

Jean Harb

jharb3@gmail.com
www.cs.mcgill.ca/~jmerhe1
Phone: +1 (514) 979-1334

github.com/jeanharb
Python, Jax, PyTorch, Theano
English, French

Education **McGill University**

Ph.D. Candidate, Computer Science, 2016-Present
Supervisor: Doina Precup
Lab: Mila / RL Lab
Fields: Machine Learning, Reinforcement Learning, Deep Learning
Expected end date: 09/2021

McGill University

M.S., Computer Science, 2014-2016
Supervisor: Doina Precup
GPA: 3.88/4.0

HEC Montreal

B.B.A., Double Major in Finance and Economics, 2008-2013
GPA: 3.51/4.3

Master's Thesis **Learning Options in Deep Reinforcement Learning**

Developed and applied the Option-Critic framework to the Atari 2600 environment. This allows a reinforcement learning agent to automatically learn temporally extended actions, while still maximizing the expected return.

Work Experience **DeepMind**

Research Intern, 01/2020 - 02/2021
Developed Policy Evaluation Networks, a neural network capable of taking any reinforcement learning policy as input and predicting its expected return.

DeepMind

Research Intern, 04/2018 - 10/2018
Focused on model-based reinforcement learning algorithms to build value functions capable of zero-shot policy evaluation.

OpenAI

Research Intern, 02/2017 - 06/2017
Worked on hierarchical reinforcement learning and multi-agent communication in the Deep Reinforcement Learning setting. This research allowed multiple agents to learn to communicate to solve tasks more efficiently by coordinating.

Maluuba (now Microsoft Research)

Research Intern, 04/2015 - 08/2015
Created a deep learning model using recurrent neural networks to automate the learning process of a personal virtual assistant. This improved natural language understanding capabilities and allowed for easier domain growth.

Awards **NSERC – Canada Graduate Scholarships – Doctoral Program**
Competitive national scholarship program for Science and Engineering research.

Grad Excellence Award – McGill University
Award for new Ph.D. students with outstanding performance during their Master's degree.

Selected Publications and Preprints **Policy Evaluation Networks**
Jean Harb, Tom Schaul, Doina Precup, Pierre-Luc Bacon
ArXiv Preprint 02/2020

When Waiting is not an Option : Learning Options with a Deliberation Cost
Jean Harb*, Pierre-Luc Bacon*, Martin Klissarov, Doina Precup
Thirty-Second AAAI Conference on Artificial Intelligence (AAAI), 2018

Multi-Agent Actor-Critic for Mixed Cooperative-Competitive Environments
Ryan Lowe*, Yi Wu*, Aviv Tamar, **Jean Harb**, Pieter Abbeel, Igor Mordatch
Neural Information Processing Systems (NIPS), 2017

The Option-Critic Architecture
Pierre-Luc Bacon, **Jean Harb**, Doina Precup
Thirty-First AAAI Conference on Artificial Intelligence (AAAI), 2017

Outstanding Student Paper Award

Investigating Recurrence and Eligibility Traces in Deep Q-Networks
Jean Harb, Doina Precup
NIPS 2016, Deep Reinforcement Learning Workshop