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

1. **G. Li**, "Commuting varieties of upper triangular matrices and representation homology," in preparation.
2. **G. Li** and Y. Liu, "Relative categories and relative adjunctions," in preparation.

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.

Teaching (continued)

2019 Fall	**MATH 2210 Linear Algebra**	Work as a recitation TA.
2019 Spring	**MATH 4500 Matrix Groups**	Work as a grader.

Invited talks

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