Bowen Yang

Affiliation: Harvard University — Cambridge, MA, US
Phone: +1 413 801 4992 — Email: bowen_yang@g.harvard.edu

Employment

Postdoctoral Fellow, Harvard University — 2024–present

Education

Ph.D. in Mathematics (Advisor: Anton Kapustin), Caltech — 2018–2023
B.A. in Mathematics, *summa cum laude*, Amherst College — 2014–2018
Visiting Student, New College, University of Oxford — 2016–2017

Publications & Preprints

1. *Witt Groups and Bulk-Boundary Correspondence for Stabilizer States* (with Blazej Ruba), preprint (2025). arXiv:2509.10418
2. *Clifford quantum cellular automata from topological quantum field theories and invertible subalgebras* (with Meng Sun, Zongyuan Wang, Nathanan Tantivasadakarn, Yu-An Chen), preprint (2025). arXiv:2509.07099
3. *Categorifying Clifford QCA*, preprint (2025). arXiv:2504.14811
4. *A mathematical theory of topological invariants of quantum spin systems* (with Adam Artymowicz, Anton Kapustin), preprint (2024). arXiv:2410.19287
5. *Operator algebra and algorithmic construction of boundaries and defects in (2+1)D topological Pauli stabilizer codes* (with Zijian Liang, Joseph T. Iosue, Yu-An Chen), preprint (2024). arXiv:2410.11942
6. *Homological invariants of Pauli stabilizer codes* (with Blazej Ruba), **Communications in Mathematical Physics** (2024). arXiv:2204.06023
7. *Spatial decay of Kubo's canonical correlation functions*, **Letters in Mathematical Physics** (2021). arXiv:1912.10831
8. *A classification of invertible phases of bosonic quantum lattice systems in one dimension* (with Anton Kapustin, Nikita Sopenko), **Journal of Mathematical Physics** (2021). arXiv:2012.15491
9. *Toy Teichmüller spaces of real dimension 2: the pentagon and the punctured triangle* (with Yudong Chen, Roman Chernov, Marco Flores, Maxime Fortier Bourque, Seewoo Lee), **Geometriae Dedicata** (2018). arXiv:1704.04331
10. *"Strange" combinatorial quantum modular forms* (with Amanda Folsom, Caleb Ki, Yen Nhi Truong Vu), **Journal of Number Theory** (2017).

Teaching Experience

Instructor, California Institute of Technology Fall 2021
Math 8 — Calculus for Problem Solving

Course Assistant, California Institute of Technology 2018–2022
Math 2/102 — Differential Equations Fall 2018
Math 3/103 — Introduction to Probability and Statistics Winter 2019
Math 5/105c — Introduction to Abstract Algebra Spring 2019
Math 5/105a — Introduction to Abstract Algebra Fall 2019
Math 5/105b — Introduction to Abstract Algebra Winter 2020
Math 110c — Harmonic Analysis Spring 2020
Math 121a — Combinatorial Analysis Winter 2021
Math 121b — Combinatorial Analysis Spring 2021
Math 1c — Calculus Spring 2022
Math 120a — Commutative Algebra Fall 2022

Teaching Fellow, Amherst College 2017–2018
Math 355 — Introduction to Analysis Fall 2017
Math 350 — Groups, Rings, and Fields Spring 2018

Course Assistant, Amherst College 2015–2017
CS 101 — Python Spring 2015
CS 121 — Java Fall 2015
Math 350 — Groups, Rings, and Fields Fall 2015
Math 450 — Measure Theory and Integration Spring 2016
Math 405 — Lie Algebras Fall 2017

Counselor, Ross Mathematics Program Summers 2017, 2019
Supervised talented high school campers and evaluated work on challenging mathematics problems.

Selected Honors and Awards

Scott Russell Johnson Graduate Dissertation Prize for the best graduate dissertation 2023
Rufus B. Kellogg University Fellowship ($30,000 per annum) 2018–2021
Amherst International Student Scholarship 2014–2018