

Liwei Jiang

School of Operations Research (ORIE)
Cornell University
136 Hoy Rd, Ithaca, NY 14850

Email: lj282@cornell.edu
Personal Website: <https://liwei-jiang97.github.io/>
Phone: +1 (607) 262-4476

Education

Cornell University Ithaca, NY
PhD in Operations Research Sep 2019 – Jun 2024 (Expected)
Advisor: Professor Damek Davis
School of Operations Research and Information Engineering

Nanjing University Nanjing, China
BS in Statistics Sep 2015 – Jun 2019
Department of Mathematics

University of Wisconsin-Madison Madison, WI
Exchange student Jan 2018 – Dec 2018
Department of Mathematics

Research interests

I am broadly interested in the mathematics of data science, particularly the beautiful interplay of optimization, geometry, statistics, and machine learning.

Honors and scholarships

The Hsien Wu and Daisy Yen Wu Scholarship, Cornell	2023
Teaching Assistant of the Year, Cornell ORIE	2022
Teaching Assistant of the Year, Cornell ORIE	2021
National Scholarship, China	2016

Journal publications

A nearly linearly convergent first-order method for nonsmooth functions with quadratic growth
Damek Davis*, Liwei Jiang*
Foundations of Computational Mathematics, to appear.

Algorithmic regularization in model-free overparametrized asymmetric matrix factorization
Liwei Jiang, Yudong Chen, Lijun Ding
SIAM Journal on Mathematics of Data Science (SIMODS), 2023

On the translates of general dyadic systems on \mathbb{R}
Theresa C Anderson*, Bingyang Hu*, Liwei Jiang*, Connor Olson*, Zeyu Wei*
Mathematische Annalen, 2020

Conference papers

Rank overspecified robust matrix recovery: subgradient method and exact recovery
Lijun Ding*, Liwei Jiang*, Yudong Chen, Qing Qu, Zhihui Zhu

Neural Information Processing Systems Conference (NeurIPS), 2021

Preprints

Asymptotic normality and optimality in nonsmooth stochastic approximation

Damek Davis*, Dmitriy Drusvyatskiy*, Liwei Jiang*

preprint, 2023. Major revision at The Annals of Statistics. Available on arxiv.

Active manifolds, stratifications, and convergence to local minima in nonsmooth optimization

Damek Davis*, Dmitriy Drusvyatskiy*, Liwei Jiang*

preprint, 2022. Submitted to Foundations of Computational Mathematics. Available on arxiv.

A validation approach to over-parameterized matrix and image recovery

with Lijun Ding, Zhen Qin, Jinxin Zhou, Zhihui Zhu

preprint, 2022. Available on arxiv.

Teaching experience

Teaching assistant, Department of Operations Research (Cornell)

ORIE 6300: Mathematical Programming 2023 Fall

ORIE 3500/5500: Probability and Statistics II 2021 Fall

ORIE 3510/5510: Stochastic Process 2020 Spring

ORIE 3500/5500: Probability and Statistics II 2020 Fall

ORIE 4600/5600: Intro to Financial Engineering 2020 Spring

ORIE 3500/5500: Probability and Statistics II 2019 Fall

Teaching assistant, Department of Mathematics (Cornell)

Math 2940: Linear Algebra for Engineers 2023 Spring

Math 2940: Linear Algebra for Engineers 2022 Fall

Math 2940: Linear Algebra for Engineers 2022 Spring

Industry experience

Amazon, Research Scientist Intern Jun 2023 - Aug 2023

For huge-scale inventory planning problems at Amazon, I helped design and implement distributed primal-dual algorithms to obtain optimized buying plans using production data.

Talks

Asymptotic normality in nonsmooth optimization

Informs, 10/2023

Cornell Young Researcher Workshop (speaker), 10/2023

Subgradient methods avoid strict saddle point

SIAM Conference on Optimization, 6/2023

International Conference on Continuous Optimization, 7/2022

Rank overspecified robust matrix recovery: Subgradient method and exact recovery

Neural Information Processing Systems (virtual), 12/2021

Informs, 10/2021

Service

Reviewing

Operations Research, Mathematics of Operations Research, Information and Inference: A Journal of the IMA

Diversity

Cornell ORIE PhD application support for underrepresented students, 2020

Cornell ORIE PhD application support for underrepresented students, 2021

Skills

Programming

Proficient in: Python (experience working with PyTorch and language models), Matlab, Java, LaTeX.

Languages

Mandarin (native), English (fluent)

References

Damek Davis: dsd95@cornell.edu.

Yudong Chen: yudong.chen@wisc.edu

Adrian Lewis: adrian.lewis@cornell.edu

Katya Scheinberg: katyas@cornell.edu