

# WILLIAM KONG

wwkong92@gmail.com

<http://wwkong.github.io>

<http://ca.linkedin.com/in/wwkong>

---

## Summary

---

- » Comfortable and familiar with mathematical rigour and computational mathematics
- » Solid understanding of statistics, optimization theory, and differential equations
- » Strong programming and database skills
- » Able to work well individually or collaboratively in a team
- » Adept at multitasking and managing multiple concurrent projects

## Programming Languages

---

- » Natively spoken SAS, R, SQL, and Haskell
- » Experience with UNIX (AIX), Matlab,  $\text{\LaTeX}$ , OPL, VBA, and Python
- » Dabbled in C/C<sup>++</sup>, Git, Julia, and Scheme (Lisp)

## Work Experience

---

### Risk Modeling Analyst

May 2014 – August 2014

*TD Bank Financial Group, Toronto ON*

- » Developed production-ready code and macroeconomic models in SAS and R for use in Basel II and Dodd Frank Act risk reporting as well as internal and regulatory retail credit risk stress tests
- » Created in-house algorithms and models to test the validity of Basel II and III AIRB retail risk-metrics using SAS and R
- » Designed several SQL and SAS data queries to create aggregate data models and validation datasets
- » Produced technical documentation for various risk metrics models as well as internal and regulatory stress test procedures

### Risk Modeling Analyst

September 2013 – December 2013

*TD Bank Financial Group, Toronto ON*

- » Validated and audited credit risk models using SAS and R
- » Developed custom benchmark models and numerical algorithms to test the validity of Basel II and Basel III AIRB retail risk-metrics using time series analysis and R
- » Designed multiple SAS queries to perform aggregate data and statistical analysis

### Enterprise Risk Management Intern

January 2013 – April 2013

*TD Bank Financial Group, Toronto ON*

- » Lead developer of an interactive business intelligence dashboard, programmed in SQL and Tableau
- » Developed VBA macros to optimize several periodic risk reports by up to 61% and 99% in time and memory efficiency respectively
- » Programmed R scripts to validate and transform monthly data used in TD's front end risk metrics
- » Designed multiple SQL queries to perform data regression and variance analysis

## Defined Benefits Pension Analyst

April 2012 – August 2012

*Morneau Shepell, Toronto ON*

- » Improved existing spreadsheets using *VBA* by up to 40% in time efficiency
- » Calculated and analyzed actuarial valuations of pension figures for 4 teams spanning 8 companies
- » Independently completed special calculations and year-end annual reporting projects
- » Performed data validations on Morneau Shepell's internal databases to ensure client data integrity

## Education

---

### Candidate for Bachelor of Mathematics

September 2010 - December 2014

Major GPA : 3.85, Major Average: 88.13%

*University of Waterloo, Waterloo ON*

- » Professional Risk Management Program September 2010 - December 2014
- » Mathematical Finance Program, Statistics Minor May 2011 - December 2014

*Relevant Courses:* Forecasting, Theoretical ODEs and PDEs, Measure Theory, Advanced Optimization, Numerical Methods for Finance, Databases, Mathematical Models for Finance, Deterministic Operations Research Models, Numerical Methods for PDEs, Data Analysis (Online), Game Theory (Online)

*Professional Certifications:* Passed two Society of Actuaries exams (P, FM)

## Independent Projects

---

### Project Euler Competitor

January 2013 - Present

- » Actively competing in an international mathematics and computer science problem repository
- » Ranked in the top 5% using the programming language *Haskell*

### Data Mining Algorithm

July 2012

- » Programmed a data miner in *VBA* to mine pension valuation rates from the Bank of Canada

### Vanilla Options Simulator

November 2011

- » Programmed an options and stock simulator in *Python* using the Black-Scholes model and Monte Carlo methods

## Awards & Scholarships

---

- » Top Quartile Participant of the Bloomberg Assessment Test (BAT) 2013
- » Queen Elizabeth II Aiming for the Top Scholarship 2010 - 2014
- » Waterloo President's Scholarship 2010

## Activities & Interests

---

Undergraduate Marker for Applied Real Analysis, University of Waterloo

2014

President, UW Mathematical Finance Student Association

2014

VP of Finance, UW Mathematical Finance Student Association

2013 - 2014

Senior Member, UW Tae Kwon Do Club

2010 - 2014