

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:** FRQNT Master's Scholarship (40 000\$) (Rank #1), NSERC Canada Graduate Scholarship (17 500\$)

McGill University

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

Sep 2020 – May 2023

RESEARCH EXPERIENCE

Occam AI

LLM Research Intern - New York City, United States

- **Project:** Automated SQL query generation using multi-agent LLMs

PyTorch, Python

Jun 2024 –Present

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

SOFTWARE DEVELOPMENT EXPERIENCE

Amazon Web Services (AWS) – S3 Team

Software Development Engineer Intern – Vancouver, Canada

Python, JavaScript

May 2022 – Jul 2022

Expedia Group

Software Development Intern – Montreal, Canada

JavaScript, TypeScript, React

Jun 2019 – Aug 2019

SELECTED PUBLICATIONS

Expressivity of Neural Networks with Random Weights and Learned Biases

(Submitted)

E. Williams, A. Ryoo*, **T. Jiralerspong***, A. Payeur, M. Perich, L. Mazzucatto, G. Lajoie.

NeurIPS 2024

Efficient Causal Graph Discovery Using Large Language Models

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

ICLR Workshop 2024

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**

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.

NeurIPS Workshop 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