

# Chin-Yang Lin

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🔄 [linjohnss](https://github.com/linjohnss)

🔗 [5hYgWcwAAAAJ](https://github.com/linjohnss/5hYgWcwAAAAJ)

## Research Interest

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**Computer Vision, Image Processing, 3D Geometry, 6D Pose Estimation, Computational Photography**

## Education

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### National Yang Ming Chiao Tung University

2023 – Present

Master's degree in Data Science and Engineering. Advised by Prof. [Yu-Lun Liu](#) and Prof. [Wei-Chen Chiu](#)

Course: Advances in 3D Vision, Image Processing, Machine Learning, Deep Learning, Parallel Programming

### National Cheng Kung University

2018 – 2023

Bachelor's degree in Computer Science and Geomatics (Double Major).

Award: National Science and Technology Council (NSTC) Research Grant for University Student

## Experience

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### Image Processing Engineer Intern

Jul. 2024 – Present

Logitech, Imaging Engineering team

Developed a GPU-based image processing module using OpenCL for Logitech's new Video Collaboration Products, achieving up to 30x acceleration compared to CPU processing.

### Research Assistant

Feb. 2021 - Jun. 2023

POINT Lab, Advisor: Prof. Kai-Wei Chiang

Developed real-time localization algorithms and sensor modules for autonomous vehicles, with a focus on stereo camera localization using pre-built LiDAR maps and GPS-IMU sensor fusion.

## Publications

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### FrugalNeRF: Fast Convergence for Extreme Few-shot Novel View Synthesis without Learned Priors [\[link\]](#)

[Chin-Yang Lin](#), [Chung-Ho Wu](#), [Chang-Han Yeh](#), [Shih-Han Yen](#), [Cheng Sun](#), [Yu-Lun Liu](#)

CVPR 2025

Achieved state-of-the-art quality for 3D scene reconstruction from extremely few input images, while demonstrating faster training times without the need for learned priors.

### AuraFusion360: Augmented Unseen Region Alignment for Reference-based 360° Unbounded Scene Inpainting [\[link\]](#)

[Chung-Ho Wu\\*](#), [Yang-Jung Chen\\*](#), [Ying-Huan Chen](#), [Jie-Ying Lee](#), [Bo-Hsu Ke](#), [Chun-Wei Tuan Mu](#), [Yi-Chuan Huang](#), [Chin-Yang Lin](#), [Min-Hung Chen](#), [Yen-Yu Lin](#), [Yu-Lun Liu](#)

CVPR 2025

A reference-guided 3D inpainting method based on SDEdit with aligned Gaussian initialization, evaluated on a new 360° dataset (360-USID).

### DiffIR2VR-Zero: Zero-Shot Video Restoration with Diffusion-based Image Restoration Models [\[link\]](#)

[Chang-Han Yeh](#), [Chin-Yang Lin](#), [Zhi-Xiang Wang](#), [Chi-Wei Hsiao](#), [Ting-Hsuan Chen](#), [Yu-Lun Liu](#)

arXiv 2024

Proposed a zero-shot temporal-consistent enhancement module for diffusion-based image restoration.

### BoostMVSNeRFs: Boosting MVS-based NeRFs to Generalizable View Synthesis in Large-scale Scenes [\[link\]](#)

[Chih-Hai Su](#), [Chih-Yao Hu](#), [Shr-Ruei Tsai](#), [Jie-Ying Lee](#), [Chin-Yang Lin](#), [Yu-Lun Liu](#)

SIGGRAPH 2024

Developed an algorithm to enhance MVS-based NeRF rendering by improving view coverage.

### A CNN-Speed-Based GNSS/PDR Integrated System for Smartwatch [\[link\]](#)

[Chin-Yang Lin](#), [Yang-En Lu](#), [Chi-Hsin Huang](#), [Kai-Wei Chiang](#)

MMT 2023

Proposed a speed model achieving 3m position error using smartwatch sensors in challenging scenarios.

## Projects

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### Image Signal Processing with CUDA

Sep. 2024 - Dec. 2024

NYCU Parallel Programming

Utilizes CUDA acceleration to implement an image signal processing (ISP) system, aiming to enhance the performance of image processing, include Shifting, Debayer, Denoise, AWB.

### Towards CLIP Zero-shot Water Segmentation

Sep. 2023 - Jan. 2024

NYCU Digital Image Processing (1st Water Segmentation Challenge)

Enhanced zero-shot CLIP segmentation using a fast bilateral solver, achieving up to 0.90 mIoU on the test set, surpassing other methods involving training or fine-tuning.

### **FS-NeRF: Fast Sparse Input Neural Radiance Field**

*Jul. 2023 - Aug. 2024*

*NYCU Deep Learning and Practice (Final project the highest score)*

Achieving fast convergence of high-quality NeRF with only two input images by utilizing voxel representation and integrating visibility priors and monocular depth, reducing the training time by 30x.

### **Human Interaction Robot Controller**

*Sep. 2021 - Jun. 2022*

*NCKU Independent Study, Advisor: Prof. Jenn-Jier Lien*

Developed an automated industrial robot with 3D LiDAR navigation, obstacle avoidance, real-time face recognition, robot arm gripping, and pedestrian following using YOLO and depth image.

### **Real-time Camera localization in 3D LiDAR Map**

*Feb. 2020 - Jan. 2021*

*NCKU Independent Study, Advisor: Prof. Kai-Wei Chiang*

Created a low-cost localization system integrating Visual SLAM and visual point cloud registration within a pre-built 3D LiDAR map, significantly reducing trajectory drift and improving accuracy by 65%.

### **Side Projects**

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#### **Iris: Stereo camera localization in pre-build maps**

*2023*

Stereo camera navigation in point cloud maps using ICP registration in vehicle scenarios.

#### **Wrist-Worn IMU PDR Algorithm**

*2023*

A wrist-worn IMU PDR using VQF attitude, including step detection, step length, and heading estimation.

#### **OpenCV Visual Odometry | C/C++, OpenCV**

*2022*

A real-time monocular visual odometry using OpenCV, including feature matching and pose estimation.

### **Academic Service**

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#### **Reviewer**

ICLR 2024, ICS 2024

#### **Student Volunteer**

SIGGRAPH Asia's 2024

### **Skills**

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#### **Programming**

C, C++, Python, Java, Shell Script, HTML,  $\LaTeX$

#### **Technologies**

Git, Linux, OpenCV, Open3D, PyTorch, TensorFlow, JAX, CUDA, OpenCL, OpenGL, ROS