

# Shiyue Li

Brown University, Department of Mathematics

<b>Research Interests</b>	Algebraic geometry, combinatorics, topology.	
<b>Education</b>	<b>Brown University</b> PhD in Mathematics. Advisor: Melody Chan.	2019-present
	<b>Yale University</b> M.Sc. in Mathematics, Lang Fellow, PhD candidate.	2017-2019
	<b>Harvey Mudd College</b> B.S. in Mathematics, with Distinction and Honors. HSA Concentration in Music.	2013-2017
<b>Research</b>	<ol style="list-style-type: none"><li>6. <i>Polyhedral complexes and moduli space of curves with cyclic action</i> with Emily Clader, Chiara Damiolini, Daoji Huang, Rohini Ramadas, in preparation.</li><li>5. <i>Topological zeta functions of matroids</i> with Max Kutler, Dawit Mengesha, Robert Miranda, Brian Sun, in preparation.</li><li>4. <i>Relative Bott-Samelson varieties</i> arXiv e-preprint 2011.04814.</li><li>3. <i>Topology of tropical moduli spaces of weighted stable curves in higher genus</i> with Siddarth Kannan, Stefano Serpente, Claudia Yun. arXiv e-preprint 2010.11767.</li><li>2. <i>Chow ring of heavy/light Hassett spaces via tropical geometry</i> with Siddarth Kannan, Dagan Karp. Journal of Combinatorial Theory, Series A. 178C (2021) 105348.</li><li>1. <i>Tropical derivation of cohomology rings of heavy/light Hassett spaces</i> undergraduate thesis under supervision of Dagan Karp, Dhruv Ranganathan</li></ol>	
<b>Awards Honors</b>	<b>Robert Willets Carle Scholarship</b> Yale University	2018-2019
	<b>Kenneth and Mary Wang Fellowship</b> Yale University	2017-2018
	<b>Lang Fellowship</b> Yale University, Department of Mathematics	2017-2023
	<b>Harvey S. Mudd Merit Award</b> Harvey Mudd College, awarded to students who demonstrate superior academic achievement and ability to contribute to the College community.	2013-2017

	<b>Yu Yuen Kit So International Scholarship</b>	2013-2017
	Harvey Mudd College, awarded to one international recipient for each entering class based on superior academic performance.	
	<b>China National Linguistics Olympiad 3rd Place</b>	2013
	<b>China National Linguistics Olympiad Team 2nd Place</b>	2013
<b>Invited Talks</b>	SIAM conference on Applied Algebraic Geometry	Aug 2021
	Tropical Geometry in Frankfurt (TGiF)-Seminar	Apr 2021
	AMS Spring Eastern Sectional Meeting on Moduli of Curves	Mar 2021
	Brown University Algebra Seminar	Nov 2020
	American Graduate Student Algebraic Geometry Seminar	Oct 2020
	AMS Spring Eastern Sectional Meeting on Moduli of Curves	Mar 2020
<b>Outreach Talks</b>	Summer Undergraduate Mathematics Research at Yale 2020 Colloquium	Jul 2020
	Johns Hopkins Center for Talented Youth Colloquium	Mar 2020
	Yale Undergraduate Mathematics Society Colloquium	Nov 2019
	Department Undergraduate Group Colloquium at Brown University	Oct 2019
<b>Professional Positions</b>	<b>Google Research</b> , 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.	
	<b>Howard Hughes Medical Institute</b> , 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.	
<b>Teaching</b>	<b>Summer Science Program</b> , 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 Etsorn Observatory.	
	Paper and results archived in Harvard-Smithsonian Center for Astrophysics.	
	<b>Brown University</b> , Providence, RI	
	Math 100 Introductory Calculus, Part II, TA	Spring 2021
	Math 100 Introductory Calculus, Part II, TA	Fall 2020
	<b>Canada/USA Mathcamp 2019</b> , Portland, OR	Summer 2019
	Introduction to Group Theory	
	Young tableaux and Representation Theory	
	Young tableaux and Combinatorics	
	Young tableaux and Probability	
	<b>Canada/USA Mathcamp 2018</b> , Golden, CO	Summer 2018
	Algebraic Number Theory	
	Geometric Group Theory	
	Modular Forms	
	Tropical Plane Curves and Rational Points on Elliptic Curves	

	<b>Yale University</b> , New Haven, CT Math 225 Linear Algebra and Matrix Theory, TA Math 112 Calculus, TA	Fall 2018 Spring 2018
<b>Mentoring</b>	<b>Summer Undergraduate Math Research at Yale</b> Co-mentor: Max Kutler. Mentees: Dawit Mengesha, Robert Miranda, Brian Sun.  <b>Canada/USA Mathcamp Projects</b> Research. Mentee: Ilaria Seigal. Enumerative Geometry. Mentees: Alice Jenkins, Jeremy Zhou. Primes of the Form $x^2 + ny^2$ . Mentee: Reed Jacobs. Schubert Calculus. Mentees: Simran Khunger, Rupert Li. Group action and Sylow's Theorems. Mentees: Serena An.	Summer 2020     Summer 2019 Summer 2019 Summer 2018 Summer 2018 Summer 2018
	<b>Brown Mathematics Directed Reading Program</b> Ideals, Varieties and Algorithms. Mentees: Deven Carmichael, Joseph Hlavinka. Foundations of Algebraic Geometry. Mentees: Dominick Joo, Elliott Lehrer, Joshua Lebo.	Fall 2020  Spring 2020
	<b>Women in Sciences at Yale</b> Mentee: Alara Değirmenci.	Fall 2018
<b>Service</b>	<i>Brown Math Diversity and Inclusiveness Committee</i> , Member <i>Brown University ACCRIP</i> , Graduate Representative <i>AMS Graduate Conferences</i> , Organizer <i>Brown Math Directed Reading Program</i> , Organizer <i>Intersections: Women and Gender Minority Groups in Mathematics at Yale</i> , Co-organizer <i>Yale Math Directed Reading Program</i> , Organizer <i>Yale Graduate and Professional Student</i> , Senator <i>Harvey Mudd College Math Club</i> , President <i>Caltech Harvey Mudd Math Competition</i> , Organizer	2019-2020 2019-2020 2020 2019-2020  2018 2018 2018 2016 2016
<b>Languages</b>	Mandarin Chinese, English, French, C++, Python	
<b>Hobbies</b>	Piano, running, climbing, mountaineering.	
<b>References</b>	References are available on request.	