

SÉBASTIEN LACHAPELLE

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EDUCATION

BS University of Montreal, Mathematics and Economics 2017

PhD student at University of Montreal (Mila) in Machine Learning since 2018

RESEARCH EXPERIENCE

Mila – Quebec Artificial Intelligence Institute, Montreal since 2017
Master/PhD student (Master not completed)

- Learning directed acyclic graphs via continuous constrained optimization using artificial neural networks for causal discovery
- Used artificial neural network to predict solution summaries to integer programs
- Worked at the intersection of Operational Research and Machine Learning

Element AI, Montreal 2019
Research Intern

- Neural Autoregressive Flows for causal discovery

DAMÉCO, Montreal
Intern 2016

- Estimation of a demand system for Quebec consumers

PUBLICATIONS

Brouillard, P., Lachapelle, S., Lacoste, A., Lacoste-Julien, S., Drouin, A. (2020). *Differentiable Causal Discovery from Interventional Data*. arXiv:2007.01754 (NeurIPS 2020)

Lachapelle, S., Brouillard, P., Deleu, T., Lacoste-Julien, S. (2020). *Gradient-Based Neural DAG Learning*. arXiv:1906.02226 (ICLR 2020)

Bengio, Y., Deleu, T., Rahaman, N., Ke, R., Lachapelle, S., Bilaniuk, O., Goyal, A., and Pal, C. (2020). *A Meta-Transfer Objective for Learning to Disentangle Causal Mechanisms*. arXiv:1901.10912 (ICLR 2020)

Larsen, E., Lachapelle, S., Bengio, Y., Frejinger, E., Lacoste-Julien, S., & Lodi, A. (2019). *Predicting Tactical Solutions to Operational Planning Problems under Imperfect Information*. arXiv:1901.07935 (submitted to INFORMS Journal on Computing)

PRESENTATIONS

Element AI Science Talk – Oral

“Learning Causal Structures via Gradient-Based Optimization”, Montreal, Quebec, Canada.

NeurIPS 2019 Workshop on Solving Inverse Problems with Deep Networks – Poster

“Gradient-Based Neural DAG Learning”, Vancouver, British-Columbia, Canada.

Montreal AI Symposium 2019 – Oral

“Gradient-Based Neural DAG Learning”, Montreal, Quebec, Canada.

Deep Learning and Reinforcement Learning Summer School 2019 – Poster

“Gradient-Based Neural DAG Learning”, Edmonton, Alberta, Canada.

Optimization Days 2018 – Oral

“Predicting solution summaries to integer linear programs under imperfect information with machine learning”, Montreal, Quebec, Canada.

DIMACS 2018 – Poster

“Predicting solution summaries to integer linear programs under imperfect information with machine learning”, Bethlehem, Pennsylvania, United-States.

HONORS AND AWARDS

IVADO excellence scholarship for PhD

2020-2024

Four years scholarship awarded to PhD students based on grades and research proposal

Bourse d’excellence du CIRRELT – Accueil au doctorat

2018 – 2019

Prize awarded to seven PhD students (before they completed one year and a half) based on their grades, research aptitudes and implication in CIRRELT

Prix d’excellence des anciens – University of Montreal

2017

Prize awarded to the student finishing his BS in Mathematics and Economics with the highest GPA in his cohort

Bourse de la doyenne – University of Montreal

2016

Excellence prize awarded to 13 students from the Faculté des arts et des sciences

Roger-Dehem award in microeconomics – University of Montreal

2016

Excellence prize in microeconomics

Robert-Lacroix award in macroeconomics – University of Montreal

2016

Excellence prize in macroeconomics

COMMUNITY SERVICE

Volunteering at the Montreal AI Symposium

Montreal, August 28th 2018