Shiyue Li

EMPLOYMENT

Institute for Advanced Study   2023–2024
Member. Mentor: June Huh.

EDUCATION

Brown University   2019–2023
Ph.D. in Mathematics. Advisor: Melody Chan

Yale University   2017–2019
M.Sc. in Mathematics. Lang Fellow.

Harvey Mudd College   2013–2017
B.Sc. in Mathematics with Distinction and Honors. Advisor: Dagan Karp.

PUBLICATIONS

Equivariant log-concavity of graph matchings
Algebraic Combinatorics, to appear. arXiv: 2202.08828

Premutohedral complexes and rational curves with cyclic action
with Emily Clader, Chiara Damiolini, Daoji Huang, Rohini Ramadas.
manuscripta mathematica. DOI:10.1007/s00229-022-01419-6

Intersecting psi-classes on tropical Hassett spaces
with Marvin Anas Hahn.
Combinatorial Theory **2**(3), DOI:10.5070/C62359165

Topology of tropical moduli spaces of weighted stable curves in higher genus
with Siddarth Kannan, Stefano Serpente, Claudia Yun.
Advances in Geometry, to appear. arXiv: 2010.11767.

Chow ring of heavy/light Hassett spaces via tropical geometry
with Siddarth Kannan, Dagan Karp.
Journal of Combinatorial Theory, Series A. **178**C (2021) 105348

PREPRINTS

Equivariant log-concavity of independence sequences of claw-free graphs
Draft available at shiyue.li

K-rings of wonderful varieties and matroids
with Matt Larson, Sam Payne, Nicholas Proudfoot.
arXiv 2210.03169

Wonderful compactifications and rational curves with cyclic action
with Emily Clader, Chiara Damiolini, Rohini Ramadas.
arXiv: 2208.05463

Relative Bott-Samelson varieties
arXiv: 2011.04814

Fellowships and Awards

- Coline M. Makepeace Fellowship, Brown University   2021–2022
- Robert Willets Carle Scholarship, Yale University   2018–2019
- Kenneth and Mary Wang Fellowship, Yale University   2017–2018
- Lang Fellowship, Departmeent of Mathematics, Yale University   2017–2019
- Harvey S. Mudd Merit Award (annually), Harvey Mudd College   2013–2017
- Yu Yuen Kit So International Scholarship, Harvey Mudd College   2013–2017
- Dean's List, Harvey Mudd College (all semesters)   2013–2017
- China National Linguistics Olympiad 3rd Place (all semesters)   2013
- China National Linguistics Olympiad Team 2nd Place   2013

Invited Talks

- Growing up in Sciences, Bowdoin College   Feb 2023
- AWM Student Seminar (online), University of Pittsburgh   Feb 2023
- Combinatorics Seminar, University of Michigan   Feb 2023
- Fields Institute Seminar (online)   Dec 2022
- Algebra and Algebraic Geometry Seminar, University of Washington   Nov 2022
- MIT-Harvard-MSR Combinatorics Seminar, Harvard University   Nov 2022
- AMS Special Session on Combinatorial Algebraic Geometry, UMass Amherst   Oct 2022
- Research Symposium, University of Minnesota   Jun 2022
- RATCOW, University of Oregon   Jun 2022
- BATMOBILE, Brown University   Jun 2022
- Combinatorial and Nonlinear Day, Brown University   Apr 2022
- Joint Mathematics Meetings AWM Special Session   Apr 2022
- Canadian Math Society: Combinatorics and Geometry of Moduli Spaces   Dec 2021
- Front Range Algebraic Geometry and Number Theory, Colorado State University   Sep 2021
- SIAM Conference on Applied Algebraic Geometry   Aug 2021
- Moduli Across the Pandemic, Boston College   Apr 2021
- Tropical Geometry in Frankfurt (TGiF) Seminar   Apr 2021
- AMS Spring Eastern Sectional Meeting on Moduli of Curves   Mar 2021
- Algebra Seminar, Brown University   Nov 2020
- American Graduate Student Algebraic Geometry Seminar   Oct 2020
- AMS Spring Eastern Sectional on Moduli of Curves (cancelled)   Mar 2020

Service

- **Referee**
  International Mathematics Research Notices, IMRN.

- **Organizational**
AMS Student Chapter at Brown University, Chair	2019–2021
Diversity and Inclusiveness Committee at Brown University, Member,	2019–2020
AMS Graduate Coneferences at Brown University, Organizer	2020
Directed Reading Program at Brown University, Organizer	2019–2020
Womxn in Mathematics at Yale University, Co-organizer	2018
Yale Graduate and Professional Student Senate, Senator	2017–2018
Harvey Mudd College Math Club, President	2016–2017
Caltech-Harvey Mudd Math Competition, Organizer	2015–2016

Teaching

- **Sheridan Teaching Certificate I** — Fall 2021

- **Brown University, Teaching Assistant**
Math 90 Introduction to Calculus	Spring 2023
Math 100 Calculus Part II	Fall 2022
Math 100 Calculus Part II	Spring 2022
Math 100 Calculus Part II	Spring 2021
Math 100 Calculus Part II	Fall 2020
Math 100 Calculus Part II	Spring 2019

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

- **Canada/USA Mathcamp, Mentor** — Summer 2018
  Algebraic Number Theory
  Geometric Group Theory
  Modular Forms
  Tropical Plane Curves
  Rational Points on Elliptic Curves

- **Yale University, Teaching Assistant**
Math 225 Linear Algebra and Matrix Theory	Fall 2018
Math 112 Single Variable Calculus	Spring 2018

Mentoring

- **Summer Undergraduate Math Research at Yale** — Summer 2020
  Dawit Mengesha, Robert Miranda, Brian Sun. Co-mentor: Max Kutler.
  Topological zeta functions of matroids.

- **Canada/USA Mathcamp Learning Projects** — Summer 2019
  Ilaria Seigal.
  Alice Jenkins, Jeremy Zhou. *Schubert calculus.*
  Reed Jacobs. *Primes of the form $x^2 + ny^2$.*
  Simran Khunger, Rupert Li. *Enumerative Geometry and Young Tableaux*
  Serena An. *Group actions and Sylow's theorems.*

- **Brown Mathematics Directed Reading Program** — 2019
  Deven Carmichael, Joseph Hlavinka. *Ideals, Varieties and Algorithms.*
  Dominick Joo, Elliott Lehrer, Joshua Lebo. *Foundations of Algebraic Geometry.*

- **Women in Sciences at Yale**   Fall 2018
  Alara Değirmenci.

Outreach

- Growing up in Sciences Lecture Series, Bowdoin College   Feb 2023
- Summer Undergraduate Math Research at Yale (SUMRY) Colloquium   Jul 2020
- Johns Hopkins Center for Talented Youth Colloquium (canceled)   Mar 2020
- Yale Undergraduate Mathematics Society (YUMS) Colloquium   Nov 2019
- Department Undergraduate Group (DUG) Colloquium at Brown   Oct 2019

Other Scientific Positions

Google Research. Mountain View, CA.   Summer 2016
Research Intern. Mentors: Caroline Pantofaru, Malcolm Slaney

Howard Hughes Medical Institute. Pomona, CA.   Summer 2014
Mentor: Blerta Shtylla.

Summer Science Program. Socorro, NM.   Summer 2012
Orbit determination of Asteroid 1998QS52 (Harvard–Smithonian Center for Astrophysics archived).