

Guanyu Li

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🌐 <https://sites.google.com/view/guanyu-li-math/home>

Interests

- My research interests on mathematics are derived algebraic geometry, algebraic geometry, homotopy theory and cohomology theories, as well as fields related to derived algebraic geometry such as category theory, algebraic topology, algebra, complex geometry, and mathematical physics.
- Most of my current projects are related to representation homology, which is a DAG object. I focus on computational aspect of these objects and manage to connect the higher information with the original algebro-geometric spaces. I'm very interested in the connections of representation homology with other homology theories.

Education

- August 2018 – Present **Ph.D in Mathematics**,
Cornell University, Ithaca, NY
Advisor: Yuri Berest
- August 2014 – June 2018 **BS in Mathematics and Applied Mathematics**,
Sun Yat-sen University, Guangzhou, China.

Publications

- [LL] **1** Guanyu Li and Yun Liu. “Relative Categories and Relative Adjunctions”. in preparation.
- [Li24] **2** Guanyu Li. *Commuting Varieties of Upper Triangular Matrices and Representation Homology*. 2024. arXiv: 2403.13953.

Teaching

Cornell University

2024 Spring	MATH 4180 Complex Analysis	Work as a grader.
2023 Fall	MATH 1110 Calculus I	Work as an instructor.
2023 Summer	MATH 1110 Calculus I	Work as a grader.
2023 Spring	MATH 6510 Algebraic Topology	Work as a grader.
2022 Fall	MATH 1110 Calculus I	Work as an instructor.
2022 Summer	MATH 2940 Linear Algebra for Engineers	Work as a grader.
2022 Spring	MATH 6510 Algebraic Topology	Work as a grader.
2021 Fall	MATH 3040 Prove It!	Work as a grader.
2021 Summer	MATH 1110 Calculus I	Work as a grader.
2021 Spring	MATH 6320 Algebra	Work as a grader.
2020 Fall	MATH 2210 Linear Algebra	Work as a recitation TA.
2020 Summer	MATH 1920 Multivariables for Engineers	Work as a grader.
2020 Spring	MATH 4280 Introduction to PDE	(Partially) Work as a grader.
2019 Fall	MATH 2210 Linear Algebra	Work as a recitation TA.

Teaching (continued)

2019 Spring

📖 MATH 4500 Matrix Groups

Work as a grader.

Invited talks

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| Algebra Seminar, Cornell | Commuting Varieties of Upper Triangular Matrices and Representation Homology Friday, March 08, 2024 |
| BUGCAT, Binghamton University | Representation homology and some computations with unipotent coefficients Saturday, November 11, 2023 |
| Sun Yat-sen University | Deriving the representation variety Friday, June 09, 2023 |
| Olivetti Club, Cornell | Algebraic Topology is Inevitable Tuesday, March 28, 2023 |
| | Why Should Algebraic Geometry be Derived? Tuesday, November 5, 2019 |