

SUMMARY

Ph.D. candidate in Computer Science at National Taiwan University, advised by Prof. Wen-Huang Cheng (CMLab AIMM Group). Research focuses on 3D reconstruction, visual geometric foundation models, and visual relocalization, with applications to autonomous vehicles and autonomous mobile robots. Broader research interests span 2D/3D computer vision, deep learning, multimodal understanding, robotic perception and navigation, and generative AI.

EDUCATION

Ph.D. (in progress)

Sep 2022 - Now

National Taiwan University

Department of Computer Science and Information Engineering

Advisor: Wen-Huang Cheng

GPA: 4.20

Master of Science

Sep 2020 - Aug 2022

National Taiwan University of Science and Technology

Department of Electronic and Computer Engineering

Advisor: Yung-Yao Chen

Final GPA: 3.96

Bachelor of Science

Sep 2018 - Jun 2020

National Taiwan University of Science and Technology

Department of Electronic and Computer Engineering

Final GPA: 3.63

PUBLICATIONS

- **Training-Free Adaptation of Visual Geometry Foundation Models for Scene-Generalizable Localization**
Si-Yu Lu, Cheng-Ru Yu, Sin-Ye Jhong, Yu-Yao Chang, Hsin-Chun Lin, Wen-Huang Cheng, Yung-Yao Chen
Under review at ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM)
- **OVGGT: O(1) Constant-Cost Streaming Visual Geometry Transformer**
Si-Yu Lu, Po-Ting Chen, Hui-Che Hsu, Sin-Ye Jhong, Wen-Huang Cheng, Yung-Yao Chen
Accepted to European Conference on Computer Vision (ECCV), 2026
- **SeCo: Semantic-Guided Multimodal Color Splash Effects**
Jing-Xuan Chen*, Ling Lo*, Si-Yu Lu*, Ling Zou, Wen-Huang Cheng, Jungwoo Huh, Sanghoon Lee
ACM Transactions on Multimedia Computing, Communications and Applications (TOMM), 2026
- **3D Multi-modal Object Detection Based on Cross-Attention Feature Fusion**
Sin-Ye Jhong, Min-Hsuan Ho, Si-Yu Lu, Yung-Yao Chen*
International Conference on Robotics and Automation (ICRA), 2025
- **Learning Based Heatmap Guided Model for Monocular Visual Odometry**
Hsin-Chun Lin, Sin-Ye Jhong, Yu-Hsiu Lin, Jen-Kai Fang, Chi-An Chang, Si-Yu Lu, Yung-Yao Chen*
IEEE Transactions on Instrumentation and Measurement (IEEE TIM), 2025
- **Radiance Field-Based Pose Estimation via Decoupled Optimization Under Challenging Initial Conditions**
Si-Yu Lu, Yung-Yao Chen, Yi-Tong Wu, Hsin-Chun Lin, Sin-Ye Jhong, Wen-Huang Cheng
Winter Conference on Applications of Computer Vision (WACV), 2025
- **Eyeing3D: Perceiving 3D from 2D Images**
Tai Peng, Kang-Yang Huang, Si-Yu Lu, Rou-An Chen, Jianlong Fu, Hong-Han Shuai, Wen-Huang Cheng
IET International Conference on Engineering Technologies and Applications (ICETA), 2023

- **Fast Learning-Based 3-D LiDAR Localization with Multiscale Feature Recursive Matching for Autonomous Driving**

Si-Yu Lu, Sin-Ye Jhong, Wei-Jia Cheng, Yung-Yao Chen*

International Automatic Control Conference (CACS), 2022

AWARDS & CERTIFICATE

- National Chung Hsing University Competition on "AI Empowerment and Robotics in Smart Manufacturing Applications" (2025)
 - **First Place, Graduate Student**
- IET International Conference on Engineering Technologies and Applications (2023)
 - **Best Paper Award, First Place**
- Intel DevCup, "AI in Practice" track (2022)
 - **Best Popularity Award**
- CACS International Automatic Control Conference (2022)
 - **Best Paper Award & Best Student Paper Award, Second Place**
- National Taiwan University of Science and Technology (2020)
 - **Certificate of Achievement**
- AIGO Competition (Taiwan Industrial Development Administration) (2020)
 - **Honorable Mention**
- Japanese-Language Proficiency Test (2020)
 - **JLPT N2 Certificate**
- German Industry and Commerce (AHK) (2018)
 - **AHK Automation Engineer Assistant**
- Contemporary Undergraduate Mathematical Contest in Modeling (2017)
 - **National First Prize**

EXPERIENCE

Research Assistant (Industry collaborations), Kingston Technology Corp.

- AI-KM System Development and Validation (2025.06 - Present)

Research Assistant (Industry collaborations), Industrial Technology Research Institute (ITRI)

- Solid-State LiDAR Perception and 3D Object Tracking (2024.12 - 2026.02)
- Bridge Inspection System (2025.02 - 2026.06)

Research Assistant (Projects), National Science and Technology Council (NSTC)

- Collision-Avoidance Motion Planning for Multi-Human Multi-Robot Collaboration Based on Multimodal Perception and AI Path Generation (2025.06 - 2026.07)
- 5G-AI Human-Robot Collaboration Technology Applying High-Precision Full-Field Stereo Vision and Heterogeneous Sensor Fusion to Human Pose Prediction and Robotic Arm Path Planning (2023.06 - 2025.07)

SERVICES

- **Journal Reviewer**
 - IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
 - IEEE Transactions on Consumer Electronics (TCE)
- **Conference Reviewer**
 - ACM Multimedia (ACM MM)
 - IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)