

ALIN MORARIU

Leveraging modern statistical methods to make data-driven decisions

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PROFESSIONAL EXPERIENCE

Data Science Intern

Ontario Teachers' Pension Plan

📅 May 2020- Dec. 2020 📍 Toronto

- Implemented machine learning models to forecast trading costs for futures contracts and options
- Identify costly trading behaviour through detailed trade performance reports on options and futures contracts

Actuarial Analyst - Consumer Markets Pricing

Manulife Financial

📅 Sept. 2017 – Exp. Dec. 2017 📍 Toronto

- Standardized pricing models across health, dental, and travel products to eliminate need of per-product updates for repricing purposes
- Revitalized travel pricing methodology using fundamental machine learning techniques to predict claim patterns and highlight risk factors

Investment Consulting Analyst

Mercer (Canada) Limited

📅 May 2017 – Aug. 2017 📍 Toronto

- Monitored quarterly performance of funds in order to optimize asset allocation of institutional clients
- Automated significant portion of daily data entry process with VBA Macros to half run time of asset reconciliation

Pension Consulting Analyst

Mercer (Canada) Limited

📅 Jan. 2016 – May. 2016 📍 Toronto

- Performed funding valuation to determine updated liabilities resulting in savings of \$100,000 annually
- Linearized single benefit and PSPA calculations with the creation of an Excel-based calculator to reduce manual calculations by 90%

Lifeguard and Swim Instructor

City of Toronto, YMCA, Toronto Pan. Am. Sports Centre

📅 Dec. 2012 – Jan. 2018 📍 Toronto

- Developed methods for children and adults in order to improve swimming abilities

STRENGTHS

Systematic problem solving Detail oriented

Production level code Collaborative research

Python TensorFlow R Statistical analysis

Bayesian inference Spatio-temporal odels

EDUCATION

Ph.D. Candidate – Statistics

Lancaster University - Bayes4Health Group

📅 Feb 2021 - Sept 2024 📍 Lancaster, U.K.

- **Thesis:** Scalable inference methods for state transition models with applications to stochastic epidemiology

M.Sc. – Applied Mathematics

Toronto Metropolitan University - Financial Mathematics

📅 Sept 2019 – June 2021 📍 Toronto

- **Thesis:** Financial Bandits - Development of Thompson sampling for financial data

HB.Sc. – Statistics & Mathematics

University of Toronto

📅 Sept 2014 – June 2019 📍 Toronto

ACADEMIC EXPERIENCE

Teaching Assistant

Lancaster University, Toronto Metropolitan University, University of Toronto

📅 Jan 2018 – Present 📍 Toronto

- Lead tutorials and office hours to strengthen understanding of analytical concepts in undergraduate courses
- **Courses:** Statistical Reasoning, Data Analysis I, Statistical Methods for Machine Learning I, Probability & Statistics I

Summer Research Student

St. Michael's Hospital

📅 May 2019 – Aug. 2019 📍 Toronto

- Spatio-temporal modeling of Personal Attrition Factors for prediction of lung cancer deaths in India

Research Assistant

University of Toronto

📅 Jan. 2018 – May 2019 📍 Toronto

- **Department of Statistics:** Evaluated effectiveness of the university's statistics programs to revamp curriculum
- **Risk Lab:** Indexing methodologies for cryptocurrencies

RESEARCH AREAS

Probabilistic programming Software development

Missing data Adaptive and non-centering MCMC

High dimension parameter spaces