

Hon Tik Tse

Ph.D. Student | University of Alberta

✉ hontik@ualberta.ca |  Google Scholar

EDUCATION

- **Ph.D. in Computing Science** Sep 2024 - Present
University of Alberta Edmonton, AB, Canada
 - Supervisor: Marlos C. Machado
- **Master of Science in Computer Science** Aug 2022 - May 2024
University of Massachusetts Amherst Amherst, MA, USA
- **Bachelor of Science in Computer Science with Honours, First Class** Aug 2018 - Jul 2022
The Chinese University of Hong Kong Hong Kong

RESEARCH EXPERIENCE

- **University of Alberta**
 - **Ph.D. Research advised by Marlos C. Machado** Sep 2024 - Present
 - Laid the foundation for applying the default representation, a temporal representation capturing both transition and reward dynamics, in reinforcement learning [Corresponding paper accepted at NeurIPS 2025]
 - Proposed an objective for directly learning the principal eigenvector of the default representation using a neural network [Corresponding paper in submission]
- **University of Massachusetts Amherst**
 - **Research Project advised by Philip Thomas & Scott Niekum** June 2023 - May 2024
 - Proposed an algorithm for high confidence policy improvement in the reinforcement learning from human feedback (RLHF) setting, where a reward function is not available and only preferences over demonstrations are available [Corresponding paper accepted at RLC 2025]
- **University of Massachusetts Amherst**
 - **Research Project advised by Hava Siegelmann** Feb 2023 - May 2023
 - Adapted Deep Q-network (DQN) for a biologically plausible forward learning framework called Signal Propagation, achieving comparable performance as standard DQN in a few simple domains
- **The Chinese University of Hong Kong**
 - **Senior Year Research advised by Ho-fung Leung** Sep 2021 - May 2022
 - Extended ϵ -greedy to a hierarchical action space in multi-agent reinforcement learning [Corresponding paper available on arXiv]

PUBLICATIONS

- Peer-Reviewed
 - **Reward-Aware Proto-Representations in Reinforcement Learning**
Hon Tik Tse, Siddarth Chandrasekar, Marlos C. Machado
Advances in Neural Information Processing Systems (**NeurIPS**), 2025.
 - **High-Confidence Policy Improvement from Human Feedback**
Hon Tik Tse, Philip S. Thomas, Scott Niekum
Reinforcement Learning Journal (**RLJ**), 2025.
- Preprint
 - **DROGO: Default Representation Objective via Graph Optimization in Reinforcement Learning**
Hon Tik Tse, Marlos C. Machado
CoRR, abs/2602.00403, 2026. (In Submission)
 - **Exploiting Semantic Epsilon Greedy Exploration Strategy in Multi-Agent Reinforcement Learning**
Hon Tik Tse, Ho-fung Leung
CoRR, abs/2201.10803, 2022.

HONORS AND AWARDS

- University of Alberta
 - PhD Early Achievement Award 2026
 - Graduate Recruitment Scholarship 2025
- The Chinese University of Hong Kong
 - Shaw College Young Scholars 2022
 - Professor S.C. Loh Scholarship for Computer Science and Engineering 2021, 2022
 - Faculty of Engineering Dean's List 2019-2022
 - Professor Charles K. Kao Research Exchange Scholarship 2021
 - Outstanding Academic Performance - Gold Award 2021

TEACHING

- Course Development
 - CMPUT 628: Deep Reinforcement Learning Winter 2026
- Teaching Assistant
 - CMPUT 365: Introduction to Reinforcement Learning (Head TA) Fall 2026
 - CMPUT 291: Introduction to File and Database Management Winter 2025

TALKS

- Reward-Aware Proto-Representations in Reinforcement Learning Virtual Talk, NeurIPS 2025
- High-Confidence Policy Improvement from Human Feedback RLC, Aug 7 2025
- Reward-Aware Proto-Representations in Reinforcement Learning Amii AI Seminar, 25 July 2025
- Reward-Aware Proto-Representations in Reinforcement Learning RLAI Tea Time Talk, 23 July 2025

SERVICE

- Reviewer: ICML (Silver Reviewer 2026), NeurIPS(2026), ICLR (2026-2027), RLC (2025-2026), TMLR (2025)

SKILLS

- Programming Languages: Python (PyTorch, Jax)