

Alexandre Piché

Curriculum Vitae

☎ (+1) 514 943 9865
✉ alexandreliche@gmail.com

Education

- 2017–2024E **Université de Montréal.**
Ph.D. in Computer Science, Mila.
Thesis topics: Reinforcement Learning, search, and self-evaluation.
- 2015–2017 **McGill University.**
M.Sc. Mathematics and Statistics.
Thesis topic: Bayesian Nonparametrics.
- 2012–2015 **McGill University.**
B.A. Honours in Economics, Minor in Mathematics with distinction.

Selected Publications

- 2024 **LLMs can learn self-restraint through iterative self-reflection**, *Alexandre Piché, Aristides Milios, Dzmitry Bahdanau, Chris Pal.*
Submitted
- 2023 **Can large language models build causal graphs?**, *Stephanie Long, Tibor Schuster, Alexandre Piché.*
Causal Machine Learning for Real-World Impact Workshop (CML4Impact) at NeurIPs 2022
- 2023 **Bridging the Gap Between Target Networks and Functional Regularization**, *Alexandre Piché, Valentin Thomas, Joseph Marino, Gian Maria Marconi, Valentin Thomas, Chris Pal, and Emtiyaz Khan.*
Transactions on Machine Learning Research 2023.
- 2021 **Iterative Amortized Policy Optimizations**, *Joseph Marino, Alexandre Piché, Alessandro Davide Ialongo, and Yisong Yue.*
Neural Information Processing Systems 2021.
- 2019 **Probabilistic Planning with Sequential Monte Carlo Methods**, *Alexandre Piché*, Valentin Thomas*, Cyril Ibrahim, Yoshua Bengio, and Chris Pal, *equal contribution.*
International Conference of Learning Representation 2019
Contributed talk at the *Infer to Control workshop* @ Neural Information Processing Systems 2018.
- 2018 **Reward Estimation for Variance Reduction in Deep Reinforcement Learning**, *Joshua Romoff, Peter Henderson, Alexandre Piché, Vincent François-Lavet, and Joelle Pineau.*
Conference of Robot Learning 2018
Workshop @ International Conference of Learning Representation 2018.

Work Experience and Volunteering

- 2022–Now **ServiceNow Research.**
Senior Research Scientist
Lead the online reinforcement learning effort for conversational agents.
Lead a project on meta-prompting to improve the factuality of language models.

2020-2021 **Approximate Bayesian Inference - RIKEN.**

Research Intern

Investigate the use of Bayesian regularization to improve Deep Q-learning algorithms learning speed and stability.

Fall 2019 **DeepMind.**

Research Intern

Investigate Bayesian reinforcement learning for exploration in continuous control.

2018-2019 **Element AI.**

Research Intern

Investigate the use of sampling in model-based reinforcement learning.

Co-lead on the Sequential Monte Carlo Planning paper.

Teaching Experiences

Winter 2018 **École Polytechnique de Montréal.**

Teaching Assistant

Intelligence artificielle : techniques probabilistes et d'apprentissage (Graduate level course)

2015-2017 **McGill University.**

Teaching Assistant

Introduction to Linear Algebra

Introduction to Statistics

Technical Skills

Programming SCIENTIFIC PYTHON, R, GIT, VI