

Ruoxi Li
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Thackeray Hall, Pittsburgh, PA

EDUCATION

- 2019–Present* **Ph.D.**, University of Pittsburgh (Advisor: [Prof. Roman Fedorov](#))
2016–2018 **M.S.**, University of Illinois Urbana-Champaign
2012–2016 **B.S.**, Nankai University

RESEARCH INTERESTS

My research focuses on algebraic geometry and representation theory. More specifically, I am interested in moduli stacks of Higgs bundles and bundles with connections, character varieties, and moduli spaces of quiver representations. Recently, I have also been interested in invariant D -modules.

PUBLICATIONS AND PREPRINTS

1. Explicit formulas for mixed Hodge polynomials of character varieties of nilpotent groups (with [Rahul Singh](#)). [arXiv: 2410.10008](https://arxiv.org/abs/2410.10008).
2. Motivic classes of stacks in finite characteristic and applications to stacks of Higgs bundles. [arXiv: 2509.09861](https://arxiv.org/abs/2509.09861).
3. Invariant algebraic D -Modules on semisimple and general linear groups: classification and tensor categories (with [Rudrendra Kashyap](#)). [arXiv: 2601.10934](https://arxiv.org/abs/2601.10934).

PROJECTS

- 2022– Motivic classes of stacks in finite characteristic and applications to stacks of bundles with connections (with [Roman Fedorov](#)).
2024– Motives of moduli spaces of stable quiver representations (with [Sergey Mozgovoy](#), [Markus Reineke](#) and [Rahul Singh](#)).

INVITED TALKS

- 11/2025 Motivic classes in finite characteristic with applications to Higgs bundles and bundles with connections, [M-Seminar](#), Kansas State University.
03/2025 Motivic classes of varieties and stacks with applications to Higgs bundles, [Arithmetic Seminar](#), Binghamton University.

CONTRIBUTED TALKS

- 08/2025 Motivic classes in finite characteristic with applications to Higgs bundles and bundles with connections, [Workshop on Character Varieties and Higgs Bundles](#), University of Costa Rica. 10-minute Talk and poster session.
05/2025 Motivic classes of varieties and stacks with applications to Higgs bundles, [GTA Philadelphia](#), Temple University. 30-minute Talk.

* Expected 2026.

11/2024	Motivic classes in finite characteristic with applications to Higgs bundles and bundles with connections, Western Algebraic Geometry Symposium , University of Arizona. Poster session.
11/2024	Motivic classes in finite characteristic with applications to Higgs bundles and bundles with connections, Algebraic Geometry Northeastern Series , Dartmouth College. Poster session.
11/2024	Motivic classes of varieties and stacks with applications to Higgs bundles Part II, Graduate Student Seminar , University of Pittsburgh.
10/2024	Motivic classes of varieties and stacks with applications to Higgs bundles, BUGCAT Conference , Binghamton University. 20-minute Talk.
10/2024	Motivic classes of varieties and stacks with applications to Higgs bundles Part I, Graduate Student Seminar , University of Pittsburgh.
09/2024	Motivic classes of varieties and stacks with applications to Higgs bundles, Algebraic Groups and the Geometric Langlands Program Seminar , University of Pittsburgh.
08/2024	Motivic classes of stacks in finite characteristic and applications to stacks of Higgs bundles and bundles with connections, Richmond Geometry Meeting , Virginia Commonwealth University. Poster session.

TEACHING EXPERIENCES

University of Pittsburgh

Instructor

MATH 0290 Differential Equations, SU 2024

Teaching Assistant

MATH 0120 Business Calculus, FA 2020, 2021, SU 2025

MATH 0220 Analytic Geometry & Calculus 1, SP 2021, 2022, 2024

MATH 0230 Analytic Geometry & Calculus 2, SP 2021, 2025, SU 2021, FA 2021, 2022

MATH 0413 Intro Theoretical Mathematics, SU 2021

MATH 0420 Intro Theory 1-Variable Calculus, SP 2023

MATH 0430 Intro Abstract Algebraic Systems, SP 2023, 2024

Grader

MATH 0290 Differential Equations, FA 2024, SP 2026

MATH 0400 Finite Mathematics, SP 2021

MATH 1020 Applied Elementary Number Theory, FA 2022, 2023

MATH 1050 Combinatorial Mathematics, FA 2022, 2023

MATH 1470 Partial Differential Equations 1, FA 2021

ACADEMIC SERVICE

2025 Mentor, [CMU-Pitt Directed Reading Program](#)

2024– Referee, [Pittsburgh Interdisciplinary Mathematics Review](#)

HONORS AND AWARDS

2019 Arts & Sciences Graduate Fellowship, University of Pittsburgh

2012 Freshman's Second Prize Scholarship, Nankai University