

Tianyi Yu

CONTACT INFORMATION	Department of Mathematics University of California, San Diego La Jolla, CA 92093	<i>E-mail:</i> tiy059@ucsd.edu <i>Website:</i> https://mathweb.ucsd.edu/~tiy059/
EDUCATION	University of California, San Diego , La Jolla, CA, USA PhD Mathematics Advisor: Brendon Rhoades	2020 - present
	University of California, San Diego , La Jolla, CA, USA Bachelor of Science in Mathematics & Bachelor of Science in Computer Science	2016 - 2020
RESEARCH INTERESTS	Algebraic combinatorics: Schubert calculus, Lascoux polynomials, Grothendieck polynomials, bumpless pipe dreams, crystal operators, coinvariant algebra.	
UNDER PREPARATION	[1] <i>Analogue of Fomin-Stanley algebra on bumpless pipedreams.</i>	
	[2] <i>Vexillary double Edelman-Greene coefficients are Graham positive</i> , with Gregory, A. and Hamaker, Z.	
PREPRINTS	[3] <i>Grothendieck polynomials of inverse fireworks permutations</i> , with Chou, C. Preprint arXiv:2403.12186	
	[4] <i>Lascoux expansion of Lascoux times stable Grothendieck</i> , with Orelowitz, G. Preprint arXiv:2312.01647	
	[5] <i>Constructing maximal pipedreams of double Grothendieck polynomials</i> , with Chou, C. Preprint arXiv:2312.01250	
	[6] <i>Constructing a Gröbner basis of Griffin's ideal</i> , Submitted (2023). Preprint arXiv:2307.16046	
	[7] <i>Connection between Schubert polynomials and top Lascoux polynomials</i> , Submitted (2023). Preprint arXiv:2306.04159	
	[8] <i>A row analogue of Hecke column insertion</i> , with Huang, D. & Shimozono, M. Submitted (2022). Preprint arXiv:2211.02993	
PUBLICATIONS	[9] <i>A Bijection between K-Kohnert Diagrams and Reverse Set-Valued Tableaux</i> , with Pan, J. To appear in <i>The Electronic Journal of Combinatorics</i> (2023)	
	[10] <i>Top-degree components of Grothendieck and Lascoux polynomials</i> , with Pan, J. To appear in <i>Algebraic Combinatorics</i> (2023).	
	[11] <i>Set-valued tableaux rule for Lascoux polynomials</i> , <i>Combinatorial Theory</i> (2023).	
	[12] <i>Grothendieck to Lascoux expansions</i> , with Shimozono, M. <i>Transactions of the American Mathematical Society</i> (2023).	
	[13] <i>Harmonic bases for generalized coinvariant algebras</i> , with Rhoades, B. & Zhao, Z <i>The Electronic Journal of Combinatorics</i> (2020).	

- CONFERENCE PROCEEDINGS [14] *Grothendieck to Lascoux expansions*, with Shimozono, M. Proceedings of the 34th Conference on Formal Power Series and Algebraic Combinatorics, extended abstract of [12].
- [15] *Harmonic bases for generalized coinvariant algebras*, with Rhoades, B. & Zhao, Z Proceedings of the 33rd Conference on Formal Power Series and Algebraic Combinatorics, extended abstract of [13].
- AWARDS AND GRANTS **University of California, San Diego**
- Selma and Robert Silagi Award for Undergraduate Excellence (5000 USD)
- TALKS **Pipedreams, bumpless pipedreams and Bruhat chains**
- Schubert Seminar. Online. Nov. 2023
- Analogue of Fomin-Stanley algebra on bumpless pipedreams**
- Combinatorics And Representation Theory Seminar. Seoul, Korea (via zoom). (invited) Apr. 2024
 - Graduate Student Combinatorics Conference. Pittsburgh, PA. Mar. 2024
 - The CAGE (Combinatorics, Algebra, and Geometry) Seminar. Philadelphia, PA. Mar. 2024
 - Combinatorics Seminar. University of Southern California. Los Angeles, CA. (invited) Jan. 2024
 - Combinatorial Algebra meets Algebraic Combinatorics. Montréal, QC, Canada. Jan. 2024
 - Combinatorics Seminar. Laboratoire d'Algèbre, de Combinatoire et d'Informatique Mathématique. Montréal, QC, Canada. Dec. 2023
 - Combinatorics Seminar. University of California, San Diego. La Jolla, CA. Nov. 2023
 - Algebra Seminar. Virginia Polytechnic Institute and State University. Blacksburg, VA. Nov. 2023
 - Combinatorics Seminar. University of Waterloo. Waterloo, ON, Canada. Sep. 2023
 - Algebraic Combinatorics Seminar. Fields Institute. Toronto, ON, Canada. Sep. 2023
- Top-degree components of Grothendieck and Lascoux polynomials**
- Combinatorics Seminar. University of Michigan. Ann Arbor, MI. (invited) Mar. 2023
 - Graduate Student Combinatorics Conference. St. Louis, MO. Mar. 2023
 - Combinatorics Seminar. University of California, San Diego. La Jolla, CA. Jan. 2023
 - Combinatorics Seminar. University of California, Los Angeles. Los Angeles, CA. Nov. 2022
- A row analogue of Hecke column insertion**
- Combinatorics Seminar. University of Florida. Gainesville, FL. Nov. 2022
 - Combinatorics Seminar. University of Minnesota. Minneapolis, MN. (invited) Sep. 2022
 - Combinatorics Seminar. University of Illinois, Urbana-Champaign. Urbana, IL. Sep. 2022
- Grothendieck to Lascoux expansions**
- Combinatorics and Geometry Seminar. University of Washington. Seattle, WA. Apr. 2022
 - Graduate Student Combinatorics Conference. San Diego, CA (via zoom). Mar. 2022
 - Algebra & Combinatorics Seminar. North Carolina State University. Raleigh, NC. (invited) Nov. 2021
 - Algebra Seminar. Virginia Polytechnic Institute and State University. Blacksburg, VA. Nov. 2021
 - Combinatorics Seminar. University of California, San Diego. La Jolla, CA. Oct. 2021
 - Combinatorics Seminar. University of Waterloo. Waterloo, ON, Canada (via zoom). (invited) Sep. 2021
 - Combinatorics Seminar. University of Illinois, Urbana-Champaign. Urbana, IL. (invited) Sep. 2021
 - Combinatorics Seminar. University of Minnesota. Minneapolis, MN. Sep. 2021
- Harmonic bases for generalized coinvariant algebras**
- Formal Power Series and Algebraic Combinatorics conference. Ramat-Gan, Israel (via zoom). Jan. 2022
 - Combinatorics Seminar. University of California, San Diego. La Jolla, CA. Jun. 2021

TEACHING
EXPERIENCE

Department of Mathematics, UCSD

Teaching Assistant: Calculus, Mathematical Reasoning, Combinatorics, Algebraic Combinatorics.

Department of Computer Science and Engineering, UCSD

Teaching Assistant: Discrete Mathematics, Design and Analysis of Algorithms, Theory of Computability.