

# Curriculum Vitae

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Yifeng Huang

## Education

- 2015-present **Ph.D. Candidate in Mathematics**, *University of Michigan–Ann Arbor (U of M)*,  
Advisor: Michael E. Zieve
- 2011-2015 **B.Sc. in Mathematics, First Honor**, *Hong Kong University of Science and Technology (HKUST)*

## Research Interest

My research interest is algebraic geometry, combinatorics and number theory. I am working on the mixed Hodge structure of configuration spaces, as well as probabilistic or enumerative problems for matrices over  $p$ -adic rings or finite fields. I am also interested in Diophantine problems in noncommutative settings and arithmetic dynamics.

## Publications

- Nov 2020 “Unit Equations on Quaternions”, *the Quaterly Journal of Mathematics*, 71(4):1521–1534, 2020. Available at arXiv: 1910.13250
- Jun 2021 “Cohen–Lenstra distributions via random matrices over complete discrete valuation rings with finite residue fields”, with Gilyoung Cheong, *Illinois Journal of Mathematics*, 65(2):385–415, 2021. Available at arXiv: 1812.11728

## Preprints

- 2021 “Counting on the variety of modules over the quantum plane”, submitted. Available at arXiv: 2110.15570
- 2021 “Mutually annihilating matrices, and a Cohen–Lenstra series for the nodal singularity”, submitted. Available at arXiv: 2110.15566
- 2021 “Continuously Increasing Subsequences of Random Multiset Permutations”, with Alexander Clifton, Bishal Deb, Sam Spiro and Semin Yoo, submitted. Available at arXiv: 2110.10315
- 2020 “Cohomology of configuration spaces on punctured varieties”. Available at arXiv: 2011.07153
- 2020 “Rationality for the Betti numbers of the unordered configuration spaces of points on the punctured torus”, with Gilyoung Cheong, submitted. Available at arXiv: 2009.07976

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## Research Talks

- Sep. 27, 2021 *U of M*, RTG Seminar on Number Theory
- May. 12, 2021 Graduate Online Combinatorics Colloquium (GOCC)
- Apr. 25, 2021 Graduate Student Combinatorics Conference (GSCC 2021)
- Mar. 23, 2021 *ICERM*, Combinatorial Algebraic Geometry
- Nov. 25, 2020 *University of Waterloo*, Algebra Seminar
- Nov. 24, 2020 *University of British Columbia*, Discrete Mathematics Seminar
- Nov. 06, 2020 *University of British Columbia*, Algebra and Algebraic Geometry Seminar
- Sep. 23, 2020 *Rutgers University*, Algebra Seminar
- Sep. 18, 2020 *University of Minnesota*, Combinatorics and Commutative Algebra Seminar
- Jul. 29, 2020 *U of M*, RTG Seminar on Number Theory

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## Learning Seminar Talks

- Sep. 29, 2020 *U of M*, Student Combinatorics Seminar
- May. 20, 2020 *U of M*, Shimura Learning Seminar, "Moduli spaces of mixed Hodge structures as Hermitian symmetric domains"
- Sep. 20, 2017 *U of M*, Student Arithmetic, "Quadratic forms and orders of imaginary quadratic fields"
- Mar. 23, 2017 *U of M*, Student Arithmetic, "Elliptic curves with complex multiplication"

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## Teaching

- Winter 2020 *U of M*, Instructor for EECS 203 (Discrete Mathematics)
- Winter 2017-  
Fall 2019 *U of M*, Graduate Student Instructor for MATH 116 (Calculus II)
- Fall 2018 *U of M*, Grader for MATH 676 (Algebraic Number Theory) taught by M. Zieve
- Winter 2016-  
Fall 2016 *U of M*, Graduate Student Instructor for MATH 115 (Calculus I)
- Fall 2015 *U of M*, Graduate Student Instructor for MATH 105 (Precalculus)

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## Honors and Awards

- 2019 Indu and Gopal Prasad Family Fund, awarded based on a summer research proposal
- 2015 Champion in 3rd HKUST Undergraduate Math Competition, senior level

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## Skills

- Languages Chinese Mandarin and Cantonese (native), English (advanced), Spanish (intermediate), German (basic), French (math reading)
- Computer C++, Magma, Julia