Konrad Gajewski

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Education

Ph.D. - Mathematical Modelling and Methods, Financial Mathematics
Toronto Metropolitan University GPA: 4.0/4.0 *Sept 2018 – Oct 2022*

Master of Science - Applied Mathematics, Financial Mathematics
Toronto Metropolitan University GPA: 4.0/4.0 *Sept 2016 – Aug 2018*

Bachelor of Science - Physics Major, Piano Major
University of Toronto *Sept 2012 – Aug 2016*

Associate Diploma (ARCT) - Piano Performance
Royal Conservatory of Music *April 2012*

Technical Skills

Financial Mathematics: Option Pricing, Risk Management, Numerical Computation, Visualization, Statistical Methods, Data Analysis.

Programming Languages: Python, Matlab, R, PostgreSQL, C++.

Libraries: NumPy, SciPy, Pandas, NetworkX, Keras, Scikit-learn, Matplotlib, SymPy

Applications: Excel, Power BI, Bloomberg Terminal, PuTTY, Wharton Research Data Services, LaTeX, Gephi, Graph-Tool, Linux Command Line Interface.

Languages (all fluent): English, French.

Professional Experience

Researcher - Toronto Metropolitan University ***Sept 2016 - Feb 2023***

- Determined accurate European option prices by running Monte Carlo simulations to generate 100 million price paths. The difference between numerical and analytic solutions to stochastic models was less than 0.01%.
- Independently designed, implemented and debugged a large-scale project which determines a superhedging strategy with 1000+ lines of code. Created over 50 custom functions for visualization and analysis purposes.
- Increased the efficiency of algorithms through parallelization and remote execution of code through a SSH client. Run times decreased from several days to under one hour.
- Predicted short-term interest rate yield curve movements using machine learning techniques such as Artificial Neural Networks and Principle Component Analysis. Calibrated models using 10GB of data from Bloomberg Terminal.
- Wrote proposals for competitive research grants. Received the merit-based Ontario Graduate Scholarship for 3 consecutive years, valued at $45,000.
- Authored several papers in quantitative finance. Presented findings to doctoral committees and graduate seminars. Organized meetings with professors and graduate students from other universities for collaborative review. Volunteered at Mathematical Symposiums and took part in lectures at the Fields Institute.

Teaching Assistant - Toronto Metropolitan University ***Sept 2016 - May 2022***

- Prepared, taught and marked 37 classes in more than 16 different courses, including 2 graduate level courses. Delivered several 3 hour lectures in financial mathematics. Invigilated exams for different departments at the university.
- Topics taught included multivariable calculus, programming and numerical computation, statistics, risk measures and financial mathematics, stochastic processes and time series, ordinary and partial differential equations, logic and proofs.

Professional Pianist ***Sept 2014 - Present***

- Performed in over 50 concerts including solo performances as well as with choirs and orchestras. Experienced in instructing and conducting choirs.