

### Education

- 2017- **Ph.D. student in Mathematics**, *Yale University*, New Haven, CT.
- 2013–2017 **Bachelor of Science**, *Harvey Mudd College*, Claremont, CA.  
Graduated with Distinction and Honors in Mathematics, Concentration in Music
- 2010–2013 **High School**, *High School Affiliated to Nanjing Normal Univeristy*, Nanjing, China.  
Specialized in Literature, History and Philosophy

### Relevant Coursework

#### Yale University

- Mathematics Algebraic Number Theory, Functional Analysis, Foundations of Algebraic Geometry, Modern Algebra, Automorphic Forms and Representations

#### Harvey Mudd College

- Mathematics Algebraic Geometry, Thesis on Tropical Geometry, Reading Course on Tropical Geometry, Representation Theory, Galois Theory, Topology, Abstract Algebra, Real Analysis I & II, Advanced Linear Algebra, Differential Equations, Partial Differential Equations, Statistics and Probability, Intermediate Probability, Discrete Mathematics, Multivariable Calculus, Calculus, Math Forum, Math Colloquium
- Computer Science Advanced Topics in Algorithms, Algorithms, Data Structure and Program Development, Principles of Computer Science, Robotics Lab, Introduction to Computer Science, CS Colloquiums
- Physics Quantum Information, Special Relativity, Electromagnetic Theory & Optics, Classical Mechanics, Physics Lab
- Music Conducting, Music Theory I & II & III (Graduate), Computer Music, Music Literature and Analysis Since 1900, Viennese Second School and Early 20th Century, Piano Lessons, Classical Guitar Lessons

## Coursera

Computer Machine Learning (Stanford), Natural Language Processing (Stanford), Pro-  
Science Science Programming Languages (UW)

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## Experience

- Summer 2018 **Mentor**, Canada/USA Mathcamp.
- Taught four week-long classes on algebraic number theory, modular forms, group actions on trees and rational points on elliptic curves for talented high school students
  - Engaged in various activity planning.
- 2016–2017 **Senior Thesis**, Harvey Mudd College.  
Tropical Derivation of Cohomology Ring for Heavey/light Hassett Spaces  
Advisor: Dagan Karp (Harvey Mudd College), Dhruv Ranganathan (MIT)
- 2016 **Google**, Research and Machine Intelligence.  
Advisor: Caroline Pantofaru, Malcolm Slaney (Google Research)
- Research on Machine Learning algorithms with TensorFlow to solve an audio/video syncing problem involving computer vision and human saliency event detection.
  - Implemented data processing pipelines in C++, Python and TensorFlow models that run on large-scale audio/video data.
- 2016 **Graph Theory Research Project**, Pomona College.  
Advisor: Stephan Garcia (Pomona College)  
Research methods to differentiate cospectral and non-isomorphic graphs with matrix analysis.
- 2015–2016 **Matrix Analysis Research Projects**, Pomona College.  
Advisor: Stephan Garcia
- Research on characteristics of similarity and unitary similarity classes of partial isometry matrices.
  - Research on the interlacing and perturbation of singular values and eigenvalues of complex symmetric matrices with min-max principles, Autonne-Tagaki factorization and famous Courant-Fischer formula.
- 2014 **HHMI Summer Research**, Pomona College.  
Advisor: Blerta Shtylla (Pomona College)  
Mathematical Modeling on DNA Segregation. Implemented Gillespie algorithms and Next Sub-volume Method to simulate diffusion and reactions of ParA and ParB proteins.
- 2012 **Summer Science Program**, Socorro, NM.  
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 over six weeks. Paper archived in Harvard-Smithsonian Center for Astrophysics.

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## Teaching and Tutoring

- 2018 Teaching Assistant for Math 220 – Yale University
- Summer 2018 Mentor at Canada/USA Mathcamp
- 2018 Math 112 Calculus Teaching Assistant – Yale University
- 2017 Math 147 Topology Grader/Tutor – Harvey Mudd College
- 2016 Math 132 Analysis II Grader – Harvey Mudd College
- 2015 Math 171 Abstract Algebra Tutor – Harvey Mudd College
- 2015 Physics 51 Electricity Theory and Optics Grader – Harvey Mudd College
- 2014 Physics 23 Special Relativity, Physics 24 Mechanics Grader – Harvey Mudd College
- 2014 Math 30 Calculus, Math 35 Statistics and Probability Grader – Harvey Mudd College

## Leadership

- 2016 - 2017 **Event Planning Officer**, *Harvey Mudd College Math Club*.  
Assist the president in event planning for math community at Mudd.
- 2015 - 2016 **President**, *Harvey Mudd College Math Club*.  
Organize and assist talks, math teas, field trips to industry and events for math community at Mudd.
- 2015 - 2016 **Co-organizer**, *Caltech Harvey Mudd Math Competition*.  
Organize problem writing, grading together with the Caltech representatives.
- 2015 **Concert Manager**, *IES Vienna Music History and Performance Program*.  
Organize and manage concerts for instrumentalists and singers, design program notes.
- 2014 **Head Grader**, *Math 30/35 Calculus/Stats and Probability*.  
Organize grading and write up feedback documents for students and instructors.
- 2013 **Team Lead**, *Chinese National Olympiad for Linguistics*.  
Organize team, studying materials, practice sessions, logistics for the competition.
- 2010-2013 **Academic Counselor**, *Model United Nations in High School*.  
Organize training sessions, study materials, and conferences.
- 2010-2013 **Class President**, *High School Affiliated to Nanjing Normal University*.  
Organize committees, events and work with administration.

## Study Abroad

- 2015 **Vienna**, *IES Vienna Music History and Performance Program*.  
Studied music history on Viennese Second School and music in early 20th century, played the piano in the instrumentalist ensemble, took German and piano lessons from local teachers.

- 2015 **Paris**, *CIEE French Language and Culture Program*.  
Studied intermediate French and did daily projects/reports on french culture in Paris.

## Awards and Honors

- 2017-2018 Yale University Kenneth and Mary Wang Graduate Fellowship  
 2017 Yale University Lang Fellowship  
 2016 SIAM Outstanding Student Chapter Leadership – for serving the Harvey Mudd Math Club as a student chapter of Society for Industrial and Applied Mathematics  
 2013-2017 Harvey Mudd Merit Student Scholarship  
 2013-2017 Harvey Mudd International Student Scholarship – given to one international student per class for academic excellence  
 2013-2017 Dean's List (all semesters)  
 2013 Chinese National Linguistics Olympiad, Personal 3rd Place  
 2013 Chinese National Linguistics Olympiad, Team 2nd Place

## Computer Skills

Proficient	<b>C++, Python, L<sup>A</sup>T<sub>E</sub>X, TensorFlow, XML</b>	LoC: 5000+
Intermediate	<b>Java, Mathematica, Matlab, HTML, Linux</b>	LoC:1000+

## Languages

<b>Chinese Mandarin</b>	<i>Mother tongue</i>
<b>English</b>	<i>Proficient</i>
<b>French</b>	<i>Conversational</i>
<b>German, Spanish, Japanese, Chinese Cantonese</b>	<i>Beginning</i>

## Hobbies

<b>Piano</b>	<i>Instructors: Gayle Blankenburg (LA), Carol Morgan (Vienna), Fantee Jones (Yale)</i>
<b>Classical Guitar</b>	<i>Pomona College Guitar Quartet; Instructor: Lei Zhang (China), Jack Sanders (LA)</i>
<b>Go</b>	<i>Achieved 3 dan amateur at age of 9</i>
<b>Puzzles</b>	<i>Google Games 2016 Los Angeles, 7th Place Facebook Puzzlehunt 2017 at Harvey Mudd, 3rd Place Microsoft, Puzzle Challenge 2017, Los Angeles 2nd Place, 25th country-wise</i>
<b>Calligraphy</b>	<i>Proficient in Chinese calligraphy in Li, Cao, Xing, Kai fonts</i>

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## Ballroom Dance

*International Standard, Latin*