

SHIGENG SUN

✉ gengyuntx@gmail.com 🔗 <https://shigengsun.github.io>

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 - Sept. 2024 (expected) GPA: 3.83/4.0 (as of Aug. 2024)
New York University , <i>Courant Institute of Mathematical Sciences</i> Master of Science, <i>Mathematics</i> (with graduate thesis) 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 (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

INDUSTRY EXPERIENCE

The D. E. Shaw Group <i>Quantitative Analyst</i>	New York City, NY, United States Oct. 2024 - Present
Virtu Financial <i>Quantitative Strategist (Intern)</i>	New York City, NY, United States June. 2023 - Aug. 2023
Amazon AWS AI Labs <i>Applied Scientist (Intern)</i>	Santa Clara, CA, United States Sept. 2023 - Dec. 2023

COMPUTING SKILLS

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

PAPERS, PREPRINTS AND TECHNICAL REPORTS

- S. Sun**, J. Nocedal, *A Trust-Region Algorithm for Noisy Equality Constrained Optimization*, Preprint (2024).
- S. Sun**, J. Nocedal, *A Trust Region Method for the Optimization of Noisy Functions*. Published in *Mathematical Programming* (2023).
- S. Sun**, Y. Xie, *Stochastic Ratios Tracking Algorithm for Large Scale Machine Learning*. Preprint in review.
- Y. Lou, **S. Sun**, J. Nocedal, *Nonlinear Optimization in the Presence of Noise: Applications, Noise Models and Problem Structure*. Preprint on revision with *SIAM Journal Of Scientific Computing* (2024).
- S. Sun**, 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 (2019).
- S. Sun**, S. Roudenko, *Modeling The International Links Between Interbank Offered Rates Among Different Markets Through A Wavelet Analysis Approach*. Technical Report (2017).

ACADEMIA 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 Jan. 2015-May 2017

TEACHING/ SERVICE EXPERIENCE

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 Sept. 2017– May 2019
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

INVITED CONFERENCES AND PRESENTATIONS

INFORMS Conference on Optimization , <i>Invited 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>Invited Session Speaker</i>	Indianapolis, IN, United States Oct. 2022
SIAM Conference on Optimization , <i>Session Chair, Invited Session Speaker</i>	Seattle, WA, United States May 2023
INFORMS Conference on Optimization , <i>Invited Session Speaker</i>	Houston, TX, United States Mar. 2024