

Curriculum Vitae

Yifeng Huang

Positions

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

Education

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

Thesis: Topics on Polynomial Equations in Noncommutative Rings and Motivic Aspects of Moduli Spaces, Apr 2022

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

Research Interest

I work on algebraic geometry, combinatorics and number theory. I am currently interested in combinatorial aspects of moduli spaces, especially the Hilbert scheme of points and their variants.

Publications

- [9] Alexander Clifton, Bishal Deb, Yifeng Huang, Sam Spiro, and Semin Yoo. "Continuously Increasing Subsequences of Random Multiset Permutations". In: *European J. Combin.* (2023). to appear.
- [8] Yifeng Huang. "Mutually annihilating matrices, and a Cohen–Lenstra series for the nodal singularity". In: *J. Algebra* 619 (2023), pp. 26–50.
- [6] Gilyoung Cheong and Yifeng Huang. "Betti and Hodge numbers of configuration spaces of a punctured elliptic curve from its zeta functions". In: *Trans. Amer. Math. Soc.* 375.9 (2022), pp. 6363–6383.
- [5] Yifeng Huang. "Counting on the variety of modules over the quantum plane". In: *Algebr. Comb.* 5.3 (2022), pp. 583–592.
- [3] Gilyoung Cheong and Yifeng Huang. "Cohen–Lenstra distributions via random matrices over complete discrete valuation rings with finite residue fields". In: *Illinois Journal of Mathematics* 65.2 (2021), pp. 385–415.
- [1] Yifeng Huang. "Unit equations on quaternions". In: *Q. J. Math.* 71.4 (2020), pp. 1521–1534.

Preprints

- [7] Yifeng Huang, Ken Ono, and Hasan Saad. "Counting matrix points on certain varieties over finite fields". Submitted. Available at arXiv:2302.04830. 2023.
- [4] Yifeng Huang and Ruofan Jiang. "Spiral shifting operators from the enumeration of finite-index submodules of $\mathbb{F}_q[[T]]^d$ ". Submitted. Available at arXiv:2210.10215. 2022.
- [2] Yifeng Huang. "Cohomology of configuration spaces on punctured varieties". Available at arXiv: 2011.07153. 2020.

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

- 2023 *Simon Fraser University*, Number Theory and Algebraic Geometry Seminar
- 2022,2023 *Virginia Tech*, Algebra Seminar
- 2020,2023 *UBC*, Discrete Mathematics Seminar
- 2020,2023 *UBC*, Algebra and Algebraic Geometry Seminar
- 2023 Joint Mathematics Meeting, Special Session "Quaternions"
- 2023 Joint Mathematics Meeting, Special Session "Combinatorics and Geometry of Jordan Type and Lefschetz Properties"
- 2022 *UBC*, Number Theory Seminar
- 2022 *University of Virginia*, Algebra Seminar
- 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 *Rutgers University*, Algebra Seminar
- 2020 *University of Minnesota*, Combinatorics and Commutative Algebra Seminar
- 2020 *U of M*, RTG Seminar on Number Theory

Outreach

2023 *Virginia Tech*, Blacksburg Math Circle, 1-hour lecture on Pólya enumeration theorem to grades 4–8 students

Teaching

2023 *University of British Columbia*, MATH 101 (Integral Calculus)

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