

Yao Li

Michigan State University
Department of Mathematics
Department of Computational Mathematics,
Science and Engineering

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Education

2017-Pres. Ph.D. - *Michigan State University (MSU)*, East Lansing, MI, USA

Major: Applied Mathematics, expected 2022

Minor: Computational Mathematics, Science and Engineering, expected 2022

Advisor: Prof. [Ming Yan](#)

2013-2017 B.S. - *Southern University of Science and Technology (SUSTech)*, Shenzhen, China

Major: Pure and Applied Mathematics, *summa cum laude*, 2017

Project: *On ADMM for Three Separable Operators and Accelerated Algorithms*

Advisor: Prof. [Bingsheng He](#)

Honors & Awards

Jul 2021 Graduate School Dissertation Completion Fellowship, *MSU*

Apr 2020 Herbert T. Graham Scholarship Fund in Mathematics, *MSU*

Apr 2019 2018-2019 Award for Outstanding Early Student in CMSE, *MSU*

Apr 2019 Douglas A. Spragg Endowed Fellowship in Mathematics, *MSU*

May 2016 Eminence Scholarship, 2nd Prize, *SUSTech*

2013-2017 College Start-up Scholarship, *SUSTech*

Research Interests

Convex Optimization, Large-scale Optimization, Decentralized Algorithm

Professional Experience

FS 2020 Teaching Assistant: MTH314, Matrix Algebra I, *MSU*

SS 2020 Teaching Assistant: MTH314, Matrix Algebra I, *MSU*

FS 2019 Teaching Assistant: MTH133, Calculus II, *MSU*

US 2019 Graduate Intern: Applied Machine Learning Summer Research Fellowship,
Los Alamos National Laboratory

Project: *Matrix Equilibration for Preconditioned ADMM*

Mentor: Dr. [Brendt Wholberg](#), Dr. [Youzuo Lin](#)
SS 2019 Teaching Assistant: MTH314, Matrix Algebra I, *MSU*
FS 2018 Grader: MTH847, Part Differential Equations I, *MSU*
2017-2019 Math Learning Center Tutor, *MSU*

Workshops & Conferences

Jun 2019 *Workshop on Recent Developments on Mathematical/Statistical approaches in Data Science (MSDAS)*, The University of Texas at Dallas, Dallas, TX, US
Aug 2020 *The 23rd International Conference on Artificial Intelligence and Statistics*, ~~Palermo, Italy~~ **Virtual Meeting**
May 2021 *The Ninth International Conference on Learning Representations*, **Virtual Meeting**

Talks & Presentations

Aug 2019 Title: *Preconditioned ADMM on (Convolutional) Sparse Coding*
Los Alamos National Laboratory, Los Alamos, NM

Publications

- [1] Xiaorui Liu, **Yao Li**, Jiliang Tang, and Ming Yan. [A Double Residual Compression Algorithm for Efficient Distributed Learning](#). In Silvia Chiappa and Roberto Calandra, editors, *Proceedings of the Twenty Third International Conference on Artificial Intelligence and Statistics*, volume 108 of *Proceedings of Machine Learning Research*, pages 133–143, Online, 26–28 Aug 2020. PMLR.
- [2] Xiaorui Liu, **Yao Li**, Rongrong Wang, Jiliang Tang, and Ming Yan. [Linear Convergent Decentralized Optimization with Compression](#). In *International Conference on Learning Representations*, 2021.
- [3] Xiaorui Liu, **Yao Li**, Ming Yan, and Kun Yuan. Decentralized composite optimization with compression. 2021. In Preparation.
- [4] **Yao Li** and Ming Yan. [On the Linear Convergence of Two Decentralized Algorithms](#). *Journal of Optimization Theory and Applications*, pages 1–20, 2021.

Languages & Skills

L^AT_EX, MATLAB, Python, C/C++, Java