Thomas Jiralerspong

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

Education

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

Waabi *PyTorch, Python*
Research Intern – Toronto, Ontario Jun 2023 – Aug 2023

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

Mila/McGill University – Supervised by Prof. Blake Richards *PyTorch, Python*
Undergraduate Researcher – Montreal, Quebec 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 *TensorFlow, Python*
Undergraduate Researcher – Montreal, Quebec Jan 2022 – Aug 2023

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

Vector Institute for Artificial Intelligence *Python*
Machine Learning Research Intern – Toronto, Ontario Sep 2022 – Dec 2022

Project: Model-based reinforcement learning for HVAC control

Project X – Machine Learning Research Competition *PyTorch, Python*
Co-Leader of McGill's Team, received highest score out of 25 submitted papers Jun 2021 – Feb 2022

Project: Deep offline conservative reinforcement learning for mechanical ventilation treatment

Publications

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

Amazon Web Services (AWS) – S3 Team *Python, JavaScript*
Software Development Engineer Intern – Vancouver, British Columbia May 2022 – Jul 2022

Square Enix *C#*
Software Development Intern – Montreal, Quebec May 2021 – Aug 2021

Expedia Group *JavaScript, TypeScript, React*
Software Development Intern – Montreal, Quebec Jun 2019 – Aug 2019

Projects

Rainbow Q-Learning in Jelly-Bean World 2022
Generating Music Using a LSTM Network with Attention 2020