WEIWEI "WILLIAM" KONG

CURRICULUM VITAE

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EDUCATION

2020 **Ph.D.** in Operations Research (Expected)
Georgia Institute of Technology, Atlanta GA, US

Dissertation Title: Accelerated Inexact First-Order Methods For Solving Nonconvex Composite Optimization Problems

Advisor: Renato D.C. Monteiro

2019 **M.Sc.** in Computational Science and Engineering
Georgia Institute of Technology, Atlanta GA, US

2014 **B.Math.** in Mathematical Finance
University of Waterloo, Waterloo ON, Canada

FELLOWSHIPS

2018 – 2020 Alexander Graham Bell Postgraduate Scholarship, $63,000 (Canadian), *Natural Sciences and Engineering Research Council of Canada*

2016 – 2017 Thomas Johnson Fellowship*,* $6,000*, Georgia Institute of Technology*

2011 President's Scholarship*, University of Waterloo*

2010 – 2014 Queen Elizabeth II Aiming for the Top Scholarship*, Government of Canada*

AWARDS

2019 Travel Award*, Georgia Institute of Technology*

2019 Travel Award*, ICLR*

PUBLICATIONS

Refereed Journal Articles

Kong, W., Melo, J. G., & Monteiro, R. D. (2020). An efficient adaptive accelerated inexact proximal point method for solving linearly constrained nonconvex composite problems. *Computational Optimization and Applications*, 76(2), 305-346.

Kong, W., Melo, J. G., & Monteiro, R. D. (2019). Complexity of a quadratic penalty accelerated inexact proximal point method for solving linearly constrained nonconvex composite programs. *SIAM Journal on Optimization*, 29(4), 2566-2593.

Conference Proceedings

Kong, W., Liaw, C., Mehta, A., & Sivakumar, D. (2018, September). A new dog learns old tricks: RL finds classic optimization algorithms. In *International Conference on Learning Representations*.

Manuscripts in Submission

Kong, W., & Monteiro, R. D. (2020). Accelerated Inexact Composite Gradient Methods for Nonconvex Spectral Optimization Problems. *arXiv preprint arXiv: 2007.11772*. (Submitted to *Journal of Machine Learning Research*)

Kong, W., & Monteiro, R. D. (2019). An accelerated inexact proximal point method for solving nonconvex-concave min-max problems. *arXiv preprint arXiv: 1905.13433*. (Submitted to *SIAM Journal on Optimization*)

Manuscripts in Preparation

Kong, W., Melo, J. G., & Monteiro, R. D. (2020). Iteration-complexity of a proximal augmented Lagrangian method for solving nonconvex composite optimization problems with nonlinear convex constraints. *arXiv preprint arXiv: 2008.07080*.

PRESENTATIONS

2020 Invited Talk, *INFORMS Annual Meeting*

2019 Invited Talk, *INFORMS Annual Meeting*

2019 Invited Poster Presentation, *ICLR*

2018 Departmental Talk, *Georgia Institute of Technology*

RESEARCH EXPERIENCE

2016 – 2020 Research Assistant
Georgia Institute of Technology

*Research Focus*es:

Efficient Optimization Algorithms: The development of novel optimization algorithms, with an emphasis on practicality and real-world applicability.

Oracle Complexities: The design and analysis of optimization algorithms that improve on state-of-the-art oracle complexities.

TEACHING EXPERIENCE

2016 – 2020 Head Teaching Assistant
Georgia Institute of Technology

Courses:

Deterministic Optimization (2020), Graduate level, 20 students.

Deterministic Optimization (2020), Graduate level, 34 students.

Nonlinear Optimization (2019), Ph.D. level, 21 students.

Deterministic Optimization (2018), Graduate level, 45 students.

Linear Optimization (2018), Ph.D. level, 22 students.

Linear Optimization (2017), Ph.D. level, 39 students.

Applied Probability (2016), Undergraduate level, 53 students.

Responsibilities:

Design assignment questions and code, write solution keys, and grade assignments, projects, and exams.

Give lectures as a substitute, organize exam reviews, and host weekly online/in-person office hours.

Technical Skills

Software Development	Experienced with designing and writing software packages in MATLAB. For reference, see nc-opt.readthedocs.io.
Programming Languages	Working knowledge of MATLAB, C++, Python, Gurobi, and TensorFlow. Some knowledge of Julia, R, SAS, Haskell, UNIX, Condor, and SQL. For reference, see github.com/wwkong.
Markup and Typesetting	Proficient with LaTeX and reStructuredText. For reference, see nc-opt.readthedocs.io and wwkong.github.io/notes.html.

Professional Experience

2019	Research Intern @ Google AI *Google LLC, Mountain View CA, US*
2018	Software Engineering Intern @ Google AI *Google LLC, Mountain View CA, US*
2015 – 2017	Senior Risk Modeling Analyst *TD Bank Financial Group, Toronto ON, Canada*
2013 – 2014	Risk Modeling Analyst *TD Bank Financial Group, Toronto ON, Canada*
2013	Enterprise Risk Management Analyst *TD Bank Financial Group, Toronto ON, Canada*
2012	Defined Benefits Pension Analyst *Morneau Shepell, Toronto ON, Canada*

Professional Memberships

2019 – 2020	Student Member, *INFORMS*
2018 – 2020	Student Member, *SIAM*
2018 – 2020	Member, *SIAG Group on Optimization*
2018 – 2020	Member, *SIAG on Computational Science and Engineering*