

Lexiao Lai

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EDUCATION

Columbia University in the City of New York

Doctor of Philosophy in Operations Research
Master of Science in Operations Research

New York, U.S.
Sept. 2019 - May 2024 (expected)
Sept. 2019 - May 2020

The University of Hong Kong

Bachelor of Science Major in Mathematics, Minor in Finance

Hong Kong
Sept. 2015 - June 2019

RESEARCH INTERESTS

Nonconvex optimization, semi-algebraic geometry, data science

RESEARCH PAPERS

1. Cédric Jozs, Lexiao Lai, Lyapunov stability of the subgradient method with constant step size, *Mathematical Programming*, 2023 [[preprint](#)] [[journal doi](#)]
2. Cédric Jozs, Lexiao Lai, Sufficient conditions for instability of the subgradient method with constant step size, *arXiv preprint*, 2022 [[preprint](#)]
3. Cédric Jozs, Lexiao Lai, Nonsmooth rank-one matrix factorization landscape, *Optimization Letters*, 1-21, 2021 [[preprint](#)] [[journal doi](#)]
4. Elliot Cartee, Lexiao Lai, Qianli Song, Alexander Vladimirovsky, Time-dependent surveillance-evasion games, 58th IEEE Conference on Decision and Control, 2019 [[preprint](#)] [[conference doi](#)]

TALKS

1. SIAM Conference on Optimization, Seattle, June 1st 2023, *Global stability of first-order methods with constant step size for coercive tame functions*
2. CUHK SEEM Department Seminar, Hong Kong, December 8th 2022, *Lyapunov stability of the subgradient method with constant step size*
3. HKU Optimization and Machine Learning Seminar, Hong Kong, December 6th 2022, *Lyapunov stability of the subgradient method with constant step size*
4. PGMODAYS 2022, Paris, November 29th 2022, *Lyapunov stability of the subgradient method with constant step size*
5. Institute for Operations Research and the Management Sciences, Annual Meeting, Indianapolis, October 17th 2022, *Lyapunov stability of the subgradient method with constant step size*

AWARDS & HONOURS

- Columbia IEOR Department Fellowship 2019
- Walter Brown Memorial Prizes in Mathematics, HKU 2019
- Doris Chen Undergraduate Project Prize, HKU 2018
- Liu Ming-Chit Prize in Mathematics, HKU 2018
- Outstanding Winner of *Mathematical Contest in Modelling* 2017
Organized by COMAP Inc.
- Ranked 134 out of 4638 in *78th William Putnam Mathematical Competition* 2017
Organized by *Mathematical Association of America*
- Alan John Allis Prize in Mathematics, HKU 2016, 2017
- Dean's Honours List, HKU 2016, 2017, 2019
- HKSAR Government Scholarship, HKU 2015-2019

TEACHING EXPERIENCE

As Teaching Assistant:

- **Columbia**: EEOR6616 Convex Optimization (TA evaluation: 4.42/5) Spring 2023
- **HKU**: MATH2101 Linear Algebra I Spring 2019

COMPUTER SKILLS

Programming Languages: Python, MATLAB, \LaTeX