

Thomas Jiralerspong

Academic CV - Website - Google Scholar - GitHub - LinkedIn - thomasjiralerspong@gmail.com - (514) 625-9308

Education

University of Montreal/Mila – Co-supervised by Prof. Yoshua Bengio & Prof. Doina Precup

Master's of Science – Computer Science (Thesis)

Sep 2023 – Present

Awards: NSERC Canada Graduate Scholarship (17 500\$), University of Montreal Discovery Master's Recruitment Scholarship (5 000\$)

McGill University

Bachelor of Science – Honours Computer Science – 4.00/4.00 GPA, First Class Honours, Dean's Honour List

Sep 2020 – Apr 2023

Awards: J. W. McConnell Major Entrance Scholarship (9 000\$), McGill Mobility Bursary for Exchanges (6 000\$)

Exchange semester at the National University of Singapore

Research Experience

Waabi

Research Intern – Toronto, Ontario

PyTorch, Python

Jun 2023 – Aug 2023

Project: Realistic and controllable probabilistic traffic simulation using a transformer based variational autoencoder

Mila/McGill University – Supervised by Prof. Blake Richards

Undergraduate Researcher – Montreal, Quebec

PyTorch, Python

Sep 2022 – Aug 2023

Project: Contrastive learning to discover important states for reinforcement learning in sparse reward environments

Mila/McGill University – Supervised by Prof. Doina Precup

Undergraduate Researcher – Montreal, Quebec

TensorFlow, Python

Jan 2022 – Aug 2023

Project: Model-based reinforcement learning with affordance aware tree-search planning directly from pixels

Vector Institute for Artificial Intelligence

Machine Learning Research Intern – Toronto, Ontario

Python

Sep 2022 – Dec 2022

Project: Model-based reinforcement learning for HVAC control

Project X – Machine Learning Research Competition

Co-Leader of McGill's Team, received highest score out of 25 submitted papers

PyTorch, Python

Jun 2021 – Feb 2022

Project: Deep offline conservative reinforcement learning for mechanical ventilation treatment

Software Development Experience

Amazon Web Services (AWS) – S3 Team

Software Development Engineer Intern – Vancouver, British Columbia

Python, JavaScript

May 2022 – Jul 2022

Square Enix

Software Development Intern – Montreal, Quebec

C#

May 2021 – Aug 2021

Expedia Group

Software Development Intern – Montreal, Quebec

JavaScript, TypeScript, React

Jun 2019 – Aug 2019

Selected Publications

Contrastive Retrospection: honing in on critical steps for rapid learning and generalization in RL

C. Sun, W. Yang, **T. Jiralerspong**, D. Malenfant, B. Alsbury-Nealy, Y. Bengio, B. Richards

NeurIPS 2023

Forecaster: Towards Temporally Abstract Tree-Search Planning from Pixels

T. Jiralerspong*, F. Kondrup*, D. Precup, K. Khetarpal

GenPlan Workshop at NeurIPS 2023

Towards Safe Mechanical Ventilation Treatment Using Deep Offline Reinforcement Learning

F. Kondrup*, **T. Jiralerspong***, E. Lau*, N. de Lara, J. Shkrob, M.D. Tran, D. Precup, S. Basu.

AAAI 2023

Delta-AI: Local Objectives for Amortized Inference in Sparse Graphical Models

J. Falet*, H. Lee*, N. Malkin*, C. Sun, D. Secieru, **T. Jiralerspong**, D. Zhang, G. Lajoie, Y. Bengio

ICLR 2024 (Submitted)

A Comparison of Classical and Deep Reinforcement Learning Methods for HVAC Control

M. Wang, J. Willes, **T. Jiralerspong**, M. Moezzi

UIC 2023

Deep Conservative Reinforcement Learning for Personalization of Mechanical Ventilation Treatment

F. Kondrup*, **T. Jiralerspong***, E. Lau*, N. de Lara, J. Shkrob, M.D. Tran, D. Precup, S. Basu

RLDM 2022

Network Analysis of the iNaturalist Citizen Science Community

Y. Liu* & **T. Jiralerspong***

Preprint 2022

*Equal Contribution

Selected Awards

Chosen to attend the 10th **Heidelberg Laureate Forum** (200 most promising young researchers selected from all over the world)

2023

Winner of **ProjectX**, a machine learning research competition organized by the University of Toronto

2022