Yi (Cherry) Lian

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EDUCATION

Georgia Institute of Technology — M.S. Robotics | Human-Robot Interaction, Perception, AI — AUG 2024 - APR 2026
University of Toronto — B.A.Sc. Mechanical Engineering | AI, Robotics, Mechatronics, Manufacturing — SEP 2019 - APR 2024
Specializations in Mechatronics and Manufacturing, minors in AI and Robotics — CGPA: 3.64/4.00

EXPERIENCE

Ha Lab — Student Researcher — AUG 2024 - PRESENT

- Conducted literature reviews and summarized existing research to assist in the development of novel solutions in **visual navigation** for quadruped robots
- Assisted in proposal writing outlining future directions for projects, identifying key research opportunities and goals

Georgia Institute of Technology — Graduate Teaching Assistant — AUG 2024 - PRESENT

- Collaborated with faculty members in designing course modules and materials for Deep Reinforcement Learning, completing course planning **2 days** ahead of schedule

Huawei Canada — AI Researcher — MAY 2022 - AUG 2023

- Led a research project focusing on deep learning solutions for bandwidth predictions in computer networks, achieving less than **5% error** using a **long short-term memory** model
- Designed data collection methodologies using **socket programming** and Mahimahi network emulator for over **60%** of the team's projects
- Implemented a Django-based cluster database system to analyze network data synchronization behaviours, contributing to a **15%** advancement in project milestones
- Publications:
    - 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), https://doi.org/10.1145/3600061.3603275
    - S. Keshvadi, S. Hu, G. Li and **Y. Lian**, "**OpenData: A Framework to Train and Deploy ML Solutions in Wide-Area Networks**," in IEEE Network, doi: 10.1109/MNET.2023.3320929

University of Toronto Robotics Association — Mechanical Team — SEP 2019 - APR 2022

- Designed manipulators for an autonomous humanoid robot on **Fusion 360**
- Completed assembly of robot **12%** ahead of schedule

PROJECTS

Miles Morales, Autonomous Robot Follower | ROS, OpenCV — AUG 2024 - PRESENT

- Developed an autonomous robot follower on a TurtleBot 3 capable of object recognition with **ROS** and **OpenCV**

Oogway, Autonomous Rover and Robot Companion | ROS, C++, OpenCV — JAN 2024 - APR 2024

- Developed an autonomous robot navigation system on a TurtleBot 2 capable of SLAM, surveying unknown environments, and object detection utilizing **ROS**, **C++**, and **OpenCV**
- Integrated object following and emotion display modules, achieving **80%** user satisfaction

Kir-B, Autonomous Maze-Navigating Rover | Videos | Python, Arduino — JAN 2024 - APR 2024

- Designed an **Arduino-based** maze-navigating rover, achieving a **top 3** ranking for autonomy
- Developed **obstacle avoidance**, **localization**, **object detection**, and **communication** modules to exchange sensor data sent from Arduino Mega via Bluetooth and high-level commands from Python algorithms
- Improved localization accuracy by **70%** by optimizing sensor data preprocessing and integrating a particle filter algorithm

Driver Drowsiness Detector, Real-time Driver Drowsiness Detection | PyTorch, OpenCV — JAN 2024 - APR 2024

- Designed a **convolutional neural network** model using **PyTorch** to identify drowsiness levels of drivers, achieving an accuracy of **98.9%**
- Extracted driver facial features from real-time video frames using **OpenCV**

SKILLS

Programming Languages: Python, C, C++, Bash, MATLAB, Assembly
Libraries: PyTorch, NumPy, Pandas, TensorFlow, Matplotlib, scikit-learn, OpenCV, NLTK, PySerial, Keras, TensorFlow, ROS, socket
Frameworks: Django
Tools: Git/Github, Docker, Jupyter, VSCode, Linux, Arduino, tmux
Mechanical Design: SolidWorks, Autodesk Fusion 360, Autodesk Inventor, AutoCAD, ANSYS, Machining
Languages: English, Mandarin, Cantonese