Yi (Cherry) Lian

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Education

Georgia Institute of Technology — Atlanta, GA
Master of Science in Robotics: Human-Robot Interaction, Perception, AI – CGPA: 4.00/4.00 — *Aug 2024 – Apr 2026*

University of Toronto — Toronto, ON
B.A.Sc. in Mechanical Engineering: AI, Robotics, Mechatronics, Manufacturing — *Sep 2019 – Apr 2024*

Experience

Robotics Engineer — May 2025 – Present
Advanced Mechatronics Solutions — *San Diego, CA*

- Designed and implemented autonomous mobile robot (AMR) and automated guided vehicle (AGV) solutions to improve warehouse automation, material handling, and operational efficiency
- Built and deployed SLAM-based navigation and perception systems for AMRs, leveraging industry-standard tools to enable robust, real-time autonomous operation in dynamic warehouse environments

SLAM and Navigation Researcher — Aug 2024 – Present
Georgia Institute of Technology — *Atlanta, GA*

- Implemented a real-time semantic visual-inertial SLAM system for quadruped and mobile robots by developing a computer vision pipeline for ORB feature extraction and integrating high-frequency IMU and camera data with deep learning-based semantic segmentation
- Developed a semantic navigation framework incorporating a vision-language model (VLM) to generate language-guided actions, enabling intuitive and socially-aware human-robot interaction in dynamic environments
- Led hardware troubleshooting and sensor calibration on TurtleBot4 platform, streamlining data pipelines and connectivity to ensure reliable real-time performance and system robustness
- Publication: Yi Lian, J. Taery Kim, Sehoon Ha, "Implicit Behavioral Cues for Enhancing Trust and Comfort in Robot Social Navigation," ICRA 2025 PTAS Workshop (Best Presentation Award)

Machine Learning Engineer — May 2022 – Aug 2023
Huawei Canada — *Markham, Canada*

- Designed and deployed LSTM-based deep learning models for bandwidth prediction in large-scale computer networks, achieving a prediction error below 5%
- Streamlined data acquisition pipelines with socket programming and network emulators (Mahimahi, NS2), improving real-time ingestion across 60% of team projects
- Resolved synchronization issues and enhanced data integrity in Django-based clustered databases, enabling reliable deployment of ML-based congestion control systems
- Publication: Ahmed Elbery, Yi Lian, and Geng Li, "Toward Fair and Efficient Congestion Control: Machine Learning Aided Congestion Control (MLACC)," 2023, In Proceedings of the 7th Asia-Pacific Workshop on Networking (APNET '23), doi:10.1145/3600061.3603275
- Publication: Sina Keshvadi, Shuihai Hu, Yi Lian, Geng Li, "OpenData: A Framework to Train and Deploy ML Solutions in Wide-Area Networks," IEEE Network, 2023, doi:10.1109/MNET.2023.3320929

Projects

HINTeract, Interactive Robot Learning Framework | *Python, Robosuite, PyTorch* — Jan 2025 – Apr 2025

- Trained Behavioral Cloning policies from 260+ demonstrations for subtask-level table assembly in Robosuite
- Built a hierarchical imitation learning framework with hint-guided feedback, optimizing sample efficiency and task rollout stability

SpooderMan, Autonomous Robot Follower | *ROS2, Python, OpenCV* — Aug 2024 – Dec 2024

- Developed an autonomous robot follower on TurtleBot3 by employing SIFT-based feature extraction and image segmentation using OpenCV and custom ROS2 packages
- Integrated a SLAM framework with a dynamic window-based controller for precise global localization and coordinate-based navigation, enabling efficient maze traversal through KNN-based directional sign classification

Technical Skills

Python, C, C++, Bash, MATLAB, Assembly, PyTorch, Numpy, Pandas, TensorFlow, Linux, ROS, ROS2, Git/Github, Docker, Jupyter, VSCode, Arduino, tmux, scikit-learn, OpenCV, NLTK, PySerial, socket, Django, AWS, Unity