS2 and the other self-defined algorithm to achieve the assigned mission automatically

- Advanced group second runner-up.

LEADERSHIP EXPERIENCE

2024 RL Final Project

Team manager

Taipei, Taiwan
Oct. 2024-Dec. 2024

Use PPO algorithm to train a quadruped to reach the desired position with a specified foot in Isaac Sim

- Effectively divide work to each member.
- Organize the weekly meeting to sync up the project progress.
- Win the first 10th place in the final presentation competition.

2020 Country Youth Life Study Club

Leader of activities department

Taipei, Taiwan
Sept. 2020-Feb. 2021

Hold an evening party and bring the laughter and tears to the children

- Effectively divide work to each member of activity department.
- Good time management to ensure that each work will be in place on time.

2020 Azalea Festival Project

Team leader

Taipei, Taiwan
Feb. 2020-Mar. 2020

Build an Automatic sensing and catching apple car system

- In charge of image recognition and information transmission between the Arduino and the laptop.
- Film a recruit video to promote Biomechatronics Engineering Department.