

Trevor Gunn

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EDUCATION

PhD in Mathematics Georgia Institute of Technology Aug 2017–present

Thesis: *Polynomial equations over tracts and fully-faithful tropicalization*

Advisor: Prof. Matthew Baker

Bachelor of Mathematics University of Waterloo June 2017

Pure Math, Combinatorics & Optimization

With distinction – Dean's Honours List

AREA OF INTEREST

I am interested in connections between combinatorics and algebraic geometry. In particular, tropical geometry, matroids, hyperfields and ordered blueprints. My current work involves studying polynomials over hyperfields/blueprints.

TECHNICAL SKILLS

- ▶ Git source control management – github.com/trevorgunn
- ▶ R – used extensively in teaching Introduction to Probability and Statistics
- ▶ Python – for open source contributions (e.g. [SageMath](#))
- ▶ Javascript – for open source contributions (e.g. [LaTeX Workshop](#))
- ▶ HTML/CSS/PreTeXt – for my website and online notes

SCHOLARSHIPS & AWARDS

2022 Outstanding TA Award

2020 FESTA Fellowship

2020 Outstanding Math Lab Tutor

2017 NSERC Undergraduate Student Research Award

Topic: *Tropical scheme theory*

2016 NSERC Undergraduate Student Research Award

Topic: *Enumerating maps via symmetric functions*

2013 University of Waterloo President's Scholarship

PROFESSIONAL SERVICE

2019–present	co-organizer	Georgia Tech Algebraic Student Seminar
2022–present	co-organizer	Graduate Student Colloquium
2022–present	member	Graduate Student Council
2022	lead organizer	Georgia Tech High School Math Competition
2017–2021	volunteer	Georgia Tech High School Math Competition
2021	co-organizer	Tropical Geometry Seminar
2020	co-organizer	Learning Seminar on Lorentzian Polynomials
2019–2020	co-organizer	Georgia Tech Research Horizons Seminar

TEACHING AND OUTREACH

High School Math Competition Organizer, Georgia Tech

Responsibilities: *Decide the syllabus/admissible topics for the problems/duration and format and number of questions on each exam, organize meetings with volunteer problem writers, ensure the problems and solutions are in order, organize volunteer graders and communicate the solutions to them, communicate with high school teachers and students, update the competition website and registration form, distribute the problems and solutions to the high schoolers, run the competition (introduction and awards speeches, answer questions during exams)*

Fall 2021–Summer 2022

Course Instructor, Georgia Tech

Responsibilities: *Decide the textbook/syllabus/assessments, plan and present lectures, write and grade the problem sets/exams/course projects, manage office hours and the assistant grader/TA. Class sizes of about 50–80 students.*

(3215) Introduction to Probability and Statistics Summer 2022

(3012) Applied Combinatorics Summer 2021

Teaching Assistant, Georgia Tech

Responsibilities: *Teach bi/triweekly exercise-focused classes, hold weekly office hours, grade homeworks and exams, work with the course instructor to stay up to date on the course schedule, occasionally writing exercise sheets and solutions. Class sizes of about 20–30 students.*

(3012)	Applied Combinatorics	Sp 2022, Sp 2020, Sp 2018, Fa 2018
(2603)	Introduction to Discrete Mathematics	Su 2018
(2551)	Multivariable Calculus	Sp 2019

(2550)	Introduction to Multivariable Calculus	Fa 2018
(1564)	Linear Algebra with Abstract Vector Spaces	Fa 2021
(1554)	Linear Algebra	Fa 2020
(1553)	Introduction to Linear Algebra	Su 2019, Fa 2019
(1552)	Integral Calculus	Sp 2018
(1803)	Precalculus	Su 2020
(1711)	Finite Mathematics	Fa 2017

PUBLICATIONS

- [1] Trevor Gunn and Philipp Jell. *Construction of Fully Faithful Tropicalizations for Curves in Ambient Dimension 3*. 2019. arXiv: [1912.02648 \[math.AG\]](#).
- [2] Trevor Gunn. *A Newton Polygon Rule for Formally-Real Valued Fields and Multiplicities over the Signed Tropical Hyperfield*. 2019. arXiv: [1911.12274 \[math.RA\]](#).

CONFERENCE TALKS

August 2022	<i>Factoring Polynomials over Hyperfields</i>	Universität Regensburg
August 2019	<i>Construction of Fully Faithful Tropicalizations for Curves</i>	Universität Regensburg

CONFERENCES AND WORKSHOPS ATTENDED

August 2022	Young Reseachers' Conference on Nonarchimedean and Tropical Geometry	Universität Regensburg
April 2022	Georgia Algebraic Geometry Symposium	Emory University
April 2021	Algebraic Geometry and Polyhedra	ICERM (virtual)
August 2019	Young Reseachers' Conference on Nonarchimedean and Tropical Geometry	Universität Regensburg
April 2019	Meeting on Applied Algebraic Geometry	Georgia Tech
March 2019	Georgia Tech Tropical, Arithmetic and Combinatorial Algebraic-geometry	Georgia Tech
June 2018	Summer School on Hyperbolic Polynomials, Sums of Squares, and Optimization	Georgia Tech
April 2018	Georgia Algebraic Geometry Symposium	Georgia Tech
March 2018	Arizona Winter School (Iwasawa Theory)	University of Arizona
March 2019	Arizona Winter School (Non-Abelian Chabauty)	University of Arizona