

Jikun Li

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Education

Peking University, Beijing, China

Expected: July 2026

B.S. in Pure Mathematics, School of Mathematical Sciences

Overall GPA: 3.73/4.00 | Major GPA: 3.78/4.00

Research Interests: Algebraic Topology (stable homotopy theory, chromatic homotopy theory)

Research Experience

Twisting Maps and Adams Spectral Sequences

January 2025 – September 2025

Advisors: Prof. Peter May (University of Chicago), Prof. Guchuan Li, Prof. Lin Chen

- Constructed a concrete simplicial set model for the category of synthetic spectra
- Defined twisting maps to compute the Adams spectral sequence and related the first twisting map with the secondary Steenrod algebra

Obstruction Theory for Spectra with Given Homology

June 2024 – January 2025

Advisor: Prof. Guchuan Li (Peking University)

- Studied the original construction of the Brown-Peterson spectrum
- Analyzed classical and synthetic obstruction theory, focusing on *Abstract Goerss-Hopkins Theory*
- Proved the vanishing of obstructions for realizing the BP spectrum in odd prime cases

Stacks of Formal Groups

September 2025 – Present

Advisor: Prof. Guchuan Li, Prof. Lin Chen (Tsinghua University)

- Currently investigating the moduli stack of formal groups and its applications to chromatic homotopy theory

Summer Programs & Research Training

REU Program, University of Chicago

June 2025 – August 2025

- Completed research project under Prof. Peter May resulting in a paper on twisting maps

IWoAT Summer School 2024, SCMS, Shanghai

June 2024

- Studied motivic stable homotopy theory

Seminars & Advanced Coursework

Seminar on Lubin-Tate Theory (Organizer)

January 2025 – June 2025

- Organized and led seminar studying Lurie's and Hopkins's lecture notes on Lubin-Tate theorem.

Seminar on Categories and Topology (Co-organizer)

December 2024 – June 2025

- Co-organized seminar on University of Copenhagen lecture notes, see Catto; presented overview of higher category theory

Seminar on Synthetic Spectra (Participant)

September 2024 – January 2025

- Presented on classical obstruction theory and its synthetic analogues

Publications

Twisting maps and Adams Spectral sequence

In preparation and submitted

Language

Chinese native

English fluent, TOEFL 99