

Research interests: Algebraic Geometry, Combinatorics, Tropical Geometry.

EMPLOYMENT

Institute for Advanced Study , Member	2023–2025
Mentor: June Huh.	

EDUCATION

Brown University , Ph.D. in Mathematics Advisor: Melody Chan.	2019–2023
Yale University , M.Sc. in Mathematics Lang Fellow.	2017–2019
Harvey Mudd College , B.Sc. in Mathematics with Honors and Distinction Advisor: Dagan Karp.	2013–2017

PUBLICATIONS

Multimatroids and rational curves with cyclic action
 with Emily Clader, Chiara Damiolini, Christopher Eur, Daoji Huang.
[International Mathematical Research Notices](#). (2024)

K -rings of wonderful varieties and matroids
 with Matt Larson, Sam Payne, Nicholas Proudfoot.
[Advances in Mathematics](#) **441**. (2024)

Equivariant log-concavity of independence sequences of claw-free graphs
[Séminaire Lotharingien de Combinatoire](#) **89B**. (2023)

Wonderful compactifications and rational curves with cyclic action
 with Emily Clader, Chiara Damiolini, Rohini Ramadas.
[Forum of Mathematics, Sigma](#) **11**. (2022)

Equivariant log-concavity of graph matchings
[Algebraic Combinatorics](#) **6**(3). (2023)

Permutohedral complexes and rational curves with cyclic action
 with Emily Clader, Chiara Damiolini, Daoji Huang, Rohini Ramadas.
[manuscripta mathematica](#). (2022)

Intersecting psi-classes on tropical Hassett spaces
 with Marvin Anas Hahn.
[Combinatorial Theory](#) **2**(3). (2022)

Relative Bott–Samelson varieties

[La Matematica](#) **2**. (2023)

Topology of tropical moduli spaces of weighted stable curves in higher genus

with Siddarth Kannan, Stefano Serpente, Claudia Yun.

[Advances in Geometry](#), **23**(3). (2023)

Chow ring of heavy/light Hassett spaces via tropical geometry

with Siddarth Kannan, Dagan Karp.

[Journal of Combinatorial Theory, Series A](#) **178C**. (2021)

PREPRINTS

Kapranov degrees

with Joshua Brakensiek, Christopher Eur, Matt Larson.

[arXiv](#) 2308.12285.

FELLOWSHIPS, GRANTS AND AWARDS

NSF Grant DMS-1926686	2023–2024
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, Department 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	2013
China National Linguistics Olympiad Team 2nd Place	2013

INVITED TALKS

Workshop on “ <i>Geometry of Matroids</i> ” Institute for Advanced Study	Oct 2024
Workshop on “ <i>Moduli spaces of curves, moduli spaces of graphs and graph complexes</i> ” ETH Zürich, Switzerland	Sep 2024
Workshop on “ <i>Combinatorics and Moduli Spaces of Curves</i> ” Banff International Research Station, Canada	Jul 2024
Workshop on “ <i>Matroid Theory</i> ” Suzhou University, Suzhou, China	Jul 2024
Workshop on “ <i>Arrangements, Matroids and Logarithmic Vector Fields</i> ”, Oberwolfach, Germany	Jun 2024
<i>Algebraic Geometry Seminar</i> Columbia University	Apr 2024
<i>Algebra Seminar</i> Tufts University	Apr 2024
“ <i>What is...?</i> ” Seminar Institute for Advanced Study	Mar 2024

<i>Mathematical Conversations</i> Institute for Advanced Study	Mar 2024
<i>Combinatorics Seminar</i> (online) University of Minnesota	Feb 2024
<i>F₁ World Seminar</i> (online)	Jan 2024
Special Session on “ <i>Combinatorial perspectives on algebraic curves and their moduli</i> ” Joint Mathematics Meetings, San Francisco, USA	Jan 2024
Preparatory Lectures for <i>Chow Lectures</i> Max Planck Institute, Leipzig, Germany	Oct 2023
Workshop on “ <i>Curves: Algebraic, Tropical, and Logarithmic</i> ” Banff International Research Station, Canada	Aug 2023
<i>The 35th Formal Power Series and Algebraic Combinatorics (FPSAC 2023)</i> University of California, Davis	Jul 2023
Workshop on “ <i>GEMS in Combinatorics</i> ” American Institute of Mathematics, USA	Mar 2023
Workshop on “ <i>Algebraic Aspects of Matroids</i> ” Banff, Canada Banff International Research Station, Canada	Mar 2023
Lecture series on “ <i>Growing up in Sciences</i> ” Bowdoin College	Feb 2023
Association of Women in Mathematics Student Seminar (online) University of Pittsburgh	Feb 2023
<i>Combinatorics Seminar</i> University of Michigan	Feb 2023
<i>Matroid Seminar</i> (online) Fields Institute	Dec 2022
<i>Algebra and Algebraic Geometry Seminar</i> University of Washington	Nov 2022
<i>MIT-Harvard-MSR Combinatorics Seminar</i> Harvard University	Nov 2022
AMS Special Session on “ <i>Combinatorial Algebraic Geometry</i> ” University of Massachusetts, Amherst	Oct 2022
<i>AWM Research Symposium</i> University of Minnesota	Jun 2022
<i>RATCOW Seminar</i> University of Oregon	Jun 2022
<i>BATMOBILE</i> Brown University	Jun 2022
<i>Combinatorial and Nonlinear Day</i> Brown University	Apr 2022
<i>Joint Mathematics Meetings AWM Special Session</i> (online)	Apr 2022
<i>Canadian Math Society: Combinatorics and Geometry of Moduli Spaces</i> (online)	Dec 2021
<i>Front Range Algebraic Geometry and Number Theory</i> Colorado State University	Sep 2021
<i>SIAM Conference on Applied Algebraic Geometry</i> (online)	Aug 2021
<i>Moduli Across the Pandemic</i> (online)	Apr 2021
<i>Tropical Geometry in Frankfurt (TGiF) Seminar</i> (online)	Apr 2021
AMS Spring Eastern Sectional Meeting on “ <i>Moduli of Curves</i> ” (online)	Mar 2021

<i>Algebra Seminar (online)</i> Brown University	Nov 2020
<i>American Graduate Student Algebraic Geometry Seminar (online)</i>	Oct 2020

SERVICE

Refereeing

Duke Mathematical Journal
International Mathematics Research Notices
Mathematische Zeitschrift
Séminaire Lotharingien de Combinatoire

Reviewing

Mathematical Reviews/MathSciNet.

Organization

IAS School of Mathematics Monthly Women's Lunch, Co-organizer	2023–2024
IAS “What is...?” Seminar, Co-organizer	2023–2024
AMS Student Chapter at Brown University, Chair	2019–2021
Diversity and Inclusiveness Committee at Brown University, Member	2019–2020
Directed Reading Program at Brown University, Organizer	2019–2021
Directed Reading Program at Yale University, Co-organizer with Fernando Al Assal	2017–2018
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

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
Canada/USA Mathcamp, Mentor	Summer 2019
Introduction to Group Theory	
Young tableaux and Representation Theory	
Young tableaux and Combinatorics	
Young tableaux and Probability	
Canada/USA Mathcamp, Mentor	Summer 2018
Algebraic Number Theory	
Geometric Group Theory	
Introduction to 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	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

2018

Alara Değirmenci.

OUTREACH

Princeton Noetherian Rings Seminar

Apr 2024

Brown Math Slam

Apr 2023

Growing up in Sciences Lecture Series, Bowdoin College

Feb 2023

Summer Undergraduate Math Research at Yale (SUMRY) Colloquium

Jul 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

Research Assistant. Mentor: Blerta Shtylla.

Summer Science Program. Socorro, NM.

Summer 2012

Orbit determination of Asteroid 1998QS52

(archived at Harvard-Smithsonian Center for Astrophysics)