LING LIANG

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EXPERIENCE

- **Postdoctoral Associate, University of Maryland at College Park, USA**
  August 2023 – Present
  Advisor: Prof. Haizhao Yang
- **Visiting Postdoctoral Researcher, Weierstrass Institute, Germany**
  March 2023 – June 2023
  Advisor: Dr. Jia-Jie Zhu
- **Research Fellow, National University of Singapore, Singapore**
  January 2022 – July 2023
  Advisor: Prof. Kim-Chuan Toh
- **Research Assistant, National University of Singapore, Singapore**
  August 2021 – December 2021
  Advisor: Prof. Kim-Chuan Toh

EDUCATION

- **Ph.D. in Mathematics, National University of Singapore, Singapore**
  August 2017 – November 2021
  Advisor: Prof. Kim-Chuan Toh
- **B.Sc. in Mathematics, University of Science and Technology of China, China**
  September 2013 – July 2017
  Advisor: Prof. Zhouwang Yang

AWARDS AND ACKNOWLEDGEMENTS

- **Louis Chen Hsiao Yun Best Dissertation Prize, National University of Singapore, 2022**

  (Awarded annually to the student with the best PhD thesis in mathematics and its applications)
- **Top Graduate Tutor Award, National University of Singapore, 2019 and 2020**
- **Research Scholarship, National University of Singapore, 2017-2021**

TEACHING

- **University of Maryland at College Park**
    - Instructor, Computational Methods, Fall 2023
- **National University of Singapore**
    - Graduate Tutor, Linear Algebra, Fall 2018
    - Graduate Tutor, Linear Algebra, Spring 2019
    - Graduate Tutor, Linear Algebra, Fall 2019
    - Graduate Tutor, Linear Algebra, Spring 2020

INVITED TALKS

- **SIAM Conference on Optimization, Seattle, May 2023**

  A Squared Smoothing Newton Method for Semidefinite Programming
- **The Hua Luogeng Applied Mathematics Youth Forum, Beijing, March 2023**

  A Squared Smoothing Newton Method for Semidefinite Programming
- **Argonne National Laboratory, Online Seminar, May 2022**

  An Inexact Projected Gradient Method with Rounding and Lifting by Nonlinear Programming for Solving Rank-One Semidefinite Relaxation of Polynomial Optimization
- **SIAM Conference on Optimization, Online Conference, July 2021**

  On Degenerate Doubly Nonnegative Projection Problems
- **Workshop on Matrix Optimization, Beijing, November 2019**

  A New Homotopy Proximal Variable-Metric Framework for Composite Convex Minimization
- **The Sixth International Conference on Continuous Optimization, Berlin, August 2019**

  A New Homotopy Proximal Variable-Metric Framework for Composite Convex Minimization

PUBLICATIONS

(Note: * = Corresponding Author)

- Hong T.M. Chu, **Ling Liang**, Kim-Chuan Toh, and Lei Yang.

  "An Efficient Implementable Inexact Entropic Proximal Point Algorithm for A Class of Linear Programming Problems."

  Computational Optimization and Applications 85, no. 1 (2023): 107-146.
- Heng Yang, **Ling Liang***, Luca Carlone, and Kim-Chuan Toh.

"An Inexact Projected Gradient Method with Rounding and Lifting by Nonlinear Programming for Solving Rank-One Semidefinite Relaxation of Polynomial Optimization."

Mathematical Programming 201, no. 1-2 (2023): 409-472.

- **Ling Liang***, Xudong Li, Defeng Sun, and Kim-Chuan Toh.

  "QPPAL: A Two-Phase Proximal Augmented Lagrangian Method for High Dimensional Convex Quadratic Programming."

  ACM Transactions on Mathematical Software 48, no. 3 (2022): 1-27.

- Ying Cui, **Ling Liang***, Defeng Sun, and Kim-Chuan Toh.

  "On Degenerate Doubly Nonnegative Projection Problems."

  Mathematics of Operations Research 47, no. 3 (2022): 2219-2239.

- Tran-Dinh Quoc, **Ling Liang**, and Kim-Chuan Toh.

  "A New Homotopy Proximal Variable-Metric Framework for Composite Convex Minimization."

  Mathematics of Operations Research 47, no. 1 (2022): 508-539.

- **Ling Liang***, Defeng Sun, and Kim-Chuan Toh.

  "An Inexact Augmented Lagrangian Method for Second-Order Cone Programming with Applications."

  SIAM Journal on Optimization 31, no. 3 (2021): 1748-1773.

PREPRINTS

- **Ling Liang**, Defeng Sun, and Kim-Chuan Toh.

  "A Squared Smoothing Newton Method for Semidefinite Programming."

  arXiv preprint arXiv: 2303.05825 (2023).

- Ching-Pei Lee, **Ling Liang**, Tianyun Tang, and Kim-Chuan Toh.

  "Escaping Spurious Local Minima of Low-Rank Matrix Factorization through Convex Lifting."

  arXiv preprint arXiv:2204.14067 (2022).

PROFESSIONAL SERVICES

- **Referee for Journals**
  - Mathematical Programming
  - SIAM Journal on Optimization
  - Mathematical Programming Computation
  - SIAM Journal on Mathematics of Data Science
  - Computational Optimization and Applications

- Journal of Scientific Computing
- Optimization Methods and Software

- **Conference and Workshop Organizations**
  - Session Chair, Optimization in the Big Data Era, National University of Singapore, 2022.
- **Judge for Singapore International Mathematics and Computational Challenge, November 2022.**
- **AD-HOC Non-Teaching Consultation Work, National University of Singapore, November 2022.**

REFERENCES

- **Prof. Kim-Chuan Toh**

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  National University of Singapore, 10 Lower Kent Ridge Road, 119076, Singapore
- **Prof. Defeng Sun**

  defeng.sun@polyu.edu.hk

  Department of Applied Mathematics

  The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong
- **Prof. Ying Cui**

  yingcui@berkeley.edu

  Department of Industrial Engineering and Operations Research

  University of California, Berkeley, CA, U.S.A
- **Prof. Victor Tan** (Teaching)

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