Alexandre Day

Summary

- Created a highly scalable machine learning pipeline for analyzing terabytes of single-cell data for cancer immunotherapy applications.
- With 7 years of experience in high-performance C++ programming and over 3 years in Python, now seeking to transfer skills from PhD towards data science.

Qualify for TN and F1-OPT visa

alexandre.day@mg.thedataincubator.com

(617) 460 1270

alexandreday.github.io

Machine Learning & Programming Experience

National Institute of Health 2015 – Present

Collaboration/Machine learning project

- Main developper of HAL, an end-to-end Python/C++ pipeline to perform interpretable and robust clustering of high-dimensional big data
- Application of HAL for immunotherapy research (current paper under review in Nature medicine)

Boston University Aug 2014 – Dec 2018

Ph.D Candidate

- Developed reinforcement learning methods for optimally preparing quantum states
- Contributed to an extensive machine learning review (120 pages).

University of Waterloo Dec 2013 – Aug 2014

Master's of Science

- Developed performant algorithms for computing the properties of quantum materials

Awards

2014–2017 NSERC from Canada Doctoral scholarship (63000$)

2014 NSERC from Canada Master's scholarship (17500$)

Core Technical Skills

Programming	**Python, C/C++, bash, Mathematica, Matlab, Javascript, HTML/CSS**
Machine Learning	**Ensemble methods, unsupervised learning, deep learning, Keras, TensorFlow, model validation.**
Data visualization	**d3.js, Matplotlib, Plotly**

Education

2014 – Dec 2018 **Ph.D**
Machine Learning & Physics
Boston University

2013 – 2014 **Master's**
Condensed matter Physics
University of Waterloo

2009 – 2012 **Bachelor's**
Physics
University of Sherbrooke

Selected Publications

Co-authored over **10 publications** with h-index of 7 and over 240 citations.

Sep 2018 Reinforcement Learning in Different Phases of Quantum Control (Physical Review X)

Sep 2018 Defective glycosylation and broader pathogenesis of XMEN disease (under review in **Nature Medicine**)

May 2018 A high-bias, low-variance introduction to Machine Learning for physicists (under review)