

Aryaman Maithani | Curriculum Vitae

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Education

University of Utah

Ph.D. student in Mathematics

Advisor: Anurag K. Singh

Salt Lake City, UT

2022–present

Indian Institute of Technology Bombay

B.S. in Mathematics with Honors

Mumbai, India

2018–2022

Awards/Fellowships

Simons Dissertation Fellows in Mathematics

Simons Foundation

2025–2027

Pure Mathematics Fellowship

University of Utah

Fall 2024, Fall 2025

Institute Gold Medal

IIT Bombay

2022

Institute Academic Prize

IIT Bombay

2020, 2021

Research Interests

Commutative algebra: invariant theory, local cohomology, rings of differential operators.

Publications

7. *Homological properties of invariant rings of permutation groups* arXiv
Proceedings of the American Mathematical Society (To appear)
6. *Splitting the difference: Computations of the Reynolds operator in classical invariant theory* arXiv
Bulletin of the London Mathematical Society **58**:1, article no. e70175 (2026)
5. *Minimal cellular resolutions of powers of graphs*, arXiv
with Trung Chau and Tài Huy Hà
Electronic Journal of Combinatorics **33**:1, article no. P1.25 (2026)
4. *Edge ideals with linear quotients and without homological linear quotients*, arXiv
with Trung Chau and Kanoy Kumar Das
Mediterranean Journal of Mathematics **23**, article no. 31 (2026)
3. *Monomial ideals with minimal generalized Barile–Macchia resolutions*, arXiv
with Trung Chau and Tài Huy Hà
Vietnam Journal of Mathematics
2. *The Scarf complex of squarefree powers, symbolic powers of edge ideals, and cover ideals of graphs*, arXiv
with Trung Chau and Nursel Erey
Communications in Algebra **54**:3, 982–1001 (2026)
1. *Linear quotients of connected ideals of graphs*, with H. Ananthnarayan and Omkar Javadekar arXiv
Journal of Algebraic Combinatorics **61**, article no. 34 (2025)

Preprints

2. *Abelian extensions of equicharacteristic regular rings need not be Cohen–Macaulay*, arXiv:2511.19800 (2025)
with Anurag K. Singh and Prashanth Sridhar
1. *Polynomial invariants of classical subgroups of GL_2 : Conjugation over finite fields* arXiv:2501.15080 (2025)

Talks

Seminars

Commutative Algebra Seminar

Polynomial invariants of GL_2 : Conjugation over finite fields

Purdue University

September 2025

Commutative Algebra Seminar

Polynomial invariants of GL_2 : Conjugation over finite fields

UC San Diego

February 2025

Commutative Algebra Seminar

Polynomial invariants of GL_2 : Conjugation over finite fields

University of Utah

February 2025

Commutative Algebra Seminar

Invariant theory of commutative rings

IIT Bombay

August 2024

Commutative Algebra Seminar

Linear quotients of connected ideals of graphs

University of Utah

March 2024

Dualities in Topology and Algebra

Gorenstein rings

ICTS, India

May 2023

Graduate Student Seminars

BIKES, Commutative Algebra Graduate Student Seminar

On invariant rings of permutation groups

University of Utah

January 2026

Ideal Conversations, Commutative Algebra Graduate Student Seminar

Invariant theory of commutative rings

Purdue University

September 2025

BIKES, Commutative Algebra Graduate Student Seminar

Splittings in Classical Invariant Theory

University of Utah

August 2025

BIKES, Commutative Algebra Graduate Student Seminar

Examples of badly-behaved rings

University of Utah

August 2024

BIKES, Commutative Algebra Graduate Student Seminar

Linear quotients of connected ideals of graphs

University of Utah

February 2024

Commutative Algebra Graduate Student Seminar

Invariant theory of commutative rings

University of Michigan

October 2023

BIKES, Commutative Algebra Graduate Student Seminar

Invariant theory of commutative rings

University of Utah

September 2023

General Math Talks

Graduate Student Colloquium

Shut your π hole!

University of Utah

March 2024

Math Circle

Fun with graphs

University of Utah

March 2023

Graduate Student Colloquium

Chaos theory

University of Utah

February 2023

Teaching Experience

Instructor of Record

MATH 1220: Calculus II

University of Utah

Spring 2025, Summer 2024

MATH 1090: Business Algebra

University of Utah

Spring 2024

MATH 1060: Trigonometry

University of Utah

Fall 2023

MATH 1010: Intermediate Algebra

University of Utah

Summer 2023

Graduate Teaching Assistant

MATH 2250: Differential Equations and Linear Algebra

University of Utah

Spring 2023, Fall 2022

Teaching Assistant for Workshops

Recent Developments in Commutative Algebra

IIT Dharwad

24–29 June 2025

Pre-REU 2025: Introducing undergraduates to research

University of Utah

6–30 May 2025

Grader for Graduate Courses

MATH 6520: Algebraic Topology

University of Utah

Spring 2024

MATH 6310: Modern Algebra 1

University of Utah

Fall 2023

MATH 6320: Modern Algebra 2

University of Utah

Spring 2023

Service/Outreach

- **University of Utah** **Salt Lake City, Utah, USA**
- *Graduate Student Advisory Committee*
 - 2024–2025: **GSAC Co-chair.**
Liaison between graduate students and department.
 - 2023–2025: **Recruitment committee.**
Welcome prospective graduate students and organize meetings with faculty for them.

Professional Memberships

- American Mathematical Society

Technical skills

Python, SageMath, Macaulay2, Magma, L^AT_EX