

# Curriculum Vitae

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Yifeng Huang

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## Positions

2022-2024 **Postdoctoral Fellow**, *University of British Columbia (UBC)*, Mentors: Jim Bryan, Kalle Karu, Zinovy Reichstein

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## Education

2015-2022 **Ph.D. in Mathematics**, *University of Michigan, Ann Arbor (U of M)*, Advisor: Michael E. Zieve

**Thesis:** Topics on Polynomial Equations in Noncommutative Rings and Motivic Aspects of Moduli Spaces

2011-2015 **B.Sc. in Mathematics, First Honor**, *Hong Kong University of Science and Technology (HKUST)*

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## Research Interest

My research interest is at the interface of algebraic geometry, combinatorics and number theory. My main work involves matrix enumeration problems arising from the moduli space of modules, the cohomology of configuration spaces, and Diophantine equations on noncommutative rings.

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## Publications

- 4 “Counting on the variety of modules over the quantum plane”, *Algebraic Combinatorics*, to appear. arXiv: 2110.15570
- 3 “Rationality for the Betti numbers of the unordered configuration spaces of points on the punctured torus”, with Gilyoung Cheong, *Transactions of the American Mathematical Society*, 375(9): 6363–6383, 2022. arXiv: 2009.07976
- 2 “Unit Equations on Quaternions”, *the Quarterly Journal of Mathematics*, 71(4):1521–1534, 2020. arXiv: 1910.13250
- 1 “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. arXiv: 1812.11728

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## Preprints

- 3 “Mutually annihilating matrices, and a Cohen–Lenstra series for the nodal singularity”, submitted. arXiv: 2110.15566

- 2 "Continuously Increasing Subsequences of Random Multiset Permutations", with Alexander Clifton, Bishal Deb, Sam Spiro and Semin Yoo, submitted. arXiv: 2110.10315
- 1 "Cohomology of configuration spaces on punctured varieties". arXiv: 2011.07153

## Selected Honors and Awards

- 2022 AMS-Simons Travel Grant
- 2019 Indu and Gopal Prasad Family Fund, awarded based on a summer research proposal

## Organizations

- 2022 UBC, Algebraic Geometry Seminar

## Invited Talks

- 2022 *University of Massachusetts, Amherst*, AMS Eastern Sectional, Special Session "Young Voices in Combinatorics"
- 2022 *University of California, Irvine*, Number Theory Seminar
- 2022 *University of Southern California*, Combinatorics Seminar
- 2022 *Rutgers University*, Graduate Algebra and Representation Theory Seminar
- 2021 *St Johns University, New York City*, NYC Noncommutative Geometry Seminar
- 2021 *U of M*, RTG Seminar on Number Theory
- 2021 Graduate Online Combinatorics Colloquium (GOCC)
- 2021 Graduate Student Combinatorics Conference (GSCC 2021)
- 2021 *ICERM*, Combinatorial Algebraic Geometry
- 2020 *University of Waterloo*, Algebra Seminar
- 2020 UBC, Discrete Mathematics Seminar
- 2020 UBC, Algebra and Algebraic Geometry Seminar
- 2020 *Rutgers University*, Algebra Seminar
- 2020 *University of Minnesota*, Combinatorics and Commutative Algebra Seminar
- 2020 *U of M*, RTG Seminar on Number Theory

## Teaching

- 2022 *University of British Columbia*, MATH 100 (Differential Calculus), Instructor of four interactive classes of size 60
- 2020 *U of M*, EECS 203 (Discrete Mathematics for computer science students), Lecturer of a class of size 200
- 2017-2019 *U of M*, MATH 116 (Calculus II), Instructor of an interactive class of size 20
- 2018 *U of M*, MATH 676 (Algebraic Number Theory) taught by M. Zieve, Grader
- 2016,2021 *U of M*, MATH 115 (Calculus I), Instructor of an interactive class of size 20
- 2015 *U of M*, MATH 105 (Precalculus), Instructor of an interactive class of size 20