Eduardo Torres Dávila

Contact Information

University of Minnesota
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Education

2020 – present **University of Minnesota**
PhD Candidate

2020 – 2023 **University of Minnesota**
MS in Mathematics

2016 – 2020 **San Diego State University**
BS in Applied Mathematics
Minor: Computer Science

Awards

College of Science & Engineering Graduate Fellowship (2020 – 2023)

Publications

Numerical semigroups, polyhedra, and posets III: minimal presentations and face dimension, with Tara Gomes & Christopher O'Neill.
Electronic Journal of Combinatorics **30** (2023), No. 2, #P2.57. (doi) (arXiv:2009.05921)

Numerical semigroups, polyhedra, and posets II: locating certain families of semigroups, with Jackson Autry, Abigail Ezell, Tara Gomes, Christopher O'Neill, Christopher Preuss, & Tarang Saluja.
Advances in Geometry **22** (2022), No. 1, 33-48. (doi) (arXiv:1912.04460)

Visualizing the support of Kostant's weight multiplicity formula for the rank two Lie algebras, with Pamela E. Harris, Marissa Loving, Juan Ramirez, Joseph Rennie, Gordon Rojas Kirby, & Fabrice O. Ulysse.
Involve **17** (2024), No. 2, 183-215. (doi) (arXiv:1908.08405)

Preprints

Infinite free resolutions over numerical semigroup algebras via specialization, with Tara Gomes, Christopher O'Neill, & Aleksandra Sobieska.
Submitted. (arXiv:2405.01700)

The multigraded BGG correspondence in Macaulay2, with Maya Banks, Michael K. Brown, Tara Gomes, Prashanth Sridhar, & Alexandre Zotine.
Submitted. (arXiv:2402.12293)

Mentorship /Teaching Experience

2023 - 2024 *Graduate Teaching Assistant: Math 1151 - Precalculus II.*
Department of Mathematics, University of Minnesota.

Summer 2022 *PolyMath Jr. REU Assistant Mentor.*

Spring 2022 *Graduate Teaching Assistant: Math 1271 - Calculus I.*
Department of Mathematics, University of Minnesota.

Work Experience

Summer 2023 **Amazon**, Seattle, WA.
Software Developer Engineer Intern.

Undergraduate Research Experience

Summer 2020	*Funded Research in Combinatorial & Commutative Algebra.* **Advisor:** Christopher O'Neill, Department of Mathematics, San Diego State University.
2019 – 2020	*Funded Research in Polyhedral Geometry.* **Advisor:** Christopher O'Neill, Department of Mathematics, San Diego State University.
Summer 2019	*REU in Applied Combinatorics & Discrete Mathematics* (**MSRI-UP**). Mathematical Science Research Institute, Berkeley, CA, USA. **Advisor:** Pamela E. Harris, Department of Mathematics, Williams College.
Spring 2019	*Research in Numerical Semigroups.* **Advisor:** Christopher O'Neill, Department of Mathematics, San Diego State University.

Conferences /Programs Attended

2024	Macaulay2 Workshop, University of Utah. Recent Developments in Commutative Algebra, SLMath. Introductory Workshop in Commutative Algebra, SLMath.
2023	Macaulay2 Workshop, University of Minnesota. Summer School in Commutative Algebra, University of Notre Dame. Urica Jr., University of Nebraska-Lincoln.
2022	KUMUNU, University of Nebraska-Lincoln. AWM Research Symposium, University of Minnesota. GradMoCCA, University of Minnesota.
2020	SGPs Research Seminar, San Diego State University. Joint Math Meetings, Denver, Colorado. • Undergraduate Poster Session (Honorable Mention).
2019	Field of Dreams, Washington University in St. Louis. SACNAS National, Honolulu, Hawaii. Math Alliance Facilitated Graduate Applications Process (F-GAP).

Talks /Panels

University of Minnesota, Oral Examination, April 2023
Finding Noetherian Operators for a Differential Primary Decomposition

University of Minnesota, CA+ Turbo Talk, April 2023
Differential Primary Decompositions

University of Minnesota, Mathematics of Climate Seminar, July 2022
The fundamental theorem of dynamical systems

University of Minnesota, Women in Math, February 2022
Completing your core requirements panel

University of Minnesota, Math Club, November 2021
Research experience for undergraduates panel

San Diego State University, SGPs Resarch Seminar, September 2020
Minimizing minimal presentations

San Diego State University, SGPs Research Seminar, March 2020
Minimal presentations of Kunz posets

Mathematical Sciences Research Institute, MSRI-UP, July 2019
Visualizing the support of Kostant's weight multiplicity formula for the rank two Lie algebras

Writing Contributions

Networking Basics for Math Undergrads, with Joanne Beckford, Alex Christensen, Pamela E. Harris, Lucy Martinez, & Fabrice O. Ulysse, e-Mentoring Network in the Mathematical Sciences - connecting students and mentors. AMS Blogs. July 21, 2020.

Bank of REU/Grad Fair Questions, with Pamela E. Harris & Lucy Martinez, e-Mentoring Network in the Mathematical Sciences - connecting students and mentors. AMS Blogs. January 24, 2020.

Relevant Skills

Technical Skills:	Macaulay2, Python, JavaScript, Java, SageMath, Git
Soft Skills:	Mentoring/Teaching, Bilingual (English/Spanish)