

# Thomas Jiralerspong

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

## Education

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### 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 – 4.0/4.0 GPA

Sep 2020 – Apr 2023

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

## Research Experience

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### Waabi

Research Intern – Toronto, Ontario

PyTorch, Python

Jun 2023 – Aug 2023

**Project:** Realistic and controllable probabilistic traffic simulation using variational autoencoders

### 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

## Publications

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### Contrastive Introspection (ConSpec) to Rapidly Identify Invariant Prototypes for Success in RL

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

(Accepted) NeurIPS 2023

### Forecaster: Towards Temporally Abstract Tree-Search Planning from Pixels

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

(Submitted) NeurIPS 2023 GenPlan Workshop

### 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

### 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

### Modelling the Evolution of Arctic Sea Ice Extent

X. Fan\*, **T. Jiralerspong\***, K. Zhu\*, B. Nasri, C. Genest

Preprint 2020

\*Equal Contribution

## Software Development Experience

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### 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

## Projects

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### Rainbow Q-Learning in Jelly-Bean World

2022

### Generating Music Using a LSTM Network with Attention

2020