

# WEIWEI “WILLIAM” KONG

🌐 [wwkong.github.io](http://wwkong.github.io)

📄 [github.com/wwkong](https://github.com/wwkong)

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## EDUCATION

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- Ph.D.** in Operations Research (Expected) Aug. 2016 – May 2021  
*Georgia Institute of Technology, Atlanta GA, USA*
- M.Sc.** in Computational Science and Engineering May 2018 – May 2019  
*Georgia Institute of Technology, Atlanta GA, USA*
- B.Math.** in Mathematical Finance Sept. 2010 – Dec. 2014  
*University of Waterloo, Waterloo ON, Canada*

## WORK EXPERIENCE

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- Graduate Research Assistant** Sept. 2016 – Present  
*Georgia Institute of Technology, Atlanta GA, USA*
- » Published two refereed journal articles and one conference paper, presented in one conference as an invited speaker, and submitted two additional research papers.
  - » 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 code base, 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 code base.
- 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.
  - » Optimized many user-designed functions in *SAS* to improve several processes from 1 day to 1 hour.
- Risk Modeling Analyst** Sept. 2013 – Aug. 2014  
*TD Bank Financial Group, Toronto ON, Canada*
- » Created production-ready code and macroeconomic models in *SAS* and *R* for use in *Basel II* and *Dodd-Frank Act* risk reporting as well as regulatory retail credit risk stress tests.
  - » Developed custom benchmark models 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 risk reports by up to 61% and 99% in time and memory efficiency, respectively.
- » Programmed R scripts to validate monthly data used in TD's front end risk metrics.

**Defined Benefits Pension Analyst** Apr. 2012 – Aug. 2012  
*Morneau Shepell, Toronto ON, Canada*

- » Improved existing spreadsheets using VBA by up to 40% in time efficiency.
- » Analyzed actuarial valuations of pension figures for 4 teams spanning 8 companies.

## PROJECTS

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NC-OPT Library 2020

- » Coded a *MATLAB* library for solving composite optimization problems.

Vertex Cover Algorithms 2017

- » Won first place for a C++ algorithms class competition.

Project Euler Competitor 2013 – 2020

- » Ranked in the top 5% using the programming language *Haskell*.

Vanilla Options Simulator 2011

- » Programmed a Monte Carlo options simulator in *Python*.

## PROGRAMMING EXPERIENCE

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

## AWARDS

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- » Departmental Travel Award 2019
- » ICLR Conference Travel Award 2019
- » Alexander Graham Bell Postgraduate Scholarship 2018 – 2021
- » Thomas Johnson Fellowship 2016 – 2017
- » Waterloo President's Scholarship 2011
- » Queen Elizabeth II Aiming for the Top Scholarship 2010 – 2014

## EXTRACURRICULAR ACTIVITIES

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- » **Senior Member**, Georgia Tech Hapkido Club 2016 – 2020
- » **Senior Member**, UW Taekwondo Club 2010 – 2014
- » **President**, UW Mathematical Finance Student Association 2014
- » **Vice-President of Finance**, UW Mathematical Finance Student Association 2013 – 2014