Ayoub El Hanchi

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Education

McGill University   Montreal, QC
M.Sc. Mathematics and Statistics   *May 2019 - April 2020 (Expected)*

+ Supervisor: Prof. David Stephens.
+ Thesis Track.
+ Relevant coursework: Advanced Real Analysis, Mathematical Foundations of Machine Learning (COMP 598), Probabilistic Graphical Models (COMP 767, Fall), Reinforcement Learning (COMP 767, Winter), Applied Machine Learning.

McGill University   Montreal, QC
B.Sc. Joint Honours Mathematics and Computer Science   *September 2016 - April 2019*

+ GPA: 3.86/4.0.
+ First class Honours.

Projects

Scaling up MCMC using adaptive data subsampling.
Developed an adaptive importance sampling scheme for SAGA that further reduces the variance of the gradient and loss estimates and applied it to SGLD and subsampled Metropolis-Hastings.

PyTorch-VR.   *https://github.com/Aelhanchi/Pytorch-VR*
Implemented popular variance reduced optimization and sampling algorithms in PyTorch.

Statistical learning under a non-iid data generating process.
Studied learning guarantees using Rademacher complexity in non-stationary environments.

Detecting Alzheimer's disease based on MRI images of the brain
Built a Bayesian 3D-CNN model for the detection of Alzheimer's disease from MRI images of the brain using the Alzheimer's Disease Neuroimaging Initiative (ADNI) dataset.

Awards

Science Undergraduate Research Award   *May 2018*
Faculty of Science, McGill University

Talks

Presentation at the McGill Artificial Intelligence Society   *April 2019*
Mathematics and Statistics Undergraduate Research Conference   *September 2018*