Saumitra Mazumder

RISK MEASURES
FINANCIAL MATHEMATICS
ECONOMETRICS

saumitramazumder.com

SAMazumder

SAMazumder

About Me

MSc. Applied Mathematics candidate at Ryerson University. Recovering biochemist.

In my free time I like repeatedly lifting heavy things above my head and then putting them back down.

I drink copious amounts of coffee.

My cats are adorable.

Education

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

B.Sc. Mathematics and Economics
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, Portfolio Optimization Techniques, Derivative Pricing.
Tools	R, MATLAB, Bloomberg, Stata, Java, Python (SciPy, NumPy, PANDAS, OOP, XGBoost), Machine Learning, LaTeX, Microsoft Word, Microsoft Excel, Microsoft PowerPoint, C++, C and SQL.
Mathematical Interests	Functional Analysis, Financial Mathematics, Probability, Stochastic Processes.

Internships

2022-Current Scotiabank
Model Development, Audit, Retail Credit Risk.

Major Projects

Graduate Thesis — Extending Coherent Risk Measures to Orlicz spaces (tentative)

Graduate Project — An Analyst's Exposition of "*Comparative and Qualitative Robustness for Law-invariant Risk Measures*"
A presentation giving a functional analytic exposition of the work of Kraätschmer, Schied and Zähle up to Theorem 2.6.

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.

Econometrics — An Estimation of the Relationship Between Change in Employment and Age, Sex and Race
Developed a generalized least squares (GLS) model to estimate the relationship between the employment status of a worker and worker's age, sex and race.

Seminar — A Rigorous proof of the Boltzmann-Gibbs distributions of money on connected graphs by *Nicolas Lanchier*
A seminar presentation on a proof that the probability that an agent has a specified amount of money converges to the Boltzmann-Gibbs distribution of energy.

Non-Cooperative Games by *John Nash*
A seminar presentation on John Nash's seminal work on non-cooperative game theory.

Employment History

2018-Current Ryerson University Department of Mathematics

Graduate Research Assistant under Dr. Foivos Xanthos
Completed research in Functional Analysis and its use in coherent risk measures on L^p-spaces.

Graduate Teaching Assistant
Lead tutorials for graduate Financial Mathematics and undergraduate Probability and Statistics, Calculus, Linear Algebra, Discrete Mathematics, Numerical Analysis and Financial Mathematics. Marking and test invigilation for assigned undergraduate and graduate courses.

Undergraduate Research Assistant under Dr. Foivos Xanthos
Completed research on time series, probability theory, functional analysis and their applications to financial instruments.