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: 3.98/4.0

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++, Java, JavaScript, HTML, CSS, SQL
- **Tools & Frameworks:** ROS2, NVIDIA Isaac Sim, Omniverse USD, PyTorch, OpenCV, NumPy, PIL, Docker, AWS, GCP

TECHNICAL EXPERIENCE

Research Collaborator, *PRIOR Team at Allen Institute for AI (Ai2), Seattle, WA* — ***Oct 2025 – May 2026***
- Collaborated with Ai2 Student Researcher Jiafei Duan and PRIOR researchers on real-robot policy infrastructure, supporting deployment, teleoperation, evaluation, and reproducible demo workflows for MolmoSpaces, MolmoAct2, MolmoB0T, and TOPReward
- Set up real-time imitation-learning deployment across 3 robot platforms, improving 100-episode rollout throughput from ~4 hours to ~100 minutes through a multithreaded stack for teleoperation, policy inference, synchronized logging, replay, and real-robot evaluation
- Fine-tuned and ran VLA and imitation-learning policies including pi0, pi0.5, pi0-FAST, ACT, SmolVLA, and Diffusion Policy across Franka FR3, LeRobot SO-100/SO-101, and YAM robots; added joint-position/velocity action support and real-time FR3 inference
- Developed reproducible robot-learning tooling for calibration, recording, validation, LeRobot-compatible data conversion, GELLO teleoperation, and Meta Quest 2 Cartesian-delta control workflows

Robotics Software Engineer, *Husky Robotics Team, University of Washington* — ***Sep 2025 – Apr 2026***
- Delivered a real-time perception stack for an autonomous Mars rover, enabling pose-aware navigation and ~90% object-detection accuracy by integrating OpenCV, ArUco solvePnP, OWL-ViT, and Intel RealSense depth sensing
- Built an OWL-ViT fine-tuning pipeline for University Rover Challenge target objects and integrated depth-aware distance estimation for autonomous approach and manipulation
- Architected camera calibration, AR camera improvements, and perception-to-navigation integration in C++ for low-latency real-time rover control

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 using a ROS 2 and Isaac Sim digital twin with a Transformer-based ACT++ control pipeline
- Developed a three-stage trajectory planner with real-time IK constraint validation, workspace-bound checking, and dual-camera perception for robust simulated grasping
- Automated ACT++ HDF5 dataset generation from simulation rollouts and documented a reproducible Isaac Sim workflow covering robot control, perception, trajectory generation, and dataset export

PUBLICATIONS

- Yejin Kim, Wilbert Pumacay, Omar Rayyan, et al., (**Ying-Chun Lee**), "MolmoSpaces: Large-Scale Open Ecosystem for Robot Manipulation and Navigation," Robotics: Science and Systems (RSS), 2026. arXiv:2602.11337
- **Ying-Chun Lee**, Chih-Yang Lin, Chia-Chun Hsiao, 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
- Haoquan Fang, Jiafei Duan, Donovan Clay, et al., (**Ying-Chun Lee**), "MolmoAct2: Action Reasoning Models for Real-world Deployment," arXiv:2605.02881, 2026.
- Abhay Deshpande, Maya Guru, Rose Hendrix, et al., (**Ying-Chun Lee**), "MolmoB0T: Large-Scale Simulation Enables Zero-Shot Manipulation," arXiv:2603.16861, 2026
- Shirui Chen, Cole Harrison, **Ying-Chun Lee**, et al., "TOPReward: Token Probabilities as Hidden Zero-Shot Rewards for Robotics," arXiv:2602.19313, 2026