DONGCHEN LI

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EDUCATION

The University of Hong Kong, School of Computing and Data Science *Sep. 2023 – Present*

Ph.D. in Computer Science (Expected 2027), Advisor: Prof. Zhiyi Huang

Peking University, School of Mathematical Sciences *Sep. 2019 – Jul. 2023*

B.S. in Information Science

RESEARCH INTERESTS

Online algorithms, optimal stopping, approximation algorithms, automated algorithm design

PUBLICATIONS

- Prophet Secretary and Matching: the Significance of the Largest Item

  Authors: Ziyun Chen, Zhiyi Huang, Dongchen Li, Zhihao Gavin Tang

  Published in *36th ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 2025.

- Automating approximation analysis for Nash equilibria algorithms in two-player games

  Authors: Xiaotie Deng, Dongchen Li, Hanyu Li

  Published in *Information and Computation (IandC)*, Volume 307, 2025.

- A Computer-aided Approach for Approximate Nash Equilibria

  Authors: Dongchen Li, Hanyu Li, Xiaotie Deng

  Published in *The 20th Conference on Web and Internet Economics (WINE)*, 2024.

- On the Optimal Mixing Problem of Approximate Nash Equilibria in Bimatrix Games

  Authors: Xiaotie Deng, Dongchen Li, Hanyu Li

  Best Paper Award. *International Joint Conference on Theoretical Computer Science (IJTCS)*, 2024; *Theoretical Computer Science (TCS)*, Volume 1031, 2025 (extended version).

RESEARCH EXPERIENCE

Algorithms, Learning, Games, and Optimization Laboratory (ALGO Lab), University of Hong Kong *Sep. 2023 - Present*

PhD Student | Advisor: Prof. Zhiyi Huang

- Matroid Secretary Problem (2025–present)
- Prophet Inequality and Secretary Problem (2024-present)
- Reinforcement Learning Theory (2024-present)

daGame Lab, Peking University *Jan. 2021 - Present*

Undergraduate Research | Advisor: Prof. Xiaotie Deng

- Automated Algorithm Design and Analysis (2024-present)
- Polynomial-time Algorithms for Constant Approximate Nash Equilibria (2023-present)
- Analyzed Complexity of Quantal Response Equilibrium (2023)
- The Complexity of Fair-division (2023)
- Cheating Strategies in Correlated Equilibrium (2021)

Discrete Optimization Group, Peking University *Jan. 2023 - Jun. 2023*

Undergraduate Thesis | Advisor: Prof. Sihong Shao

- Authored Bachelor Thesis on Combinatorial Optimization (in Chinese):
  - Semidefinite Programming: Algorithms and Applications in Combinatorial Optimization
- Prepared Lecture Notes for Undergraduate Course "Mathematical Modeling" (in Chinese):
  - Lecture Note on Reinforcement Learning and Prediction Theory
  - Lecture Note on Nash Equilibrium and Computational Complexity

AWARDS & HONORS

- Best Paper Award - IJTCS *2024*
- Presidential PhD Scholarship - The University of Hong Kong *2023-present*
- Yizheng Scholarship (Top 25%) - Peking University *2021*
- Silver Medalist - Chinese Mathematical Olympiad (National Top 170) *2018*
- Academic Excellence Award - PKU *2020-2022*