

# Curriculum Vitae

Yifeng Huang, 2/14/2026

## Positions

- 2024–present **Assistant Professor (RTPC)**, *University of Southern California (USC)*  
2022–2024 **Postdoctoral Research Fellow**, *University of British Columbia (UBC)*

## Education

- Apr 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
- 2015 **B.Sc. in Mathematics, with First Class Honors**, *Hong Kong University of Science and Technology (HKUST)*

## Research Interest

I am interested in algebraic geometry and number theory, especially the combinatorial aspects. My main expertise lies in zero-dimensional enumerative geometry,  $q$ -series, discrete random matrix theory, and Diophantine equations on noncommutative algebras.

## Publications

- [13] Yifeng Huang, Borys Kadets, and Olivier Martin. “Low degree subvarieties of universal hypersurfaces”. In: *J. Reine Angew. Math.* (2026). Accepted. <https://arxiv.org/abs/2506.08848>.
- [12] Jason Bell, Dragos Ghioca, and Yifeng Huang. “A Mordell-Lang-type problem for  $\mathrm{GL}_m$ ”. In: *Bull. Aust. Math. Soc.* 111.3 (2025), pp. 433–444.
- [11] Dragos Ghioca and Yifeng Huang. “A non-abelian variant of the classical Mordell-Lang conjecture”. In: *Manuscripta Math.* 176.5 (2025), Paper No. 71.
- [10] Yifeng Huang and Ruofan Jiang. “Lattices in  $\mathbb{F}_q[[T]]^d$  and spiral shifting operators”. In: *Adv. in Appl. Math.* 171 (2025), Paper No. 102950, 29.
- [9] Yifeng Huang. “Cokernels of random matrix products and flag Cohen-Lenstra heuristic”. In: *Forum Math.* 37.5 (2025), pp. 1325–1332.
- [8] Gilyoung Cheong and Yifeng Huang. “The cokernel of a polynomial push-forward of a random integral matrix with concentrated residue”. In: *Math. Proc. Cambridge Philos. Soc.* 178.2 (2025), pp. 229–257.
- [7] Yifeng Huang, Ken Ono, and Hasan Saad. “Counting matrix points on certain varieties over finite fields”. In: *Contemp. Math.* 818 (2025), pp. 181–195.

- [6] Alexander Clifton, Bishal Deb, Yifeng Huang, Sam Spiro, and Semin Yoo. "Continuously increasing subsequences of random multiset permutations". In: *European J. Combin.* 110 (2023), p. 103708.
- [5] Yifeng Huang. "Mutually annihilating matrices, and a Cohen–Lenstra series for the nodal singularity". In: *J. Algebra* 619 (2023), pp. 26–50.
- [4] 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. "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.
- [2] 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

- [10] Shane Chern and Yifeng Huang. "Multiple Rogers–Ramanujan type identities for inert quadratic orders". Preprint. <https://arxiv.org/abs/2511.09452>.
- [9] Asvin G, Yifeng Huang, Ruofan Jiang, and Yifan Wei. "Matrix points on varieties". Preprint. <https://arxiv.org/abs/2510.13380>. 2025.
- [8] Yifeng Huang, Hoi H. Nguyen, and Roger Van Peski. "Cohen–Lenstra flag universality for random matrix products". Preprint. <https://arxiv.org/abs/2508.10127>. 2025.
- [7] Yifeng Huang. "Coh zeta functions for inert quadratic orders". Preprint. <https://arxiv.org/abs/2507.21966>. 2025.
- [6] Yifeng Huang and Eric Ramos. "Hilbert series for configuration spaces of punctured surfaces". Preprint. <https://www.arxiv.org/abs/2507.09746>. 2025.
- [5] Yifeng Huang. "Commuting matrices via commuting endomorphisms". Preprint. <https://arxiv.org/abs/2404.19483>. 2024.
- [4] Yifeng Huang and Ruofan Jiang. "Motivic Coh and Quot zeta functions of singular curves". Preprint. <https://arxiv.org/abs/2312.12528>.
- [3] Yifeng Huang and Ruofan Jiang. "Punctual Quot schemes and Cohen–Lenstra series of the cusp singularity". Preprint. <https://arxiv.org/abs/2305.06411>. 2023.
- [2] Tianyu Wang, Yifeng Huang, and Didong Li. "From the Greene–Wu Convolution to Gradient Estimation over Riemannian Manifolds". Preprint. <https://arxiv.org/abs/2108.07406>. 2021.
- [1] Yifeng Huang. "Cohomology of configuration spaces on punctured varieties". Preprint. <https://arxiv.org/abs/2011.07153>. 2020.

## Grants Submitted and Awarded

2022,2023 (Submitted) NSF Mathematical Science Postdoctoral Research Fellowship

- 2022 (Awarded) AMS-Simons Travel Grant  
2019 (Awarded) Math Department Summer Research Grant, funded by Indu and Gopal Prasad Family Fund

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## Mentoring

- 2024–present *USC*, Directed Reading and Research  
2024–2025 *Harvey Mudd College*, Advisor of undergraduate thesis  
2023 *University of Virginia*, Research mentor of REU in Number Theory led by Ken Ono

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## Invited Talks

- 2026 *Ohio State*, Mini-course on Cohen-Lenstra-type heuristics for random matrices (1-hour lecture)  
2026 *Boston College*, AMS Spring Eastern Sectional, Special Session “Configuration Spaces and Applications” (45-minite talk)  
2025 AMS Fall Virtual Eastern Sectional, Special Session “Representations of p-adic Groups and Noncommutative Geometry” (50-minite talk)  
2025 *UC Irvine*, Number Theory Seminar  
2025 *Montréal*, Third Joint SIAM/CAIMS Annual Meetings (AN25), “Hypergeometric Series and Their Applications” (25-minite talk)  
2025 *HKUST*, Algebra and Geometry Seminar  
2025 *UCSD*, Algebra Seminar  
2025 *Seattle*, AMS Joint Mathematics Meeting, Special Session “Quaternions” (20-minite talk)  
2024 *UMass Amherst*, Valley Geometry Seminar  
2024 *Claremont McKenna*, ANTC Seminar  
2023 *UCSD*, Combinatorics Seminar  
2023 Southern California Number Theory Day  
2023 *UCSD*, Algebraic Geometry Seminar  
2023 *Simon Fraser University*, Number Theory and Algebraic Geometry Seminar  
2023 *Boston*, Joint Mathematics Meeting, Special Session “Quaternions”  
2023 *Boston*, Joint Mathematics Meeting, Special Session “Combinatorics and Geometry of Jordan Type and Lefschetz Properties”  
2022,2023 *Virginia Tech*, Algebra 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  
2020 *UBC*, Discrete Mathematics Seminar  
2020 *UBC*, Algebraic Geometry Seminar  
2020 *University of Waterloo*, Algebra Seminar  
2020 *Rutgers University*, Algebra Seminar  
2020 *University of Minnesota*, Combinatorics and Commutative Algebra Seminar

## Talks in local seminars

- 2025 *USC*, Combinatorics Seminar  
2025 *USC*, Topology Seminar  
2025 *Caltech*, USC/Caltech Joint Algebra and Geometry Seminar  
2025 *USC*, Algebra Seminar  
2025 *Caltech*, Number Theory Seminar  
2024 *USC*, Combinatorics Seminar  
2023 *UBC*, Algebraic Geometry Seminar  
2023 *UBC*, Number Theory Seminar  
2023 *UBC*, Discrete Mathematics Seminar  
2023 *UBC*, Algebraic Geometry Seminar  
2022 *UBC*, Number Theory Seminar  
2021 *U of M*, RTG Seminar on Number Theory  
2020 *U of M*, RTG Seminar on Number Theory

## Teaching

- 2025 *USC*, MATH 430 (Theory of Numbers), Lecturer of a class of 30  
2025 *USC*, MATH 118 (Calculus for Business and Economics), Lecturer of a class of 60  
2024, 2025 *USC*, MATH 432 (Applied Combinatorics), Lecturer of a class of 30  
2024 *USC*, MATH 225 (Linear Algebra and Differential Equations), Lecturer of a class of 50  
2023 *UBC*, MATH 221 (Matrix Algebra), Lecturer of a class of 90  
2023 *UBC*, MATH 101 (Integral Calculus), Instructor of 3 interactive classes of 60  
2022 *UBC*, MATH 100 (Differential Calculus), Instructor of 4 interactive classes of 60  
2020 *U of M*, EECS 203 (Discrete Mathematics for computer science students), Lecturer of a class of 200  
2017–2019 *U of M*, MATH 116 (Calculus II), Instructor of an interactive class of 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 20  
2015 *U of M*, MATH 105 (Precalculus), Instructor of an interactive class of 20

## Reviewing

Reviewer MathSciNet

Referee *American Journal of Mathematics, Annals of Probability, Electronic Communications in Probability, Forum Mathematicum, Advances in Mathematics, Linear Algebra and Applications, Linear and Multilinear Algebra, Journal of Algebra, Journal of Symbolic Computation, and “Combinatorics, Probability, and Computing”*

## Organizations

- 2024–present *USC and Caltech*, Organizer of USC/Caltech Joint Algebra and Geometry Seminar  
2022–2024 *UBC*, Organizer of Algebraic Geometry Seminar

## Outreach

- 2024–2025 *UCLA*, Olga Radko Endowed Math Circle (ORMC), Advanced III lead instructor  
2023 *Virginia Tech*, Blacksburg Math Circle, 1-hour lecture on Pólya enumeration theorem to grades 4–8 students

## Skills

- Languages English (fluent), Chinese Mandarin (native), Cantonese (native), Spanish (reading), French (reading)  
Coding C++, Python, Mathematica, Sage