

Xiaoyin Hu

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Education

Academy of Mathematics and Systems Sciences
Chinese Academy of Sciences, Beijing, China

September 2016 – July 2021

Ph.D. in Operations Research
Advisor: Prof. Jinchuan Cui

School of Mathematical Science
Zhejiang University, Hangzhou, China

September 2012 – June 2016

B.S. in Mathematics

Working Experience

School of Computer and Computing Science
Hangzhou City University, Hangzhou, China

July 2021 – present

Lecturer

Research Interests

- Nonsmooth optimization
- Optimization problems in machine learning
- Optimization problems on Riemannian manifolds

Grants

- Manifold Optimization Problems in Deep Learning: Algorithm Design and Optimization Package Development. The National Natural Science Foundation of China, 2024.01-2026.12, as the Principal Investigator.
- Manifold Optimization Problems in Machine Learning: Algorithm Design, Theories and Applications. Zhejiang Provincial Natural Science Foundation of China, 2023.01-2025.12, as the Principal Investigator.
- Algorithm Design for Orthogonally Constrained Optimization Problems and Applications in Artificial Intelligence. Scientific research project of Zhejiang Provincial Education Department, 2022.10-2024.10, as the Principal Investigator.

Publications

1. **Xiaoyin Hu**, Nachuan Xiao*, Xin Liu, Kim-Chuan Toh, An improved unconstrained approach for bilevel optimization, *SIAM Journal on Optimization*, 2023, 33(4): 2801-2829. (link)
2. **Xiaoyin Hu**, Nachuan Xiao*, Xin Liu, Kim-Chuan Toh, A constraint dissolving approach for nonsmooth optimization over the Stiefel manifold, *IMA Journal on Numerical Analysis* (to appear). (link)
3. **Xiaoyin Hu**, Nachuan Xiao*, Xin Liu, Convergence Properties of Stochastic Proximal Subgradient Method in Solving a Class of Composite Optimization Problems with Cardinality Regularizer, *Journal of Industrial and Management Optimization* (to appear).(link).
4. **Xiaoyin Hu**, Jianshu Li, Xiaoya Li, J.C. Cui*, Carbon Emissions Abatement(CEA) Allocation Based on Inverse Slack-Based Model(SBM), *Journal of the Operation Research Society of China*. 2021, 9: 475-498. (link)
5. Jianshu Li*, **Xiaoyin Hu**, Junjie Luo, J.C. Cui, A Fast Exact Algorithm for Airplane Refueling Problem. *International Conference on Combinatorial Optimization and Applications*. Cham: Springer International Publishing, 2019. (link)

Preprints

1. **Nachuan Xiao**, Xiaoyin Hu*, Xin Liu, Kim-Chuan Toh, CDOpt: A Python package for a class of Riemannian optimization, submitted. arXiv:2212.02698
2. **Nachuan Xiao**, Xiaoyin Hu*, Xin Liu, Kim-Chuan Toh, Adam-family methods for nonsmooth optimization with convergence guarantees, submitted. arXiv:2305.03938

Software

- CDOpt: A Python Package for a Class of Riemannian Optimization. (website)