

Research Interests

(Equivariant/Motivic) Stable homotopy theory, computational algebra

Employment

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|--------------|---|
| 2024-present | Young Investigator (Tenure-track)
Fudan University |
| 2021-2024 | Instructor (Postdoc)
Peking University
Supervisor: Gang Tian |

Education

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| 2015-2021 | Doctor of Philosophy in Mathematics
The University of Chicago
Advisor: J. Peter May |
| 2011-2015 | Bachelor of Science in Mathematics
Peking University
Advisor: Houhong Fan |

Awards and Grants

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|------|---|
| 2026 | Young Scientists Fund of the NSFC
Grant No. 12501085 |
| 2021 | China Postdoctoral Science Foundation
Grant No. 021TQ0015 |

Publications and Preprints

- *On the Last Kervaire Invariant Problem*, with Guozhen Wang and Zhouli Xu.
Preprint (2024). arXiv:2412.10879
- *Machine Proofs for Adams Differentials and Extension Problems among CW Spectra*,
with Guozhen Wang and Zhouli Xu.
Preprint (2024). arXiv:2412.10876
- *Product formulas for motivic Milnor basis*, with Hana Jia Kong.
Preprint (2024). arXiv:2411.12890
- *Noncommutative Gröbner bases and Ext groups*.
Peking Mathematical Journal (2023). arXiv:2304.00506

- *On the May spectral sequence at the prime 2.*
Advances in Mathematics (2022). arXiv:2010.14754

Invited Talks

- June 2026 **Machine Computation in Homotopy Theory**
ICERM (Brown University), Providence, China
- Oct 2025 **Computations in Stable Homotopy Theory**
AIM (Caltech), Pasadena, China
- Aug 2025 **Feishu Math Symposium**
Feishu, Shanghai, China
- Apr 2025 **Colloquium Talk**
ShanghaiTech University, Shanghai, China
- Jan 2025 **IWOAT Special International Conference in Honor of Prof. Peter May**
SUSTech, Shenzhen, China
- Jan 2025 **ICCM 2025**
SIMIS, Shanghai, China
- Dec 2024 **eCHT Minicourses**
Online
- Sep 2024 **Tianyuan Mathematical Research Center**
Kunming, Yunnan, China
- Jul 2023 **International Workshop on Algebraic Topology 2023**
Peking University, Beijing, China
- May 2023 **Fudan Topology Seminar**
Fudan University, Shanghai, China
- Jul 2022 **Mid-South Algebraic Topology and Geometry Workshop**
Online
- Feb 2022 **eCHT seminar on machine computation in homotopy theory**
Online
- Jul 2021 **International Workshop on Algebraic Topology 2021**
Fudan University, Shanghai, China
- Jun 2021 **Colloquia & Seminars**
Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China
- Nov 2020 **UCLA algebraic topology seminar**
Online
- Oct 2020 **UChicago-Northwestern topology seminar**
Online
- June 2020 **Stony Brook student topology seminar**
Online
- Jun 2020 **GROOT Summer Seminar**
Online
- Aug 2019 **International Workshop on Algebraic Topology**
Fudan University, Shanghai, China

Aug 2019 **Summer School on Equivariant Stable Homotopy Theory**
Fudan University, Shanghai, China

Teaching

Instructor

Responsibilities include conducting lectures, holding problem sessions and office hours, writing assignments, grading exams, and managing TAs.

Autumn 2025	Fudan University, Selected Topics in Geometry and Topology
Spring 2025	Fudan University, Classical Mathematical Thought II
Spring 2024	Peking University, Homology Theory and Characteristic Classes
Fall 2023	Peking University, Selected Topics in Algebraic Topology
Spring 2021	Peking University, Selected Topics in Algebraic Topology
Winter 2020	UChicago, MATH 15300, Calculus 2
Fall 2019	UChicago, MATH 15200, Calculus 1
Spring 2019	UChicago, MATH 19600, Linear Algebra
Winter 2019	UChicago, MATH 15300, Calculus 3
Fall 2018	UChicago, MATH 15200, Calculus 2
Spring 2018	UChicago, MATH 15300, Calculus 3
Winter 2018	UChicago, MATH 15200, Calculus 2
Fall 2017	UChicago, MATH 15100, Calculus 1

College Fellow

Responsibilities include holding problem sessions and office hours, grading assignments and exams.

Spring 2017	Algebraic Number Theory
Winter 2017	Introduction to Commutative Algebra
Fall 2016	Elementary Number Theory

UChicago Mathematics REU

The REU is an eight-week summer program of study and research for undergraduates. Graduate student mentors assist students with choosing a topic, meet with them weekly, and provide feedback on their final papers.

Summer 2020	Joshua Enwright, <i>Some norms for Mackey functors</i>
Summer 2020	Andrew Burke, <i>Hopf Algebras and Exotic Characteristic Classes</i>
Summer 2019	Chris Albert, <i>Physical Applications of Fixed Point Methods in Differential Equations</i>
Summer 2019	Mark Schachner, <i>The Game of Hex: a Study in Graph Theory and Algebraic Topology</i>
Summer 2019	Rafael M. Saavedra, <i>The Hopf invariant one problem</i>
Summer 2018	Indraneel Tambe, <i>Cubical Structures of Multi-Fold Internal Categories</i>
Summer 2018	Eleanor Mcspirit, <i>Homotopy Theory from Subdivisions of A-Space Models</i>
Summer 2018	Doron L Grossman-Naples, <i>Finite Manifolds and Minimal Finite Models of Closed Surfaces</i>

Summer 2017 Parth Sarin, *The Cup Length in Cohomology as a Bound on Topological Complexity*
Summer 2017 Catherine Wolfram, *Persistent Homology on Phonetic Data*