

Research interests: Algebraic Geometry, Combinatorics, Tropical Geometry.

## EMPLOYMENT

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<b>Institute for Advanced Study</b> , Member	2023–present
Mentor: June Huh.	

## EDUCATION

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

## PUBLICATIONS

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**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)

### **Multimatroids and rational curves with cyclic action**

with Emily Clader, Chiara Damiolini, Christopher Eur, Daoji Huang.  
arXiv:2311.09314

### **Kapranov degrees**

with Joshua Brakensiek, Christopher Eur, Matt Larson.  
arXiv 2308.12285.

### **$K$ -rings of wonderful varieties and matroids**

with Matt Larson, Sam Payne, Nicholas Proudfoot.  
arXiv 2210.03169.

## FELLOWSHIPS, GRANTS AND AWARDS

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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

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Moduli spaces of curves, moduli spaces of graphs and graph complexes, ETH, Zürich	Sep 2024
BIRS Workshop – Combinatorics and Moduli Spaces of Curves, Banff, Canada	Jul 2024
Suzhou Workshop on Matroid Theory, Suzhou, China	Jul 2024
Oberwolfach Workshop – Arrangements, Matroids and Logarithmic Vector Fields, Oberwolfach, Germany	Jun 2024
$F_1$ World Seminar (online)	Jan 2024
JMM Special Session on “Combinatorial perspectives on algebraic curves and their moduli”	Jan 2024
Preparatory Lectures for Chow Lectures, Max Planck Institute, Leipzig, Germany	Oct 2023
BIRS Workshop – Curves: Algebraic, Tropical, and Logarithmic, Banff, Canada	Aug 2023
The 35th Formal Power Series and Algebraic Combinatorics (FPSAC 2023), UC Davis	Jul 2023
AIM Workshop – GEMS in Combinatorics	Mar 2023
BIRS Workshop – Algebraic Aspects of Matroids, Banff, Canada	Mar 2023
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 Matroid 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
AWM 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 (online)	Apr 2022
Canadian Math Society: Combinatorics and Geometry of Moduli Spaces (online)	Dec 2021
Front Range Algebraic Geometry and Number Theory, Colorado State University	Sep 2021
SIAM Conference on Applied Algebraic Geometry (online)	Aug 2021
Moduli Across the Pandemic, Boston College (online)	Apr 2021
Tropical Geometry in Frankfurt (TGiF) Seminar (online)	Apr 2021
AMS Spring Eastern Sectional Meeting on Moduli of Curves (online)	Mar 2021
Algebra Seminar, Brown University (online)	Nov 2020
American Graduate Student Algebraic Geometry Seminar (online)	Oct 2020

## SERVICE

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### Referee for:

International Mathematics Research Notices.

### Reviewer for:

Mathematical Reviews/MathSciNet.

### Organizational:

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

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<b>Sheridan Teaching Certificate I</b>	Fall 2021
<b>Brown University, Teaching Assistant</b>	
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
<b>Canada/USA Mathcamp, Mentor</b>	Summer 2019
Introduction to Group Theory	
Young tableaux and Representation Theory	
Young tableaux and Combinatorics	
Young tableaux and Probability	
<b>Canada/USA Mathcamp, Mentor</b>	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  
Math 112 Single Variable Calculus

Fall 2018  
Spring 2018

## MENTORING

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#### Princeton University

Cooper Kofron, *Undergraduate Thesis* 2024

#### 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

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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

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#### 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 (Harvard-Smithsonian Center for Astrophysics archived).