Shiyue Li

Brown University, Department of Mathematics
151 Thayer Street, Providence, RI 02912, United States
shiyue_li@brown.edu

Research Interests	Algebraic Geometry, Combinatorics.	
Education	**Brown University**	2019-present
	PhD in Mathematics.	
	Advisor: Melody Chan.	
	Yale University	2017-2019
	M.Sc. in Mathematics, Lang Fellow, with Advancement to PhD Candidacy.	
	Harvey Mudd College	2013-2017
	B.S. in Mathematics, with Distinction and Honors.	
	HSA Concentration in Music.	

Research

5. **Topological Zeta Functions of Families of Matroids**
   with Max Kutler, Dawit Mengesha, Robert Miranda, Brian Sun, in preparation.

4. **Relative Bott-Samelson Varieties**
   in preparation.

3. **Topology of Tropical Moduli Spaces of Weighted Stable Curves in Higher Genus**
   with Siddarth Kannan, Stefano Serpente, Claudia Yun.
   Preprint.

2. **Chow Ring of Heavy/Light Hassett Spaces via Tropical Geometry**
   with Siddarth Kannan, Dagan Karp.
   To appear, *Journal of Combinatorial Theory, Series A*.

1. **Tropical Derivation of Cohomology Rings of Heavy/Light Hassett Spaces**
   undergraduate thesis under supervision of Dagan Karp, Dhruv Ranganathan

Awards Honors	**Robert Willets Carle Fellowship**	2018-2019
	Yale University	
	Kenneth and Mary Wang Fellowship	2017-2018
	Yale University	
	Lang Fellowship	2017-2023
	Yale University, Department of Mathematics	
	Harvey S. Mudd Merit Award	2013-2017
	Harvey Mudd College, awarded to students who demonstrate superior academic achievement and ability to contribute to the College community.	

	Yu Yuen Kit So International Scholarship	2013-2017

Harvey Mudd College, awarded to one international recipient for each entering class based on superior academic performance.

China National Linguistics Olympiad Individual 3rd Place	2013
China National Linguistics Olympiad Team 2nd Place	2013

Seminar Talks

TBD — Nov 2020
Algebra Seminar, Brown University

Topology of Tropical Moduli Spaces of Weighted Stable Curves in Higher Genus — Oct 2020
American Graduate Student Algebraic Geometry Seminar

Chow Ring of Heavy/Light Hassett Spaces — Mar 2020
Tufts University,
AMS Spring Eastern Sectional Meeting on Moduli of Curves, Hilbert Schemes, and Tropical Geometry, cancelled due to COVID

Bott-Samelson Resolution of Singularities — Mar 2020
Brown University, Graduate Student Seminar

Moduli Space of Linear Series with Imposed Ramification — Feb 2019
Yale University, Graduate Student Seminar

Moduli Space of Linear Series with Imposed Ramification — Feb 2019
Brown University, Graduate Student Seminar

Poster Sessions

Relative Bott-Samelson Varieties — Oct 2020
Algebraic Geometry North-Eastern Series, Stony Brook University

Outreach Talks

Schubert Calculus — Jul 2020
Yale University, SUMRY 2020 Colloquium

Matroids — Nov 2019
Yale University, Yale Undegraduate Mathematics Society

How to Solve The Quintics? — Oct 2019
Brown University, Department Undergraduate Group Colloquium

Teaching

Brown University, Providence, RI — Fall 2020
- Math 100 Introductory Calculus, Part II, TA

Canada/USA Mathcamp, Portland, OR — Summer 2019
- Introduction to Group Theory
- Young tableaux and Representation Theory
- Young tableaux and Combinatorics
- Young tabelaux and Probability

Canada/USA Mathcamp, Golden, CO — Summer 2018
- Algebraic Number Theory
- Geometric Group Theory

- Modular Forms
- Tropical Plane Curves and Rational Points on Elliptic Curves

Yale University, New Haven, CT

- Math 225 Linear Algebra and Matrix Theory, TA	Fall 2018
- Math 112 Calculus, TA	Spring 2018

Mentoring	**Summer Undergraduate Math Research at Yale**	Summer 2020
	Co-mentor: Max Kutler.	
	Mentees: Dawit Mengesha, Robert Miranda, Brian Sun.	
	Canada/USA Mathcamp Projects	
	- Research. Mentee: Ilaria Seigal.	Summer 2019
	- Enumerative Geometry. Mentees: Alice Jenkins, Jeremy Zhou.	Summer 2019
	- Primes of the Form $x^2 + ny^2$. Mentee: Reed Jacobs.	Summer 2018
	- Schubert Calculus. Mentees: Simran Khunger, Rupert Li.	Summer 2018
	- Group action and Sylow's Theorems. Mentees: Serena An.	Summer 2018
	Brown Mathematics Directed Reading Program	
	- Ideals, Varieties and Algorithms.	Fall 2020
	Mentees: Deven Carmichael, Joseph Hlavinka.	
	- Foundations of Algebraic Geometry.	Spring 2020
	Mentees: Dominick Joo, Elliott Lehrer, Joshua Lebo.	
	Women in Sciences at Yale	Fall 2018
	Mentee: Alara Değirmenci.	
Other Professional Activities	**Google Research**, Mountain View, CA	Summer 2016
	Mentors: Caroline Pantofaru, Malcolm Slaney.	
	Research on Machine Learning algorithms to solve a human saliency event detection problem using machine hearing and computer vision.	
	Howard Hughes Medical Institute, Claremont, CA	Summer 2014
	Advisor: Blerta Shtylla	
	Mathematical modeling on DNA Segregation. Implemented Gillespie algorithms and Next Sub-volume Method to simulate diffusion and reactions of ParA and ParB proteins.	
	Summer Science Program, Socorro, NM	Summer 2012
	Research on orbit determination of solar-system body. Implemented programs in Python using iterative Gaussian method to determine the orbit elements based on the observation data of Asteroid 1998QS52 in Etscorn Observatory.	
	Paper and results archived in Harvard-Smithsonian Center for Astrophysics.	
Service	*Brown Math Diversity and Inclusiveness Committee*, Member	2019-2020
	Brown University ACCRIP, Graduate Representative	2019-2020
	AMS Graduate Conferences, Organizer	2020
	Brown Math Directed Reading Program, Organizer	2019-2020
	Intersections: Women and Gender Minority Groups in Mathematics at Yale,	
	Co-organizer	2018

Yale Math Directed Reading Program, Organizer	2018
Yale Graduate and Professional Student, Senator	2018
Harvey Mudd College Math Club, President	2016
Caltech Harvey Mudd Math Competition, Organizer	2016

Languages   Mandarin Chinese, English, French, C++, Python

Hobbies   Piano, running, rock climbing.

References   References are available on request.