

Thomas Jiralerspong

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EDUCATION

Université de Montréal/Mila

M.Sc. – Computer Science – Co-supervised by Prof. Yoshua Bengio & Prof. Doina Precup Sep 2023 – Present

- **Awards:** NSERC Canada Graduate Scholarship (17 500\$), UdeM Discovery Scholarship (5 000\$)

McGill University

B.Sc. – Honours Computer Science – GPA:4.00/4.00

Sep 2020 – May 2023

RESEARCH EXPERIENCE

Waabi

Deep Learning Research Intern - Toronto, Canada

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

PyTorch, Python

Jun 2023 – Sep 2023

Reasoning and Learning Lab – Mila/McGill University

Research Intern – Montreal, Canada – Supervised by Prof. Doina Precup

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

TensorFlow, Python

Jan 2022 – Aug 2023

Learning in Neural Circuits Lab – Mila/McGill University

Research Intern – Montreal, Canada – Supervised by Prof. Blake Richards

- **Project:** Contrastive learning to discover critical states for reinforcement learning in sparse reward environments

PyTorch, Python

Sep 2022 – Aug 2023

Vector Institute for A.I.

Machine Learning Research Intern – Toronto, Canada

- **Project:** Model-based reinforcement learning for HVAC control

PyTorch, Python

Sep 2022 – Dec 2022

Project X - Machine Learning Research Competition

Co-leader of McGill's Team – Received highest score out of 25 submitted papers

- **Project:** Deep offline conservative reinforcement learning for mechanical ventilation treatment

PyTorch, Python

Jun 2021 – Feb 2022

SOFTWARE DEVELOPMENT EXPERIENCE

Amazon Web Services (AWS) – S3 Team

Software Development Engineer Intern – Vancouver, Canada

Python, JavaScript

May 2022 – Jul 2022

Square Enix

Software Development Intern – Montreal, Canada

C#

May 2021 – Aug 2021

Expedia Group

Software Development Intern – Montreal, Canada

JavaScript, TypeScript, React

Jun 2019 – Aug 2019

SELECTED PUBLICATIONS

Efficient Causal Graph Discovery Using Large Language Models

(Submitted)

T. Jiralerspong*, X. Chen*, Y. More, V. Shah, Y. Bengio

ICML 2024

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

(Accepted)

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

ICLR 2024

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

*Equal Contribution

AWARDS & ACHIEVEMENTS

Chosen as one of the 200 most promising young researchers in the world by the [Heidelberg Laureate Forum](#)

2023

Winner of [Project X 2021](#) (25 000\$)

2021