Honglin Yuan

Curriculum Vitae

honglin.yuan@outlook.com
hongliny.github.io
hongliny
yuanhl
Last updated: January 24, 2024

Education

2017 - 2022 **Ph.D.** in **Computational Mathematics**, ICME, Stanford University. Advisor: Tengyu Ma *GPA: 4.22/4.3*

2013 - 2017 **B.S.** in **Mathematics**, Peking University. Advisor: Zaiwen Wen *GPA Rank: 2/196*

2014 - 2017 **B.S.** in **Computer Science** (Double Degree), Peking University, China

Employment

2022 - present **Quantitative Researcher**, Citadel Securities, Miami FL

2020, 2021 **Research Intern, Student Researcher**, Google Research

Publications

Plex: Towards Reliability using Pretrained Large Model Extensions
With Dustin Tran et al. *BayLearn 2022*

On Principled Local Optimization Methods for Federated Learning *Ph.D. Thesis Stanford University, 2022*

Big-Step-Little-Step: Efficient Gradient Methods for Objectives with Multiple Scales
With Jonathan Kelner, Annie Marsden, Vatsal Sharan, Aaron Sidford, Gregory Valiant (alphabetical order) *COLT 2022*

Sharp bounds for Federated Averaging (Local SGD) and Continuous Perspective
Margalit Glasgow*, Honglin Yuan* (*equal contribution), Tengyu Ma *AISTATS 2022*

What Do We Mean by Generalization in Federated Learning?
Honglin Yuan, Warren Morningstar, Lin Ning, Karan Singhal *ICLR 2022*

A Field Guide to Federated Optimization
With Jianyu Wang et al. *arXiv:2107.06917*

Federated Composite Optimization
Honglin Yuan, Manzil Zaheer, Sashank Reddi *ICML 2021*

Federated Accelerated Stochastic Gradient Descent
Honglin Yuan, Tengyu Ma *NeurIPS 2020, Best Paper in ICML'20 FL workshop*

Global Optimization with Orthogonality Constraints via Stochastic Diffusion on Manifold
Honglin Yuan, Xiaoyi Gu, Rongjie Lai, Zaiwen Wen *Journal of Scientific Computing, 2019*

Service

2019 - present **Reviewer**, ICML, NeurIPS, ICLR, COLT, TMLR, Journal of Computational Mathematics

2020, 2022 **Course Assistant**, Machine Learning (CS 229), Stanford *Instructors: Tengyu Ma, Chris Re, Andrew Ng*
Topics include ML fundamentals, supervised learning, unsupervised learning, and reinforcement learning.

2022 **Course Assistant**, Discrete Mathematics and Algorithms (CME 305) *Instructor: Aaron Sidford*
Topics include combinatorial, algebraic, spectral algorithms, NP-hardness, and approximation algorithms.

2019, 2020 **Course Assistant** (Head TA for 2020), Optimization (CME 307), Stanford *Instructor: Yinyu Ye*
Topics include linear and conic linear programming, convex analysis, optimization algorithms and applications.

2014, 2015 **Teaching Assistant**, Introduction to Computations (A), EECS, Peking University *Instructor: Yafei Dai*
Topics include fundamentals of Computer Science, C and C++ programming, data structures, and algorithms.

Skills

Proficient in: Python (TensorFlow, SciPy, scikit-learn, Pandas), LaTeX, Linux, MATLAB, Wolfram Language

Experienced in: Assembly, C/C++, CUDA, Java, Julia, Lisp, MPI, OpenMP, PyTorch, R, SQL, Web Programming

Selected Honors and Awards

2021	Outstanding Reviewer Award	*NeurIPS 2021*
2020	Best Paper Award	*ICML 2020 Workshop on Federated Learning for User Privacy and Data Confidentiality*
2020	NeurIPS Travel Award	*NeurIPS 2020*
2020	TOTAL Innovation Scholars Award	*Stanford University*
2019	TOTAL Innovation Fellowship	*Stanford University*
2017	Stanford School of Engineering Fellowship	*Stanford University*
2017	Excellent Graduate Award	*Peking University*
2016	National Scholarship (0.2% highest honored)	*Peking University*
2016	Silver Prize in S.-T. Yau College Student Mathematics Contests	*Yau Mathematical Sciences Center*
2016	Meritorious Winners in Interdisciplinary Contest in Modeling	*COMAP*
2015	Houston BAA Scholarship	*Peking University*
2015	National Innovative Fund for Undergraduate Research (highest honored)	*Peking University*
2015	Meritorious Winners in Mathematical Contest in Modeling	*COMAP*
2014	Founder Scholarship	*Peking University*
2014	1^{st} rank in the AI Gaming Tournament	*EECS, Peking University*
2012	First Prize in National High School Mathematics League	*Chinese Mathematical Society*

Selected Recent Talk

Oct. 2021	INFORMS Annual Meeting 2021, Federated learning and multi-task learning	*online*
Dev. 2020	Federated Learning One World Seminar	*online*
Nov. 2020	INFORMS Annual Meeting 2020, Federated Learning and Optimization	*online*
Oct. 2020	Google Federated Learning Seminars	*online*
Jul. 2020	ICML 2020 Workshop on Federated Learning for User Privacy and Data Confidentiality	*online*
Dec. 2019	Peking University BICMR Operations Research Seminar	*Beijing, China*
Oct. 2019	INFORMS Annual Meeting 2019, Efficient Learning and Optimization in Data Mining	*Seattle, WA*
Dec. 2016	International Workshop on Signal Processing, Optimization, and Compressed Sensing (SPOC)	*Tianjin, China*