Chun-Yu “Jerry” Hou

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EDUCATION

Carnegie Mellon University — Pittsburgh, PA
Master of Science in Robotic Systems Development — Jun. 2027

National Yang Ming Chiao Tung University — Hsinchu, Taiwan
5-th year Master of Science, Bachelor of Science in Electrical and Computer Engineering | GPA: 4.19/4.3 — Aug. 2023
Selected Coursework: Deep Learning, Machine Learning, Applied Computer Vision, Self-Driving Cars

SKILLS

Programming Languages: C++, Python, Nix
Software: OpenCV, PyTorch, ROS/ROS2, Docker, GTSAM, Ceres Solver, Wireshark

WORK EXPERIENCE

Industrial Technology Research Institute — Hsinchu, Taiwan
Associate Researcher in Autonomous Vehicle Perception — Dec. 2023 – Jul. 2025

- Initiated and implemented state-of-the-art 3D Gaussian Splatting scene reconstruction and camera pose estimation methods in driving scenarios, enhancing the visual localization system accuracy by 50%
- Led a cross-functional team of 3 to develop 4D radar-inertial SLAM and localization on LiDAR maps, identifying and resolving key cost bottlenecks, achieving 0.26 RMSE accuracy and reducing system cost by 60%
- Collaborated with 4 sensor specialists to architect a real-time multi-sensor (radar, LiDAR, camera) tracking system using Unscented Kalman Smoother; optimized for 100 Hz operation on autonomous vehicle platforms
- Deployed 4D radar drivers and executed perception algorithms on IPC platforms; diagnosed and resolved networking issues between radar and compute units using Wireshark
- Initiated and led development of an automated 4D radar-LiDAR calibration pipeline, streamlining the process and coordinating with operations engineers to reduce calibration time by 75%
- Mentored 4 interns at ITRI on radar–LiDAR calibration, sensor fusion, and real-time perception algorithms; regularly provided technical guidance during weekly meetings with an 8-member perception team

PUBLICATIONS & PATENT

Chun-Yu Hou, Chieh-Chih Wang, Wen-Chieh Lin, “**Improving Height Estimation for Stationary Targets with 3D Automotive Radar: From Uncertainty Analysis to Temporal Filtering**”, IEEE Transaction on Radar Systems, 2025

Chun-Yu Hou, Chieh-Chih Wang, Wen-Chieh Lin, “**Automotive Radar Missing Dimension Reconstruction from Motion**”, IEEE/RSJ IROS 2023, Detroit, MI.

Chia-Le Lee, **Chun-Yu Hou**, Chieh-Chih Wang, Wen-Chieh Lin, “**Extrinsic and Temporal Calibration of Automotive Radar and 3D LiDAR in Factor and On-Road Calibration Settings**”, IEEE Open Journal of Intelligent Transportation Systems, 2023.

Patent: “**Height Information Reconstruction System and Height Information Reconstruction Method**”, Pending.

ACADEMIC PROJECTS

National Yang Ming Chiao Tung University — Hsinchu, Taiwan
Boosting Stochastic Trajectory Prediction using Conditional Latent Diffusion Model — Sep. 2022 – Jan. 2023

- Initiated and co-led development of a stochastic trajectory prediction system using a conditional latent diffusion model; proposed semantic traffic fusion, boosting accuracy

Representing Scenes as Compositional Generative Neural Feature Fields with Hair Conditions — Jun. – Aug. 2022

- Innovated a method to manipulate specific object attributes (e.g., hair color) in scenes by applying targeted conditions to compositional generative neural feature fields, preserving overall object integrity