

Yao-Wen Hsieh

Los Angeles, CA | +1 213 547 6749 | yaowenhs@usc.edu | yaowenhs.com | linkedin.com/in/yao-wen-hsieh-362135388

PROFESSIONAL SUMMARY

USC M.S. student in Electrical and Computer Engineering (expected Summer 2028) with first-author research accepted to IFAC 2026 and presented at IEEE ICCE-Taiwan 2025. Experience spans MATLAB/Simulink control design, multi-sensor AI, and industrial computer vision.

EDUCATION

University of Southern California, Viterbi School of Engineering

Expected Summer 2028

M.S. in Electrical and Computer Engineering, General Program | Los Angeles, CA

Relevant Coursework (Fall 2026): EE 510 Linear Algebra, EE 483 Digital Signal Processing

Chung Yuan Christian University

June 2025

B.S. in Electrical Engineering | GPA: 3.51/4.0; Last 60 Credits: 3.72/4.0 | Taoyuan, Taiwan

SKILLS

Programming: Python, C, C++, MATLAB, Verilog

Robotics and Controls: MATLAB/Simulink, ROS 2, PX4 Autopilot, Gazebo, QGroundControl, Arduino

Perception and AI: YOLOv8, Dataset Annotation, Fuzzy Logic, Multi-Sensor Integration

Embedded and Tools: HT32F52352, Embedded C, UART, I2C, SPI, PWM, Xilinx Vivado, PSpice, LaTeX

SELECTED PROJECTS AND RESEARCH

Quadrotor UAV Trajectory Tracking Control Research

Feb 2025–Jan 2026

Research Assistant, Prof. Jen-te Yu Laboratory | First Author, Paper Accepted to IFAC 2026

- Extended a prior SO(3) sliding-mode controller from asymptotic to finite-time convergence; derived the control law and stability proof, validated it in MATLAB/Simulink, and wrote the accepted IFAC 2026 manuscript as first author.
- Ran the controller in PX4 SITL with Gazebo and ROS 2, tracking the reference trajectory in simulation.

AI-Based Waste Classification Research

Sep 2024–Jul 2025

First Author and Presenter, IEEE ICCE-Taiwan 2025 | 2025 CYCU Capstone Project Competition Excellence Prize

- Led a 3-person team building a waste classifier that fuses YOLOv8 vision with photoresistor and inductive sensors through a 20+-rule fuzzy inference engine.
- Raised classification accuracy from 63.3% (vision only) to 90% over 120 test passes on unseen items.
- Wrote the paper as first author and presented it at IEEE ICCE-Taiwan 2025.

EXPERIENCE

Solomon Technology Corporation

Jul–Aug 2024

Field Application Engineer Intern, Vision Business Unit

- Built a PCB inspection demo for Automation Taipei 2024: set up a fixed camera and lighting, labeled ~200 board images, and trained and tuned detection models in Solomon's vision platform to check placement, wrong parts, and solder quality.
- Presented the demo to expo visitors; Solomon's chairman showcased it to Taiwan's Vice President.
- Maintained the showroom's live tablet inspection demo and retrained its model.

LEADERSHIP

Vice President, Tainan Alumni Association

- Led year-round operations for a 250+ member association, managing a 14-person executive team and overseeing events, member coordination, scheduling, and logistics.

SELECTED PUBLICATIONS AND AWARDS

- “A Linear-Nonlinear Sliding Mode Control of Finite Time Trajectory Tracking for Multirotor UAVs Using the Logarithmic Map of SO(3)” | First Author | Accepted to IFAC 2026
- “Multi-Sensor Analysis Using Fuzzy Logic for Waste Classification” | First Author and Presenter | IEEE ICCE-Taiwan 2025
- Excellence Prize, CYCU Capstone Project Competition, 2025 | Excellent Award, AERC Asia Intelligence Robots Contest, 2021