Eric Shen

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Canadian Citizen

Education

- **Princeton University** *2026 - present*
  Ph.D., Mathematics. Princeton, NJ, US
- **University of Cambridge** *2025 - 2026*
  M.A.St. in Mathematics, with distinction. Cambridge, UK
- **Harvard College** *2021 - 2025*
  B.A. in Mathematics & Physics, summa cum laude. Cambridge, MA, US
  - GPA: 3.99/4.00

Publications

[1] Tighter bounds on the expected absorbing time of Ungarian Markov chains, *Combinatorics, Probability, and Computing* 1-41 (2026). https://doi.org/10.1017/S096354832610056X

[2] Effective Sato–Tate distributions for surfaces arising from products of elliptic curves (with Q. Chen), *Res Math Sci* 11, 69 (2024). https://doi.org/10.1007/s40687-024-00470-x

Research

- **Harvard College Research Program** *Summer 2024*
  - Worked on a low-dimensional topology project involving understanding two families of 4-dimensional manifolds with $b_2 = b_2^+ = 1$ and lens space boundary.
  - Mentored by William Ballinger.
- **UMN Duluth Combinatorics REU** *Summer 2023*
  - Resolved multiple conjectures regarding the expected running time of certain Markov chains on combinatorial lattices.
  - Program directed by Joe Gallian and Colin Defant.
- **UVa Number Theory REU** *Summer 2022*
  - Worked on a project involving extending an Effective Sato-Tate conjecture to new varieties.
  - Collaborated with Quanlin Chen, mentored by Ken Ono and Jesse Thorner.

Teaching and Service

- **Canada Math Society Service** *2022 - present*
  - 2025 - 2026: Canada IMO Team Leader.
  - 2024 - 2025: Canada IMO Team Deputy Leader.
  - 2023 - 2024: Canada IMO Team Observer B.
  - 2022 - present: Canada Math Olympiad Committee Member.
- **Math Course Assistant at Harvard University** *2023 - 2025*
  - Spring 2025: Math 132 (differential topology), taught by William Ballinger.
  - Fall 2024: Math 122 (groups and linear algebra), taught by Joe Harris.
  - Spring 2024: Math 129 (algebraic number theory), taught by Barry Mazur.
  - Fall 2023: Math 131 (point-set topology), taught by Denis Auroux.
  - Spring 2023: Math 123 (ring theory and field theory), taught by Curtis McMullen.
- **Harvard University Math Association Board Member** *2023 - 2025*
  - Helped organize monthly events for the undergraduate math community, e.g. a social with visiting math students from Tsinghua University.

Selected Honors

- Herchel Smith Harvard Scholarship *2025*
- Rank 11, William Lowell Putnam Mathematical Competition *2024*
- Gold Medal, International Math Olympiad (IMO) *2020, 2021*