

Yu-Wei Chang

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EDUCATION

University of California, Los Angeles

Los Angeles, CA

Master of Science in Electrical and Computer Engineering (Cumulative GPA 3.88/4.0)

Sep 2024 — Expected Jun 2026

• Graduate Teaching Assistant, Neural Networks & Deep Learning (ECE C147/C247)

- Managing a 500-student course, delivering weekly technical mentorship, developing discussion modules, designing exams, and evaluating projects.

National Tsing Hua University

Hsinchu, Taiwan

Bachelor of Science in Electrical Engineering (Cumulative GPA 4.04/4.3)

Sep 2020 — Jun 2024

RESEARCH EXPERIENCE

UCVLA: User-Conditioned Vision-Language-Action Models

Nov 2025 — Current

UCLA Neural Engineering and Computation Lab (Advisor: Prof. Jonathan Kao)

Los Angeles, CA

- Validated per-user embedding divergence, measured by cosine similarity, by finetuning RDT-2 FM with frozen-backbone per-user bias vectors (b_u).
- Architecting $\mathcal{O}(1)$ personalization across π_0 , RDT-2, and Diffusion Policy by injecting b_u at conditioning points, outperforming $\mathcal{O}(N)$ LoRA.
- Developing zarr-to-LeRobot/WebDataset pipelines and collecting 200-trial/user data via handheld UMI hardware to scale across 8–10 participants.

EasyReach: Adaptive Robotic Arm Assistance for Wheelchair Users

Sep 2024 — Current

UCLA HiLab (Advisor: Prof. Yang Zhang)

Los Angeles, CA

- Developing a prompt engineering framework that analyzes user videos to extract preferences for accessible robot behavior without retraining.
- Deployed a Vicon motion-capture pipeline with <5 mm tracking precision, achieving real-world object retrieval on the physical robotic arm.
- Prototyped kinematic feasibility in VR (Unity, Meta Quest 2), running 500+ reachability scenarios and reducing physical testing time by 80%.

VisCoder Bench: Do Coders Need Eyes?

Sep 2025 — Nov 2025

UCLA Visual Machines Group (Advisor: Prof. Achuta Kadambi)

- Developed VisCoder Bench, a standardized suite of 50 executable CV tasks (Geometric, Generative, Classical) to evaluate multimodal agents.
- Dockerized evaluation infrastructure on A100 GPUs, integrating 10+ CV pipelines with PSNR/mAP and VLM-Judge (87% human alignment).
- Analyzed 900+ trajectories, showing visual grounding improves geometric task success by 4.3x, exposing critical gaps in LLM reasoning.

Open Source High-Throughput USB HID Programmer for 8051 & AVR

Sep 2022 — Jun 2023

National Tsing Hua University

Hsinchu, Taiwan

- Engineered a driverless USB HID firmware and custom packet protocol, optimizing flash write throughput to reduce programming time by 80%.
- Deployed a cross-platform toolchain (C++/C#) adopted as production tooling for 3 undergraduate embedded systems courses (200+ students).

PROFESSIONAL EXPERIENCE

Software Engineer (Contract)

Apr 2025 — Sep 2025

Shin-Da Information Co., Ltd.

Taichung, Taiwan

- Built a Python serverless backend on AWS (Lambda, API Gateway), optimizing transaction latency by 35% to support 50+ enterprise clients in Q1.
- Engineered an automated ETL data validation pipeline, which accelerated processing throughput by 40% and eliminated manual entry errors.
- Led a 6-week initiative to architect and deploy a fault-tolerant automation platform, driving daily operations for 50+ staff members.

Software Engineer (Contract)

Mar 2024 — Aug 2024

Marker X Biomedical Co., Ltd.

Taipei, Taiwan

- Architected a centralized PostgreSQL data lake unifying mass spectrometry and experimental datasets, replacing fragmented legacy storage.
- Developed high-throughput analysis pipelines that reduced data processing latency by 90%, accelerating research iterations from days to minutes.
- Scaled backend infrastructure to manage 10,000+ sensitive records with 100% data integrity, ensuring high availability for 30+ scientists.

Research Development and Software Engineer Intern

Jul 2023 — Dec 2023

Industrial Technology Research Institute (ITRI)

Hsinchu, Taiwan

- Engineered a RAG-based memory system and fine-tuned PyTorch NLP models for elder-care robots, achieving 90% intent recognition.
- Deployed a multi-modal AI agent platform with LangChain and DALL·E 3, automating generative AI workflows for 200+ staff.
- Designed a high-concurrency Go backend for a national-scale distributed DB, securing record exchange for Taiwan's National Health Insurance.

SKILLS

- Programming:** C++ (Proficient), Python (Proficient), C, CUDA, Rust, Bash/Shell, SQL, Go, JavaScript, TypeScript, C#
- Robotics & Simulation:** ROS 2, Isaac Sim, MuJoCo, MoveIt, URDF, SLAM, PCL, Vicon, Unity (Sim-to-Real), UR5e, Franka FR3
- AI/ML:** PyTorch, VLA, OpenCV, Diffusion Policy, Transformers, Imitation Learning, LangChain, RAG, RL, TensorFlow, Speech
- Systems & Cloud:** Docker, Linux, Git, AWS, CMake, Just, Real-time Systems, gRPC, Kubernetes, CI/CD, Security, PostgreSQL, Neovim