

Curriculum Vitae

Weston Miller

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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." *Algebraic Combinatorics*, vol. 8, no. 4, 1 Sept. 2025, pp. 971–995, <https://doi.org/10.5802/alco.429>.

Miller, Weston. "Rational catalan numbers for complex reflection groups." *Journal of Algebra*, vol. 672, June 2025, pp. 10–30, <https://doi.org/10.1016/j.jalgebra.2025.01.027>.

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](#).