

# Yikun Li

## Basic Information

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## Education

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**Doctor of Philosophy in Statistics and Data Science**

**2023-present**

*Department of Statistics and Data Science, Northwestern University*

*Evanston, IL, USA*

**Master in Statistics and Data Science**

**2023-2025**

*Department of Statistics and Data Science, Northwestern University*

*Evanston, IL, USA*

**Bachelor of Science in Statistics**

**2019-2023**

*School of Mathematical Sciences, Peking University*

*Beijing, China*

## Publications

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**Preprints**

1. **Y. Li**, M. Neykov. Robust Signal Detection with Quadratically Convex Orthosymmetric Constraints. *arXiv preprint arXiv:2308.13036*, 2026.

## Research Experiences

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**Research Assistant**

**June 2022-August 2022**

*Chongqing Research Institute of Big Data, Peking University*

Advisor: Haochen Li, Pingwen Zhang

Project: Machine Learning Based Analysis of Meteorological Data and Forecasting

Contribution: designed a machine learning based model “*MOML*” to provide high-resolution prediction of weather conditions and meteorological disasters with meteorological data.

**Undergraduate Dissertation**

**Sept. 2022-June 2023**

*School of Mathematical Sciences, Peking University*

Advisor: Wei Lin

Project: Variance-Reduced Methods in Off-Policy Estimation

Contribution: proposed a new algorithm under the off-policy *Natural Actor-Critic* (NAC) framework to reduce the exponentially large variance induced by the traditional importance sampling method.

**Research Assistant**

**July 2024-present**

*Department of Statistics and Data Science, Northwestern University*

Advisor: Matey Neykov

Project: Robust Signal Detection with Quadratically Convex Orthosymmetric Constraints

Contribution: proved the optimal theoretical minimax lower bound for the signal detection problem with data corruption and *quadratically convex orthosymmetric* (QCO) constraints; proposed a robust testing algorithm that achieves the optimal minimax rate with polynomial-time complexity.

## Academic Services

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Reviewer for *Electronic Journal of Statistics*, 2025

## Teaching Experiences

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### Northwestern University

Teaching Assistant, STAT 320-1: Introduction to Statistical Methods I	Fall 2024
Teaching Assistant, STAT 420-2: Introduction to Statistical Methods II	Winter 2025
Teaching Assistant, STAT 210-1: Introduction to Probability and Statistics	Spring 2025
Teaching Assistant, STAT 344: Statistical Computing	Fall 2025

## Honors and Awards

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### Peking University

Merit Student, Academic Year 2019-2020

Award for Academic Excellence, Academic Year 2020-2021

Merit Student, Academic Year 2021-2022

Excellent Graduate, Class of 2023

Second prize, Chinese Mathematics Competition for College Students (class A), 2020

Second prize, Chinese Mathematics Competition for College Students (class A), 2021

Third Class Scholarships (¥ 4000), Academic Year 2019-2020

Third Class Scholarships (¥ 4000), Academic Year 2020-2021

Third Class Scholarships (¥ 4000), Academic Year 2021-2022

## Skills

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### Programming

Proficient: C, Python, R, SQL, MATLAB, L<sup>T</sup>E<sub>X</sub>

Beginner: Mathematica, SPSS, CUDA, OpenMP, MPI

### Languages

Chinese (Native), English (Fluent)