# Jiaxing(Louis) Li

Email: jiaxingl@andrew.cmu.edu
Phone: +1 (412) 294-7999

*Education*

Carnegie Mellon University — Jun 2025
MS in Electrical and Computer Engineering
GPA: 3.73/4.00

City University of Hong Kong — Jun 2023
BEng in Electrical and Computer Engineering
GPA: 3.78/4.00

*Researches*

Intelligent Control Lab, Carnegie Mellon University — Jun.2024 - Now

- Supervised by Prof. Changliu Liu and working on projects related to safety-constrained reinforcement learning, provable safety guarantee for automation system based on HJ reachability analysis, Koopman dynamics for safe control, safe boundary control for PDE system through CBF, and Safe VLA.

Airlab, Carnegie Mellon University — Jun.2025 - Now

- Working with Prof.Sebastian Scherer on learning smooth ground-air locomotion of a dual-wheel hybrid aerial-ground robot.

Control & Learning Group, Carnegie Mellon University — Feb.2024 - May.2024

- Proposed physics-informed reinforcement learning (PIRL) for maximal safety probabilities estimation in vehicle drifting scenarios, and performed safety probability analysis for the proposed algorithm in the Carla simulator.

Undergraduate Research Fellowship, The City University of Hong Kong — May.2022 - Jun.2023

- Proposed robust multi-scale cross-attention detector against adversarial image manipulation and splicing. The proposed method obtained SOTA performance while facing domain shift.
- Constructed an AI-generated video dataset with diffusion models and proposed a novel detection framework by learning local motion information and global appearance variation.

*Publications*

[1] **Jiaxing Li**, Hanjiang Hu, Yujie Yang, Changliu Liu. “Verifiable Safety Q-Filters via Hamilton-Jacobi Reachability and Multiplicative Q-Networks.” IEEE Control System Letter.
[2] Hikaru Hoshino, **Jiaxing Li**, Arnav Menon, John M. Dolan, Yorie Nakahira. "Maximal Safety Probability Quantification for Autonomous Drifting."IEEE International Conference on Intelligent Transportation Systems 2024.
[3] Peisong He, Leyao Zhu, **Jiaxing Li**, Shiqi Wang, Haoliang Li "Exposing AI-generated Videos: A Benchmark Dataset and a Local-and-Global Temporal Defect Based Detection Method." IEEE Transactions on Circuits and Systems for Video Technology.
[4] **Jiaxing Li**, Chenqi Kong, Shiqi Wang, Haoliang Li. "Two-branch Multi-scale Deep Neural Network for Generalized Document Recapture Attack Detection." IEEE International Conference on Acoustics, Speech, and Signal Processing 2023.

*Competition*

**Software Developer**, ABU-ROBOCON Competition Dec.2021 - Jun.2022

- Designed robot's aiming and shooting system, by using computer vision algorithm and Lidia point cloud map to locate the target and then used for controlling shooting motor, our team advanced to the Hong Kong regional final.

*Honors and Awards*

| | |
|---|---|
| ASMPT Technology Award | Jul.2023 |
| Final Year Project Competition (Gold) | May.2023 |
| Dean's List | Jul.2023, Jul.2022 |

*Skills*

Programming: Python, Julia, C, C++, Java
Software: ROS, Matlab, Carla, Isaac Gym, Unreal Engine
Theory: Convex Optimization, Stochastic Process, Control Theory, Discrete Signal Processing, Machine Learning