

Yi Loo

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RESEARCH INTERESTS

My Interest lies in human-AI/Robot interaction. Specifically, I am interested in building cooperative Deep RL agents that are **robust** to novel environments and partners.

Keywords: Human-AI Collaboration, (Multi-Agent) Reinforcement Learning, Human-Robot Collaboration, Embodied AI

RESEARCH PUBLICATIONS

Conference:

[1] **Yi Loo**, Akshunn Trivedi, Malika Meghjani, “*Pop-Dreamer: Efficient Generation of Diverse Cooperative Agents with World Models*”, To appear in 2025 Multi-disciplinary Conference on Reinforcement Learning and Decision Making (RLDM).

[2] **Yi Loo**, Chen Gong, Malika Meghjani, “*A Hierarchical Approach to Population Training for Human-AI Collaboration*”, International Joint Conference in Artificial Intelligence (IJCAI) 2023 (Also presented as a workshop paper at ICRA 2023 Workshop on Multi-Robot Learning) [[link](#)].

[3] Swee Kiat Lim, **Yi Loo**, Ngoc-Trung Tran, Ngai-Man Cheung, Gemma Roig, Yuval Elovici, “*DOPING: Generative Data Augmentation for Unsupervised Anomaly Detection with GAN*”, IEEE International Conference on Data Mining (ICDM) 2018 [[link](#)]

Workshop:

[4] **Yi Loo**, Swee Kiat Lim, Gemma Roig, Ngai-Man Cheung. “*Few-Shot Regression via Learned Basis Functions*”, International Conference on Learning Representations (ICLR) 2019 Learning from Limited Labeled Data Workshop. [[link](#)]

EDUCATION

Singapore University of Technology and Design (SUTD)

Sep 2021 to Present

- Ph.D. in Machine Learning/Robotics.
- Supervisor: Professor Malika Meghjani
- Expected graduation: 2025

Singapore University of Technology and Design (SUTD)

May 2014 to August 2017

- Bachelor of Engineering degree (Information Systems Technology & Design)
- Specialization in Artificial Intelligence

WORK EXPERIENCE

ST Engineering Electronics SUTD Cyber Security Laboratory

Oct 2017 to July 2021

Research Assistant

- Did research in machine learning methods/algorithms for cybersecurity problems. Advised by Prof. Ngai-Man Cheung.
- Worked on using Generative Adversarial Networks (GAN) to improve anomaly detection [3]
- Worked on a few-shot learning method tailored to regression problems [4].

nuTonomy Asia (Now known as Motional)

May 2016 to Aug 2016

Software Engineering Intern

GRANTS

Temasek Laboratories SEED Research Grant

Mar 2025

- Topic : Decentralized Multi-Robot Coordination and Task Decomposition
- Secured SGD \$200,000 in funding
- Primary grant author

REVIEWER

Conference: CASE 2023, ICRA 2024, IROS 2024, ICRA 2025, ICLR 2025

Journals : IEEE Robotics and Automation Letters, Autonomous Robots

TEACHING

Teaching Assistant, 50.007 : Machine Learning (Summer 2023)

Teaching Assistant, 50.033 : Foundations of Game Design and Development (Fall 2023)

SKILLS

Programming Languages: Python, Java, C++

Tools: Pytorch, Git, Docker, LangGraph, Huggingface API

Natural Languages: English, Mandarin, Malay, Japanese (beginner)