

# NADHIR HASSEN

## Graduate Student

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## EXPERIENCE

### Research Thesis - University of Montreal-Polytechnique

#### Topic : Approximate Inference for Bayesian Network

📅 Work in progress 📍 Montreal, QC

### Research Student - IBM-Canada-Mila Quebec

#### Project : Bayesian Deep Learning Workflows Through Hyperparameter Optimization

📅 March 2020- Current 📍 Montreal, QC

- Search new idea to optimise and automate ML algorithm for Orion Project.
- Efficiently tune machine learning using Hyperparameter optimisation for neural networks.
- Research paper review relevant to Bayesian optimisation.
- Algorithm development using Pytorch/GPy/BackPACK.

### Teacher Assistant

#### Stochastic Process -MTH8303

📅 Fall 2021-Lecture note preparation 📍 Montreal, QC

- Application of Stochastic Processes for Science and Engineering (Graduate level).
- Include: Markov chain, Markov Decision Process, Signal Processing, Birth-Death process, Renewal Theory.

### Teacher Assistant

#### Probability and Statistics for Engineering-MTH2302

📅 Winter 2020, Fall 2021 📍 Polytechnique Montreal, QC

- Probability and Stochastic process (undergraduate level)

### Undergraduate Research Project - UQÀM

#### Semi-parametric optimization for yield curve estimation

📅 April-June 2019 📍 Montreal, QC

- Use of Optimization techniques using Constrained Least-square methods.
- Estimating the Yield Curve using the Nelson-Siegel Model.
- Use of different library packages including cvxopt in Python programming language.

### Quantitative Analyst Intern

#### Fiera Capital

📅 May 2018 – June 2019 📍 Montreal, QC

- Analysis of financial time series, clustering methods and forecasting.
- Produce client segmentation analysis for churn prediction using supervised and unsupervised methods.
- Perform data cleaning and produce statistical report for Risk management department.

## PUBLICATIONS

- Nadhir Hassen et al 2021, Kronecker-factored approximation (KFAC) of the Laplace-GGN for Continual Learning (under review)
- Nadhir Hassen et al 2021, Orion: Asynchronous Distributed Hyperparameter Optimization (Journal of Machine Learning Research)

## EDUCATION

### M.Sc. in Applied Mathematics (Research)

#### Polytechnique Montreal

📅 Fall 2019-August 2021 (Expected)

### B.S. in Mathematics (Statistics major)

#### UQAM

📅 June 2019

## CLASS CURRICULUM SAMPLE

### University of Montreal

- Probabilistic Graphical Model (Fall 2021)
- Reinforcement Learning (Winter 2020)
- Optimization/Dynamic Programming (Fall 2019)
- Representation Learning-Deep Learning (Winter 2020)
- Continual Learning (Winter 2021)

## Languages

English  
French  
German

