Alexandre Brilhante

+1 514 970-0513
alexandre.brilhante@gmail.com

http://linkedin.com/in/brilhana
http://brilhana.github.io

Education		
	Université de Montréal	Montréal, QC, Canada
	Bachelor of Science, Computer Science	May 2018
	École des sciences de la gestion (ESG UQAM)	Montréal, QC, Canada
	Bachelor of Business Administration, Finance	2012

Experience

Université de Montréal — Montréal, QC, Canada
Research Assistant, Department of Computer Science and Operations Research — 2017-2018
- Researched nonlinear stochastic programming methods for maximum likelihood estimation of large-scale multinomial mixed logit models.
- Implemented Newton, quasi-Newton using BFGS and SR1 Hessian approximations and trust regions methods in Julia.
- Proposed a novel approach based on stochastic gradient descent using the truncated conjugate gradient and benchmarked its estimation quality and convergence speed.

Montpak International — Laval, QC, Canada
Logistics Clerk — 2013, 2015-2016
- Automated pricing management of nearly 900 products.
- Improved inventory management of over 65,000 units with limited shelf life reducing warehouse costs by 60%.

Open Source

DiscreteChoice.jl
- Implemented numerical optimization methods in Julia for maximum likelihood estimation of logit and mixed logit models.

Fixed Income
- Developed a proof of concept for issuing fixed income securities on the Ethereum blockchain.

Options Pricing
- Developed pricing models for vanilla and exotic options in C++ using Black-Scholes, binomial trees and Monte Carlo methods.

Project

Classifying Dementia in Parkinson's Disease
- Identified the best cognitive markers of dementia in Parkinson's disease in collaboration with a neuropsychologist and built a deep neural network model using TensorFlow to classify dementia cases with 83% accuracy.

Independent Coursework

Financial Engineering and Risk Management, Columbia University	2018
Interest Rate Models, École polytechnique fédérale de Lausanne	2018

Skills

Programming: Julia, Python, R, C++, C#, Java, JavaScript, MATLAB
Tools: pandas, Numpy/SciPy, scikit-learn, TensorFlow, SQL, Git
Languages: French, English

Activities

Co-Organizer, Montréal Julia Programming Language Meetup	2017-2018