Curriculum Vitae

Weston Miller
w3miller@ucsd.edu

Education

The University of California, San Diego | June 2029

- PhD, Mathematics

The University of Texas at Dallas | May 2024

- B.S., Mathematics; GPA: 3.99
- Summa Cum Laude
- Major Honors
- Physics minor
- Collegium V Honors Program
- Putnam Club 2022-2024

Research Experience

Honors Thesis | January 2023 - May 2024

Topic: Rational Catalan Numbers for Complex Reflection Groups

- Computed the traces of powers of Coxeter elements in the Hecke algebras of spetsial complex reflection groups using the q-analogues of rational Coxeter-Catalan numbers.
- Advised by Nathan Williams

UT Dallas Math Pathways REU | Summer 2022 | Supported by the Alfred P. Sloan Foundation

Topic: Catalan States of Lattice Crossings

- Computed the coefficients for several infinite families of Catalan states in the relative Kauffman bracket Skein module expansion of lattice crossings.
- Advised by Mieczyslaw Dabkowski

Publications

Banaian, Esther, et al. "An elaborate new proof of Cayley's formula." *arXiv preprint arXiv:2402.07798* (2024). https://arxiv.org/abs/2402.07798

Miller, Weston. "Rational Catalan Numbers for Complex Reflection Groups." *arXiv preprint arXiv:2310.12354* (2023). https://arxiv.org/abs/2310.12354

Presentations

July 2024. *Rational Catalan Numbers for Complex Reflection Groups,* FPSAC 2024.

March 2024. *Rational Catalan Numbers for Complex Reflection Groups,* CombinaTexas.

March 2024. *Rational Catalan Numbers for Complex Reflection Groups,* Harvard-MIT Combinatorics Seminar.

February 2024. *Rational Catalan Numbers for Complex Reflection Groups,* Eleventh Discrete Geometry and Algebraic Combinatorics Conference.

January 2024. *Rational Catalan Numbers for Complex Reflection Groups,* JMM PME Contributed Session.

November 2023. *Rational Catalan Numbers for Complex Reflection Groups,* Algebraic Combinatorics and Parking Functions, SIAM TX-LA Sectional Meeting.

September 2023. *Rational Catalan Numbers for Complex Reflection Groups*, UTD Algebra and Combinatorics Seminar.