

Nachuan Xiao

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Education

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

September 2016 – June 2021

Ph.D. in Computational Mathematics

Advisor : Prof. Ya-xiang Yuan

Fudan University, Shanghai, China

September 2012 – June 2016

B.S. in Mathematics

Research Interests

- Optimization problems with orthogonality constraints
- Nonsmooth optimization

My research interests include numerical methods for optimization problems with orthogonality constraints, especially in developing orthonormalization-free approaches for these problems. I am also interested in nonsmooth optimization problems with orthogonality constraints and their applications arisen from statistics and computer vision.

Publications

1. **Nachuan Xiao**, Xin Liu, and Ya-xiang Yuan. A class of smooth exact penalty function methods for optimization problems with orthogonality constraints. *Optimization Methods and Software*, 0(0):1–37, 2020. (link)
2. **Nachuan Xiao**, Xin Liu and Ya-xiang Yuan, Exact Penalty Function for $\ell_{2,1}$ Norm Minimization over the Stiefel Manifold, *SIAM Journal on Optimization* (under review). (link)

Presentations

- The 17th Annual Meeting of China Society for Industrial and Applied Mathematics, 2019.09, Foshan, China
- The 12th International Conference on Numerical Optimization and Numerical Linear Algebra, 2019.04, Shangrao, China

Honors & Awards

- Second Prize in Tianchi Competition on Algorithm Design for Fabric Packing Problems (2/832)
- Excellence Award in Alibaba Global Mathematics Competition, 2018
- Pacemaker to Merit Student in University of Chinese Academy in 2020

Skills

- **Programming:** Matlab, Python, Julia, \LaTeX
- **Languages:** Chinese (Native), English (Fluent)