

THOMAS JIRALERSPONG

+1 514 625 9308 | @thomasjiralerspong@gmail.com | LinkedIn | GitHub | Website | Google Scholar

Citizenships: Canadian and Italian (European Union)

EDUCATION

Université de Montréal/Mila

PhD – Computer Science – Co-supervised by **Prof. Yoshua Bengio** & **Prof. Doina Precup** Sep 2023 – May 2025 (Expected)

- **Awards:** FRQNT Scholarship (40 000\$) (Rank #1), NSERC Canada Graduate Scholarship (17 500\$)

Massachusetts Institute of Technology (MIT)

Brains, Minds & Machines Summer Course

2024

McGill University

B.Sc. – Honours Computer Science – GPA:4.00/4.00 – Supervised by **Prof. Blake Richards**

Sep 2020 – May 2023

INDUSTRY RESEARCH EXPERIENCE

Occam AI

Research Scientist - New York City, United States

PyTorch, Python

Jun 2024 – Present

- **Projects:** Optimization of interactions between network of LLMs, automated SQL query generation using LLMs

Waabi

Deep Learning Research Intern - Toronto, Canada

PyTorch, Python

Jun 2023 – Sep 2023

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

Vector Institute for A.I.

Machine Learning Research Intern – Toronto, Canada

PyTorch, Python

Sep 2022 – Dec 2022

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

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 Engineer Intern – Montreal, Canada

JavaScript, TypeScript, React

Jun 2019 – Aug 2019

SELECTED PUBLICATIONS

[Towards A Formal Theory of Compositionality](#)

(Submitted)

E. Elmoznino*, **T. Jiralerspong***, Y. Bengio, G. Lajoie.

ICLR 2025

[Geometric Signatures of Compositionality Across a Language Model's Lifetime](#)

(Submitted)

J. Lee*, **T. Jiralerspong***, L. Yu, Y. Bengio, E. Cheng.

ICLR 2025

[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.

ICLR 2025

[Efficient Causal Graph Discovery Using Large Language Models](#)

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

ICLR Workshop 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 math & CS by the **Heidelberg Laureate Forum**

2023

Winner of **Project X 2021** (25 000\$)

2021