Last updated on September 27, 2025

Chun-Kai Yang

chunkaiyangwork@gmail.com | Yang, Chun-Kai | YCK1130 | yck1130.github.io

Education

National Taiwan University Sep 2021 – Present
B.S. in Electrical Engineering (GPA: 4.17/4.3)

- **Coursework:** Robot Sensing and Control, Reinforcement Learning, Deep Learning in Computer Vision, Machine Learning, Operating System, Computer Network, Algorithm, Web Programming, Cryptography and Network Security

Experience

Lasertec Taiwan Inc. Taipei, Taiwan
Data Scientist Intern May 2025 – Sep 2025

- Improved production precision to 98.9% by designing a data synthesis, model training (U-Net, ViT), and evaluation pipeline to correct camera parameter mismatches across ~500K images
- Accelerated inference by 23.4x through parallel data processing and caching; expanded metric analysis scale by 500x (from 1K samples to 500K data points), enabling relational review across 30+ metrics
- Reduced human review time by 4.4x and improved data analysis efficiency by 10x by developing 3 internal web tools, including a labeling platform, a config-driven image viewer, and a metrics visualization dashboard

Instill AI London, UK
AI Engineering Intern Jun 2024 – Aug 2024

- Integrated 3 vendor APIs into production using Golang; supported 20+ functionalities including OAuth2 authentication and improving workflow efficiency and coverage
- Developed a scalable, generalized unit testing framework with a mock server for HTTP functions, enabling robust multi-module testing and reducing external dependencies
- Built a logger to convert complex Golang classes into human-readable formats, reduced debugging time by ~50%

Publications

Learning Skills from Action-Free Videos ICLR (Under Review), 2025
Hung-Chieh Fang, Kuo-Han Hung, Chu-Rong Chen, Po-Jung Chou, ***Chun-Kai Yang****, Po-Chen Ko, Yu-Chiang Frank Wang, Yueh-Hua Wu, Min-Hung Chen, Shao-Hua Sun*

Designed experiments and ablation studies; evaluated feasibility of real-robot deployment; built a data collection pipeline for real-world testing

Diffusion Imitation from Observation NeurIPS, 2024
Bo-Ruei Huang, ***Chun-Kai Yang****, Chun-Mao Lai, Dai-Jie Wu, Shao-Hua Sun*

Implemented 3 baseline methods, designed experiment and ablation studies that provided insights into reward distribution and hyperparameter trade-offs

Projects

Multimodal Perception and Comprehension in Autonomous Driving Nov 2024 – Dec 2024

- Developed a 2-stage RAG-enhanced LLaVA system for autonomous driving perception; used segmentation and depth features to improve spatial understanding and scene comprehension
- Achieved 5x training speedup by optimizing multi-GPU workflows and integrating DeepSpeed with Liger kernels for memory, communication, and throughput efficiency

Google 2023 Hardware Product Sprint - Fire Guardian Jun 2023 – Aug 2023

- Designed a real-time fire escape system with Raspberry Pi, integrating web interfaces for remote monitoring and control; developed dynamic escape routing algorithms that adapt to online environmental condition changes
- Established robust device communication infrastructure using MQTT for reliable data transmission between edge devices; implemented user notification system with Line Bot API for instant alerts and status updates

NTUEE Light Dance Oct 2022 – Mar 2024

- Refactored monolithic program into modular CLI components, significantly improving maintainability and enabling rapid feature extension; integrated parallel processing to achieve 2x frame rate performance
- Redesigned data storage architecture and efficient serialization methods for LED control system, reducing storage usage by 30% while maintaining fast access and scalability for large-scale performances

Skills

C/C++, Python, Go, TypeScript, React, Pytorch, MongoDB, PostgreSQL, git, Docker, ROS2, ALOHA, RPi, Arduino