Curriculum Vitae

Yifeng Huang

Positions

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

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*)

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.

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 Quaterly 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

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

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 *University of British Columbia*, Discrete Mathematics Seminar

2020 *University of British Columbia*, 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

Selected Honors and Awards

2022 AMS-Simons Travel Grant

2019 Indu and Gopal Prasad Family Fund, awarded based on a summer research proposal