

# Thomas Jiralerspong

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## EDUCATION

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### 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

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### 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

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### 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

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### *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

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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