Alexandre Piché

Curriculum Vitae

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Education

2024	**Université de Montréal**. Ph.D. in Computer Science, Mila. **Thesis:** Searching for Q^*.
2017	**McGill University**. M.Sc. Mathematics and Statistics. **Thesis:** Bayesian nonparametric modelling of heterogeneous groups of censored data.

Work Experience

2022-Now	**ServiceNow Research**, *Montréal, Canada*. Senior Research Scientist Project lead for PipelineRL, an open-source RL framework for LLMs. Achieved 200% training throughput improvement via sequence packing optimization. Enabled Multi-Modal RL with ChartQA visual reasoning implementation. Replicated Open Reasoner Zero results while doubling system throughput using novel inflight weight update.
Sept 2019 - Jan 2020	**Google DeepMind**, *London, United Kingdom*. Research Intern Investigated Bayesian reinforcement learning for exploration in continuous control.

Selected Publications

2025	**Piché, A.**, Pardinas, R., Kamalloo, E., Bahdanau, D., *PipelineRL: Faster on-policy Reinforcement Learning for long sequence generation*, Submitted to Neurips 2025.
2024	**Piché, A.**, Milios, A., Bahdanau, D., Pal, C., *LLMs can learn self-restraint through iterative self-reflection*, arXiv preprint arXiv:2405.13022.
2023	Long, S., **Piché, A.**, Zantedeschi, V., Schuster, T., Drouin, A., *Causal Discovery with Language Models as Imperfect Experts*, Structured Probabilistic Inference & Generative Modeling (SPIGM) workshop at ICML 2023.
2023	Long, S., Schuster, T., **Piché, A.**, *Can large language models build causal graphs?*, Causal Machine Learning for Real-World Impact Workshop (CML4Impact) at NeuRIPS 2022.
2023	**Piché, A.**, Thomas, V., Marino, J., Pardinas, R., Marconi, G. M., Pal, C., Khan, M. E., *Bridging the Gap Between Target Networks and Functional Regularization*, Transactions on Machine Learning Research, https://openreview.net/forum?id=BFvoemrmqX.
2021	Marino, J., **Piché, A.**, Ialongo, A. D., Yue, Y., *Iterative amortized policy optimization.*, Advances in Neural Information Processing Systems, 34, 15667-15681..
2018	**Piché, A.**, Thomas, V., Ibrahim, C., Bengio, Y., Pal C., *Probabilistic planning with sequential monte carlo methods*, In International Conference on Learning Representations.