Lexiao Lai

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EDUCATION

Columbia University in the City of New York — New York, U.S.
Doctor of Philosophy in Operations Research — Sept. 2019 - May 2024 (expected)
Master of Science in Operations Research — Sept. 2019 - May 2020

The University of Hong Kong — Hong Kong
Bachelor of Science Major in Mathematics, Minor in Finance — Sept. 2015 - June 2019

RESEARCH INTERESTS

Nonconvex optimization, semi-algebraic geometry, low-rank matrix recovery.

RELEVANT COURSES

- **Columbia**: Optimization I & II, Foundation of Optimization, Advanced Topics in IEOR (in polynomial optimization), Stochastic Models I & II, Analysis of Algorithms, Graphical models, Machine learning
- **HKU**: Topics in Math Programming and Optimization (theories and algorithms of convex optimization), Introduction to Optimization, Real Analysis, Functional Analysis, Introduction to Partial Differential Equations, (Ordinary) Differential Equations, Discrete Mathematics, Abstract Algebra, Stochastic Processes, Introductory Econometrics, Mathematical Finance

RESEARCH PAPERS

- Cédric Josz, Lexiao Lai, Sufficient conditions for instability of the subgradient method with constant step size, arXiv preprint, 2022 [preprint]
- Cédric Josz, Lexiao Lai, Lyapunov stability of the subgradient method with constant step size, arXiv preprint, 2022 [preprint]
- Cédric Josz, Lexiao Lai, Nonsmooth rank-one matrix factorization landscape, Optimization Letters, 1-21, 2021 [preprint] [journal version]
- Elliot Cartee, Lexiao Lai, Qianli Song, Alexander Vladimirsky, Time-dependent surveillance-evasion games, 58th IEEE Conference on Decision and Control, 2019 [preprint] [conference version]

AWARDS & HONOURS

- Outstanding Winner of *Mathematical Contest in Modelling* — 2017
  (Top 13 winners out of 8843 teams)
  Organized by COMAP Inc.
- Ranked 134 out of 4638 in *78th William Putnam Mathematical Competition* — 2017
  Organized by *Mathematical Association of America*
- Walter Brown Memorial Prizes in Mathematics — 2019
  Awarded to the best final year student in Mathematics
- Doris Chen Undergraduate Project Prize — 2018
  To recognise research outputs and excellent performance in project courses in Mathematics
- Liu Ming-Chit Prize in Mathematics — 2018
  Awarded to a student in Mathematics who has completed his/her 2nd or 3rd year of study
- Alan John Allis Prize in Mathematics — 2016,2017
  Awarded to not more than *five* 1st or 2nd year undergraduates in Mathematics
- Dean's Honours List — 2016,2017,2019
- HKSAR Government Scholarship — 2015-2019
- Talent Development Scholarship — 2018

COMPUTER SKILLS

Programming Languages: Python, MATLAB, LaTeX.