Ying-Chun (Thomas) Lee

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EDUCATION

University of Washington, Seattle, WA *Expected Sep 2025 – Mar 2027*
Master of Science in Electrical and Computer Engineering
- GPA: 3.95/4.0

Yuan Ze University, Taoyuan, Taiwan *Sep 2020 – Jun 2024*
Bachelor of Science in Electrical Engineering
- Overall GPA: 3.73/4.0, Major GPA: 3.94/4.0

SKILLS

- **Relevant Coursework:** ROS, Self Driving Car, Software Development, Embedded Systems, Smart Systems, AI, Deep Learning, Computer Vision, IoT, Cloud Computing
- **Programming**: Python, C, C++, JavaScript, HTML, CSS, SQL
- **Tools & Frameworks:** ROS2, TensorFlow, Keras, PyTorch, OpenCV, NumPy, Matplotlib, PIL, Docker, AWS, GCP

TECHNICAL EXPERIENCE

Research Collaborator, *PRIOR Team at Allen Institute for AI (Ai2), Seattle, WA* *Oct 2025 – Present*
- Enabled real-time imitation-learning deployment across 3 robotic platforms, cutting data-collection time from 4 hours to ~100 minutes per 100 episodes, by building a multithreaded teleoperation, logging, and inference stack
- Trained and deployed ACT and π (pi0 / pi0.5 / pi0-fast) policies on real robots, adding joint-position/velocity action support and implementing real-time inference on the Franka arm
- Engineered a Gello teleoperation, data-collection, and replay pipeline with a conversion layer for Oculus Cartesian-delta compatibility

Project Lead, *Seattle Source Ranker, Seattle, WA* *Sep 2025 – Present*
thomas0829.github.io/Seattle-Source-Ranker/
- Architected a distributed pipeline spanning 430K+ repositories, reducing collection time by 87% (5 hours to 40 mins), by implementing a hybrid GitHub GraphQL/REST strategy with Redis, Celery, and multi-token rotation
- Engineered a secondary validation layer to sanitize raw API data, ensuring integrity by automatically detecting legal blocks (HTTP 451) and correcting metric inconsistencies (stars vs. watchers) for ~2% of the dataset
- Delivered a tiered scoring system and React interface with instant filtering (<100ms), by implementing PyPI ecosystem alignment, client-side pagination, and URL state persistence

Robotics Software Engineer, *Husky Robotics Team, University of Washington* *Sep 2025 – Present*
- Delivered a real-time perception stack for an autonomous Mars rover, enabling pose-aware navigation and ~90% object-detection accuracy, by integrating OpenCV pipelines, ArUco solvePnP, and OWL-ViT
- Architected camera calibration and perception-to-navigation integration in C++ for low-latency real-time control
- Enhanced the AR camera system for improved usability and field performance

Intern, *CHANG CHUN GROUP - Information Center, Taipei, Taiwan* *Jul 2025 – Aug 2025*
Project: ALOHA-ViperX 300S Digital Twin and Imitation Learning Platform
- Created an end-to-end imitation-learning training platform for the ALOHA VX300S robotic arm, achieving 100% grasp success in simulation across a 35–65 cm workspace, by developing a ROS2–Isaac Sim digital twin and Transformer-based ACT++ control pipeline
- Developed a three-stage trajectory planner with real-time IK constraint validation and dual-camera perception
- Implemented automated conversion to standard ACT++ HDF5 datasets for scalable training

Teaching Assistant, *Introduction to Computer Science, Yuan Ze University* *Sep 2023 – Jan 2024*
- Mentored and assessed 100+ students on low-level computing (LC-3 assembly, two's complement, binary arithmetic), improving comprehension and course engagement
- Organized recurring student issues into structured debugging guides for faster one-on-one support

PUBLICATIONS

- **Ying-Chun Lee**, C.-Y. Lin, et al., "Using Deep Learning-Based Methods for Automated Segmentation of Soft Tissues from Shoulder Ultrasound Images," IEEE Access, Vol. 12, pp. 111,481-111,492, July 2024. DOI: 10.1109/ACCESS.2024.3432691
- Shirui Chen, Cole Harrison, **Ying-Chun Lee**, et al., "TOPReward: Token Probabilities as Hidden Zero-Shot Rewards for Robotics," Submitted to International Conference on Machine Learning (ICML), 2026
- Yejin Kim, Wilbert Pumacay, Omar Rayyan, et al. (**Ying-Chun Lee**), "MolmoSpaces: Large-Scale Open Ecosystem for Robot Manipulation and Navigation," Submitted to Robotics: Science and Systems (RSS), 2026