Saumitra Mazumder

SAMazumder

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About Me

Experience in model development and model validation/audit. Solid knowledge of a range of quantitative finance, risk management (e.g., VaR/Expected Shortfall for Market Risk, credit portfolio models, stress testing), derivatives models and pricing theory. Thorough and analytical; able to applying logic to solve problems. Excellent verbal and written communication skills. Proven ability to collaborate effectively with diverse individuals and strengthen relationships to achieve well-designed solutions.

Education

M.Sc. Applied Mathematics
Toronto Metropolitan University
(formerly Ryerson University)
2020-2022
Ryerson Graduate Fellowship, Graduate Development Award, Mathematics Graduate Award

B.Sc. Mathematics and Economics
Toronto Metropolitan University
(formerly Ryerson University)
2015-2019
Dean's List 2016, 2017
Ryerson Barbell Club, Ryerson Math Problem Solving Club

Knowledge

Financial Mathematics	Financial Time Series Analysis, Risk Measures, Derivative Pricing, Regression, Monte Carlo/Copulae/Variance-Covariance Methods.
Tools	R (Dplyr, QRM, xts, dynlm), Python (NumPy, SciPy, PANDAS, XGBoost. SKLearn), MATLAB, LaTeX, SQL.

Employment History

Current — Ernst & Young LLP — Toronto, Canada
Staff consultant in the Financial Services Risk Management Group - Consulting Practice.

2022-2022 — Scotiabank — Velocity Intern - Model Audit, Credit Risk. Toronto, Canada
Member of the team auditing ECL models (PD, CCI, EAD, LGD) per IFRS 9 guidance provided by OSFI. Used internal audit methodology to provide independent oversight of models.
Closed audit issues pertaining an end-to-end retail model procedure.

2018-2022 — Toronto Metropolitan University, Department of Mathematics

Graduate Research Assistant under Dr. Foivos Xanthos
Completed research in Functional Analysis and its use in coherent and convex risk measures on L^p-spaces.
Developed empirical algorithms to implement general-moment market risk measures using R and Python.
Analyzed financial data using non-parametric methods to demonstrate the potential benefits of general-moment models.

Graduate Teaching Assistant
Lead tutorials for graduate and undergraduate courses. Marking and test invigilation for assigned courses.
Teaching Assistant for various mathematics courses. In particular, assisted students in becoming familiar with fundamental and advanced statistical concepts like MLE estimation, hypothesis testing, linear and non-linear regression models and solving various statistical problems using R.

Undergraduate Research Assistant under Dr. Foivos Xanthos
Completed research on time series, probability theory, functional analysis and their applications to financial instruments. In particular, modeled credit risk via the asymptotic single factor Vasicek (Merton) credit risk model.

2012-2020 — Sylvan Learning Centres, Mentor's Academy and The Academy for Mathematics & English — Toronto, Canada
Tutor specializing in mathematics, chemistry, biology and physics. Provided tutoring services to various centres across the greater Toronto Area.

Major Projects

Graduate Thesis — Statistical Consistency of Lebesgue Measures
When estimating the risk of a P&L from historical data or Monte Carlo simulation, the robustness of the estimate is important. Analyzed a refined notion of robustness that applies to tail-dependent law-invariant convex risk measures on Orlicz spaces.

Undergraduate Thesis — An Extreme Value Analysis of Financial Time Series
A study of extreme movements in financial asset returns. Showed that asset returns will have extreme realizations with greater probability than predicted by Black-Scholes model. Modelled the probability of extreme movements using Extreme Value Theory.