

Yin Liu

The Ohio State University
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Education

The Ohio State University <i>PhD, Operation Research</i> Advisor: <i>Dr. Sam Davanloo Tajbakhsh</i>	August 2017 – December 2023 (Expected) <i>Columbus, OH</i>
University of Chinese Academy of Sciences <i>MS, Optical Engineering</i>	September 2013 – July 2016 <i>Beijing, China</i>
Harbin Institute of Technology <i>BS, Measurement, Control Technique and Instruments</i>	September 2009 – July 2013 <i>Harbin, China</i>

Research Interests

Continuous optimization, First-order optimization algorithm, Convex optimization, Applications in Machine Learning and Operation Research

Publications

- **Yin Liu**, and Sam Davanloo Tajbakhsh.(2022), Stochastic Composition Optimization of Functions without Lipschitz Continuous Gradient (accepted for publication in the Journal of Optimization Theory and Applications)
- Zhang, Dewei, **Yin Liu**, and Sam Davanloo Tajbakhsh.(2021), A First-Order Optimization Algorithm for Statistical Learning with Hierarchical Sparsity Structure, INFORMS Journal on Computing
- **Yin Liu**, Sam Davanloo Tajbakhsh, and Antonio J. Conejo.(2021), Spatiotemporal wind forecasting by learning a hierarchically sparse inverse covariance matrix using wind directions. International Journal of Forecasting
- **Yin Liu**, and Sam Davanloo Tajbakhsh.(2020), Fitting ARMA time series models without identification: A proximal approach. arXiv preprint arXiv:2002.06777.

Research Presentations

- A first-order optimization algorithm for statistical learning with hierarchical sparsity structure INFORMS Annual Meeting, Virtual, 2020

Research Experience

PhD Researcher <i>The Ohio State University</i>	2017 – Present <i>Columbus, OH</i>
<ul style="list-style-type: none">• Developed first-order algorithms and analyzed their convergence properties with biased gradient oracle• Developed algorithms and their convergence for two-level compositional problems without Lipschitz continuous gradients	

- Applied hierarchical sparsity structure in wind prediction project
- Applied hierarchical sparsity structure in time series models without predefined orders

MS Researcher

2014 – 2017

University of Chinese Academy of Sciences

Beijing, China

- Participated in a Public Science project by designing hardware and software for an electronic control system for a volcano model
- Developed a laser diode array's power supply and control unit as part of an all-solid laser design research project

BS Researcher

2014

University of Chinese Academy of Sciences

Beijing, China

- Developed an auto-focus system based on the principle of confocal imaging for a laser ablation project

Harbin Institute of Technology

Harbin, China

- Participated in a project on Electric Vehicle's battery monitoring by designing software to process sensor array data

Teaching Experience

Graduate Teaching Assistant

2018 – Present

The Ohio State University

Columbus, OH

- Stochastic Modeling and Simulation
- Systems Modeling and Optimization for Analytics
- Linear and Integer Programming
- Quality and Reliability Engineering

Specialized Skills

Programming Languages: Python, Matlab, R, GAMS, C#