Weiwei “William” Kong

wwkong.github.io | github.com/wwkong | wwkong92@gmail.com

Education

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

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 several existing production macros and user-designed functions in *SAS* resulting in many processes to decrease from 1 day of runtime to 1 hour of runtime.

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

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

» 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*.

Awards

» 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

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