

SHIGENG SUN

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EDUCATION

Northwestern University , <i>McCormick School of Engineering</i> Ph.D, <i>Engineering Sciences and Applied Mathematics</i> Advisor: Dr. Jorge Nocedal	Evanston, IL, United States Sept. 2019 - June 2024 (expected) GPA: 3.83/4.0 (as of Jan. 2023)
New York University , <i>Courant Institute of Mathematical Sciences</i> Master of Science, <i>Mathematics</i> (with graduate thesis, top 2 / 70) Advisor: Dr. Michael J. Shelley	New York City, NY, United States Aug. 2017 - June 2019 GPA: 3.87/4.0
The George Washington University , <i>Columbian College of Arts and Sciences</i> Bachelor of Science, <i>Mathematics (top of the class, with honors), Economics (with honors)</i> Advisors: Dr. Svetlana Roudenko, Dr. Yanxiang Zhao	Washington, DC, United States Aug. 2013 - June 2017 GPA: 3.71/4.0

COMPUTING SKILLS

Programming Languages:	Python, MATLAB, C; Basic knowledge with SQL, R, CUDA
Packages & Tools:	PyTorch, scikit-learn, TensorFlow, JAX, LAPACK/LAPACKe, OpenMP, Slurm
Software & Others:	MS Office, iWork, L ^A T _E X, Mathematica, Maple, Stata, Interest in Operations Research

PAPERS, PREPRINTS AND TECHNICAL REPORTS

S. Sun, J. Nocedal, *A Trust Region Method for the Optimization of Noisy Functions*. Accepted for publication in *Mathematical Programming* (2023).

S. Sun, R. Byrd, J. Nocedal, *A Statistical Ratio Test Algorithm for Large Scale Machine Learning*. Preprint to be submitted to *NeurIPS* (2023).

S. Sun, J. Nocedal, *An Algorithm for Solving System of Nonlinear Equations with Rank Deficient Jacobians and Inaccuracies*. Preprint to be submitted to *SIAM Journal of Optimization* (2023).

Y. Lou, **S. Sun**, J. Nocedal, *Nonlinear Optimization in the Presence of Noise: Applications, Noise Models and Problem Structure*. Preprint to be submitted to *Optimization Methods and Software* (2023).

S. Sun, R. Byrd, J. Nocedal, *On the Global Convergence of Byrd-Omojokun SQP Method for Equality Constrained Optimization*. Preprint.

S. Sun, S. Fürthauer, M. J. Shelley, *Instabilities in Active Contracting Networks*. Thesis, Technical Report (2019).

S. Sun, S. Roudenko, *Modeling The International Links Between Interbank Offered Rates Among Different Markets Through A Wavelet Analysis Approach*. Technical Report (2017).

S. Sun, Y. Zhao, *Periodic Migration in a Physical Model of 1D Cell on Micro-patterns*. Technical Report (2017).

RESEARCH EXPERIENCE

Prof. Nocedal's Research Group , <i>Department of IEMS</i> , Northwestern University <i>Optimization under uncertainties, Optimization in Machine Learning</i>	Evanston, IL, United States Sept. 2020-Present
Biophysical Modeling Group , <i>Flatiron Institute</i> , Simons Foundation <i>Numerical Solution to Large PDE Systems, Computational Fluid Mechanics</i>	New York City, NY, United States Jan. 2018-Aug. 2019
Prof. Zhao's Research Group, Prof. Roudenko's Research Group , <i>Department of Math</i> , GWU <i>Data and Signal analysis, Mathematical Finance, Biophysics Simulations</i>	Washington, DC Dec. 2014-May 2017

TEACHING/WORKING EXPERIENCE

Barclays Investment Bank , Barclays <i>Quantitative Associate Summer Intern</i>	New York, NY, United States June. 2023 (to start)-Aug. 2023
Center of Optimization and Statistical Learning , Northwestern University <i>Student Administrator</i>	Evanston, IL, United States Aug. 2021-Present
Courant Institute of Mathematical Sciences , New York University <i>Graduate Faculty Adjunct</i>	New York City, NY , United States Aug. 2017– May 2018
Columbian College of Arts and Sciences , The George Washington University <i>Undergraduate Teaching Assistant</i>	Washington , DC, United States Aug. 2016– Jan. 2017

AWARDS AND FELLOWSHIPS

Walter P. Murphy Fellowship	Sept. 2019
Ruggles Undergraduate Mathematics Prize (top of the class in mathematics award)	May. 2017
Data MASTER fellowship by National Science Foundation	Dec. 2015, June 2016

PROFESSIONAL SOCIETIES AND ACTIVITIES

Society for Industrial and Applied Mathematics (SIAM) , <i>Student Member</i>	Aug. 2016- Current
American Mathematical Society (AMS) , <i>Student Member</i>	Aug. 2016- Current
The Institute for Operations Research and the Management Sciences (INFORMS) , <i>Student Member</i>	Sept. 2020- Current
Pi Mu Epsilon Mathematics Honorary Society , <i>Chapter President</i>	May 2015- May 2017

CONFERENCES AND PRESENTATIONS

INFORMS Conference on Optimization , <i>Session Speaker</i>	Greenville, SC, United States Mar. 2022
ACMNTW Conference (Midwest Optimization Conference) , <i>Presenter</i>	Evanston, IL, United States May 2022
INFORMS Annual Meeting , <i>Session Speaker</i>	Indianapolis, IN, United States Oct. 2022
SIAM Conference on Optimization , <i>Session Chair, Session Speaker</i>	Seattle, WA, United States May 2023