

# Kangwei Li

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## About Me

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I am currently pursuing a Bachelor of Science in Mathematics at Xi'an Jiaotong University in Xi'an, China. I intend to pursue a Ph.D. in Statistics or Applied Mathematics upon completion of my undergraduate studies. My research interests include probability theory and duality in optimization.

## Education

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**Xi'an Jiaotong University** Sept 2023 - Present  
*Honors Science Program in Mathematics* Xi'an, China

- GPA: 4.0/4.3
- Courses: *Real Analysis, Probability, Mathematical Statistics, Functional Analysis, Complex Analysis*

**Harvard University** Jan 2026 - Present  
*Visiting Undergraduate Student Program* Cambridge, USA

- Courses: *Stochastic Process, Probability II, Convex Optimization, Decision Theory*

**Hangzhou High School & Xi'an Jiaotong University** Sept 2021 - Jun 2023  
*Honors Youth Program (Special Class for the Gifted Young)* Hangzhou & Xi'an, China

## Research Experience

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**Biologically plausible Neural Networks** Jun 2025 - Sept 2025  
*Supervised by Prof. Jianyong Sun, Xi'an Jiaotong University* Xi'an China

- Reviewed the shortcomings of backward algorithm
- Investigated biologically plausible neural network models, including equilibrium propagation
- Explored potential improvements to backpropagation from a biologically grounded perspective

**Research on Wasserstein Policy Gradient Method** Mar 2026 - Present  
*Advised by Prof. Rui Gao, University of Texas at Austin* Remote

- Proposed a Bellman-style operator for multistage stochastic programming by leveraging its recursive structure, inspired by reinforcement learning
- Derived a Fisher information bound for outer Lyapunov along the frozen drift trajectory

## Selected Awards & Honors

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**First Prize, The 16th Chinese Mathematics Competition(CMC)** Nov 2024  
China Mathematical Association

**China National Scholarship** (0.25% winning rate nationally) Dec 2024  
Xi'an Jiaotong University

## Experience

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**AI for Mathematics Seminar** Guangzhou, China  
*Peking University* Jan 2025

- Learned Lean, a mathematical proof assistant and functional programming language.
- Finished a formalization of a theorem in convex optimization theory with Lean as a group project.

## Skills

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Programming Languages: Python, R, Lean

Language: English (Proficient), Mandarin (Native)