

WEIWEI (WILLIAM) KONG

🔗 <http://wwkong.github.io>

🔗 <https://github.com/wwkong>

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Education

PhD Candidate in Operations Research

Aug. 2016 – Present

Georgia Institute of Technology, Atlanta GA, USA

Relevant Courses: Linear Optimization, Discrete Optimization, Advanced Nonlinear Optimization, Stochastic Processes, Convex Analysis, Simulation Theory, Algorithms for Continuous Optimization

Master of Computational Science and Engineering

May 2018 – May 2019

Georgia Institute of Technology, Atlanta GA, USA

Relevant Courses: Algorithms & Computability, High Performance Computing, Numerical Linear Algebra, Iterative Methods for Systems of Equations, Computational Data Analysis

Bachelor of Mathematics

Sept. 2010 – Dec. 2014

University of Waterloo, Waterloo ON, Canada

Relevant Courses: Statistical Forecasting, Ordinary & Partial Differential Equations, Real Analysis & Measure Theory, Advanced Optimization, Databases, Numerical Methods for Partial Differential Equations

Work Experience

Graduate Research Assistant

Sept. 2016 – Present

Georgia Institute of Technology, Atlanta GA, USA

- » Published two journal papers (SIOPT & COAP) and one conference paper (ICLR), presented in one conference as an invited speaker (INFORMS), and submitted two additional research papers.
- » Investigating and implementing MATLAB code for several classes of nonconvex optimization problems.

Research Intern @ Google AI

May 2019 – July 2019

Google LLC, Mountain View CA, USA

- » Received a Google Peer Bonus for significant improvements to the Google codebase, the development of several new programming tools, and detailed code documentations and guides.
- » Submitted a paper for NEURIPS 2020 on optimization theory and multilabel classification.

Software Engineering Intern @ Google AI

May 2018 – July 2018

Google LLC, Mountain View CA, USA

- » Published and presented a paper in ICLR 2019 on using reinforcement learning to solve difficult online optimization problems.
- » Developed an efficient reinforcement learning framework in C++, Python, and Tensorflow that was accepted into Google's codebase.

Senior Risk Modeling Analyst

Jan. 2015 – Aug. 2017

TD Bank Financial Group, Toronto ON, Canada

- » Pioneered a new logistic regression variable selection method based on mutual information and variable effect maximization.
- » Developed a retail credit risk stress testing framework for several regulatory stress tests including OSFI MST, Basel EWST, and US CCAR.

Risk Modeling Analyst Sept. 2013 – Aug. 2014
TD Bank Financial Group, Toronto ON, Canada

- » Programmed 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.
- » 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.

Enterprise Risk Management Analyst Jan. 2013 – Apr. 2013
TD Bank Financial Group, Toronto ON, Canada

- » Created 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.

Defined Benefits Pension Analyst Apr. 2012 – Aug. 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

Programming Languages

- » Proficient in *Python*, *C++*, *MATLAB*, and *Gurobi*
- » Experience with *R*, *SAS*, *Haskell*, *Git*, *UNIX*, *Condor*, *SQL*, and *LaTeX*
- » Dabbled in *Julia*, *IBM OPL*, *CPLEX*, and *Scheme/Lisp*

Projects

Project Euler Competitor 2013 – 2020
 » Ranked in the top 5% using the programming language *Haskell*.

Vertex Cover Algorithms 2017
 » Developed several efficient method in *C++* for an algorithms class project and won first place in the project competition for the Branch-and-Bound category.

Data Mining Algorithm 2012
 » Programmed a data miner in VBA to mine pension valuation rates from the Bank of Canada

Awards

- » NSERC Postgraduate Scholarship (Doctoral Level) 2018 – 2021
- » Georgia Tech ISyE Travel Award (Doctoral Level) 2019
- » ICLR Conference Travel Award 2019
- » Thomas Johnson Fellowship 2016 – 2018
- » Queen Elizabeth II Aiming for the Top Scholarship 2010 – 2014
- » Waterloo President's Scholarship 2010

Activities & Interests

- » *Senior Member*, Georgia Tech Hapkido Club 2016 – 2020
- » *President*, UW Mathematical Finance Student Association 2014
- » *Vice-President of Finance*, UW Mathematical Finance Student Association 2013 – 2014